BRITISH ANTARCTIC SURVEY

SCIENTIFIC REPORTS

No. 60

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LONDON: PUBLISHED BY THE BRITISH ANTARCTIC SURVEY: 1968
NATURAL ENVIRONMENT RESEARCH COUNCIL

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ABSTRACT

A SYSTEMATIC account of the vascular flora of the Falkland Islands is presented, together with some consideration of its phytogeographical relationships and a general description of the plant communities. There is a brief sketch of the environment, and the history of botanical exploration in the archipelago is outlined.

A chronological summary of the known collections of vascular plants from the islands is provided, which gives available information on their source, extent and present location. Pernetty, in 1764, was the first botanist to visit the Falkland Islands, when he accompanied Admiral Bougainville, but significant knowledge of the plants only accrued in the first half of the nineteenth century, during which Gaudichaud, D'Urville and Hooker described almost three-quarters of the native flora and outlined its affinities. The most important subsequent contribution resulted from Skottsberg's extensive travels within the archipelago in 1907–08; this permitted him to describe the ecology of the flora and to define more precisely its phytogeographical relationships.

Brief descriptions and photographs of the more obvious plant associations are provided. These associations are arranged in seven groups, five of which are structural units, or formations, the others containing assemblages of littoral and fresh-water communities. Apart from local development of *Hebe* or *Chiliotrichum* bush, herbs or dwarf shrubs dominate the vegetation. Most of the Falkland Islands support some part of the oceanic heath formation, a complex in which dwarf shrub heath associations, usually dominated by *Empetrum*, favour the better-drained ground, while poorer drainage tends to result in *Cortaderia* grassland which grades into the fen and bog formation under conditions of more severely impeded drainage. A feldmark formation is developed at the highest elevations and locally in exposed areas near sea-level, while maritime tussock grassland fringes the coast in many places.

A brief phytogeographical survey demonstrates the close affinity between the Falkland Islands flora and that of southern South America, particularly Fuegia and the southern Andes. A small group of species is centred in the milder climate of southern Chile and there are interesting links with the flora of the North Temperate Zone via the Andes and with that of Australia and New Zealand via the circum-Antarctic islands. There is little detailed information on distributions of species within the Falkland Islands, but some representative maps are provided.

There are 163 species of flowering plants and vascular cryptogams native to the Falkland Islands, and a further 92 species have been reported as introduced. Descriptions and information on habitat and distribution are given in each case and, wherever possible, data on chromosome number and breeding system are provided for native species. Synonyms, places of publication for all names used and, for native species, information on type specimens, are cited as well as references to other relevant literature. Lists of specimens are grouped geographically as a preliminary to mapping species distributions within

the archipelago. An artificial key for the determination of genera is provided and, where necessary, there are keys for identifying species within a genus.

Two new combinations, resulting from recent nomenclatural and taxonomic studies, are published in this flora. They are: *Gentianella magellanica* (Gaudich.) Fabris and *Agoseris coronopifolia* (D'Urv.) Chambers.

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I. GENERAL DESCRIPTION

THE Falkland Islands lie between lat. 51°00′ and 52°30′S., and long. 57°40′ and 61°30′W., about 520 km. east of the Straits of Magellan. They are an archipelago which comprises two main islands, East Falkland (*c.* 5,000 km.^{2}) and West Falkland (*c.* 3,500 km.^{2}), together with more than 230 smaller islands varying from 220 km.^{2} to a few square metres in extent. The total land area of the archipelago is about 10,000–12,000 km.^{2}.

1. *Topography*

Although the relief is never dramatic, the Falkland Islands are generally hilly, especially in West Falkland and northern East Falkland. The principal mountain areas traverse the northern parts of the islands, from the Wickham Heights (Mount Usborne, 705 m.) in East Falkland to Mount Adam (701 m.) and the Byron Heights (Storm Mountain, 466 m.) in West Falkland. There is a further major upland area roughly parallel to Falkland Sound along its western side, which largely comprises the Hornby Mountains (Mount Maria, 658 m.; Mount Moody, 554 m.). Elsewhere the topography is relatively gentle, with projecting hills rarely exceeding 366 m.; south of the Wickham Heights the undulating plain of Lafonia rarely rises above 45 m.

The shores of West Falkland and the adjacent islands, which are exposed to the prevailing south-westerly swell, are bounded by high, rather steep cliffs. Elsewhere, the coastline of the Falkland Islands is characteristically heavily dissected, often with intricately indented complexes of bays and lagoons which can extend a considerable distance inland. Sandy or gravelly beaches, often with well-developed dunes, are common on the sheltered coasts. Streams and small rivers abound throughout the archipelago while shallow ponds are frequent.

2. *Geology and structure*

It is only possible to outline here the main features of the geology and structure of the Falkland Islands. The detailed data and their interpretation, upon which this summary is based, are provided by Andersson (1907), Hallé (1912), Baker (1922), Adie (1952*a*, *b*, 1953, 1958), and Cawkell and others (1960).

The oldest rocks in the Falkland Islands, belonging to the Archaean Basement Complex, are restricted to Cape Meredith, at the southernmost tip of West Falkland. Apart from a few Jurassic dolerite dykes, these are the only igneous rocks that occur in the archipelago, which is composed almost entirely of Palaeozoic and Mesozoic sediments. With the above exception, the southern part of West Falkland, roughly to a line between Port Richards and Port Edgar, as well as Weddell, Beaver and New Islands, is formed of Lower Devonian sediments. Middle Devonian and Lower Carboniferous sediments form almost all the rest of West Falkland and East Falkland north of the Wickham Heights. These sediments have been folded about an almost east–west axis to give rise to the main mountain systems of northern East and West Falkland, but subsidiary folding about an almost north–south axis is responsible for the Hornby Mountains of West Falkland (Adie, 1952*a*, *b*). Middle Devonian to Permo-Carboniferous sediments occur along the extreme east side of West Falkland, between Fox Bay and White Rock Bay, as well as in the north-east part of East Falkland. South of, and parallel to, the Wickham Heights is a zone of softer Upper Carboniferous–Lower Permian sediments, which have been heavily eroded to form a series of parallel ridges that rarely exceed 76 m. Isolated outliers of similar rocks are present along the north coast of West Falkland. The youngest rocks in the archipelago (Middle Permian to Lower Triassic) are almost horizontal and they form the low-lying level areas of Lafonia and the adjacent islands, together with an area along the north shores of Choiseul Sound and Brenton Loch, but Upper Triassic sediments occur along the west coast of Lafonia and on the islands in Falkland Sound, e.g. Tyssen Islands and Swan Island.

There is a close stratigraphical similarity between the Palaeozoic–Mesozoic sediments of the Falkland Islands and South Africa. The striking similarity between the marine invertebrate and plant fossils of both regions suggests that up to the Triassic the Falkland Islands had close affinities with South Africa rather

than eastern South America. Adie (1952*b*) has used this evidence, together with his studies of fold systems, to suggest that during the late Palaeozoic–early Mesozoic the Falkland Islands were adjacent to the Eastern Province of South Africa and that they drifted to their present position after the fragmentation of Gondwanaland.

The deeply indented coastline which characterizes much of the Falkland Islands, together with the underfit rivers and the fact that their valleys continue below sea-level, indicates that there has been submergence of the coastline subsequent to the formation of the main drainage features. Adie (1953) has provided data which suggest that in the early Pleistocene the sea-level stood at 46 m. below its present level. Presumably the drainage pattern must have originated at that time but subsequent inundation has not gradually given rise to the present-day situation since there appears to have been a late Pleistocene sea-level 69 m. above the present level.

Knowledge of the Quaternary botanical history of the Falkland Islands, which would be of great value in understanding several features of the modern flora, is almost totally lacking. There is no clear evidence of Pleistocene glacial features in the Falkland Islands, which suggests that the climate was periglacial at the time of the Pleistocene maximum ice advance in the Andes, Tierra del Fuego and Antarctica (Andersson, 1907; Adie, 1953). Whether plant species were able to survive the periglacial conditions on the Falkland Islands, and what sequence was followed by post-glacial vegetational changes is not known, so that there is a great need to analyse and date the peats and other Quaternary plant deposits which are available. Of considerable interest is the West Point Island deposit, which contains tree remains, amongst which Hallé (1912) identified *Podocarpus salignus* and *Austrocedrus chilensis*, Chilean species with modern ranges of lat. 38–42° and 34–45°S., respectively. It is clearly important to know whether these trees at one time grew in the area or whether the deposit represents a local accumulation of drift wood from farther north (Baker, 1922), and a modern study is highly desirable.

3. *Soils*

There is no comprehensive account of the soils of the archipelago, although some information was given by Skottsberg (1913) and Davies (1939), but the generally cold acid conditions, combined with leaching and the lack of disturbance, probably favour podsolization. Biotic activity in the soil seems to be generally low (Davies, 1939) and undegraded plant remains normally constitute a high proportion of the top soil, which may vary from a shallow, hard, dry peat under *Empetrum* on the quartzite ridges to a black, plastic humus under the *Chiliotrichum* scrub that fringes rivers and creeks. Peat accumulations are widespread and they can be a few centimetres to several metres thick, depending upon local drainage and rainfall. However, peat is absent from the stony gravelly soils at the highest elevations and from eroded areas in the lowlands, where a subsoil of small stones, gravel, sand and clay is exposed.

The soils are of generally low fertility. Some chemical analyses carried out by Orr (Davies, 1939) indicate that they are well supplied with available potash but are deficient in lime and, while they have a high content of total nitrogen, it is largely unavailable. Soils having a higher fertility than general are encountered in the damp level areas flanking many streams which cross the lowlands in small valleys and gullies. Such areas usually support a turf of high grazing potential (Davies, 1939) dominated by *Juncus scheuzerioides*, and their fertility may perhaps result from flushing of the surrounding land (Cawkell and others, 1960). It is also known that *Poa flabellata* requires a soil of high fertility, particularly one with abundant free nitrogen, and in the coastal habitats where it occurs this is probably largely supplied by excreta from the seals and sea-birds which inhabit the maritime tussock formation (Hooker, 1847; Davies, 1939).

4. *Climate*

Weather records have been collected continuously at Port Stanley since 1923 and synopses are now published annually by the Meteorological Office in the Falkland Islands. Pepper (1954) has provided summaries of the data for the period 1944–50 and these, together with subsequent tables issued by the Meteorological Office up to 1965, are used here to outline the climatic characteristics of the Falkland Islands. Less complete and rather sporadic records from various stations throughout the archipelago have been collected at intervals since 1951, and these are used to give some idea of variations within the area.

The Falkland Islands have a cool oceanic climate, with a relatively modest seasonal variation. An indication of summer and winter temperatures (°C) during the past 22 years can be gained from the following figures:

	Mean	*Minimum*	*Maximum*	*Mean minimum*	*Mean maximum*
January	**8·8**	0	23·9	5·4	12·9
July	**2·2**	—7·8	8·9	0	4·3

The mean winter temperatures are comparable with those experienced in Great Britain but the summer mean is more similar to conditions in Scotland and western Norway. Air frosts are uncommon in summer but no month is frost-free and ground frosts can occur throughout the year.

Overcast conditions are frequent, and at Port Stanley only on about 18 days in the year is more than half the sky free of cloud (Pepper, 1954), so that sunshine levels are low. Thus, in the period 1944–65 there was a daily average of 6·3 hr. sunshine and 77 per cent cloud cover in January, and 2·2 hr. sunshine and 72 per cent cloud cover in July.

The mean annual precipitation at Port Stanley during the period 1944–65 was 609·7 mm., varying from 492 mm. in 1960 to 780·8 mm. in 1945. This is comparable with the mean annual rainfall in the centre and east of Great Britain. Rain can fall on an average of 150 days in the year and the monthly means (1944–65) given below indicate that there is a markedly greater rainfall during the summer:

	(mm.)		(mm.)
January	71·4	July	43·9
February	55·4	August	47·2
March	49·7	September	38·2
April	50·3	October	33·3
May	54·5	November	41·8
June	50·9	December	73·6

It has been suggested by Skottsberg (1913) that the relatively low spring rainfall imposes strictures on plant growth so that a rather large number of species have xerophytic features.

At Port Stanley snow falls on about 55 days during the year and it may occur in any month, although usually in small amounts which probably do not lie for long (Cawkell and others, 1960). However, falls are no doubt heavier at higher elevations, but even there the snow only rarely persists through the summer as small patches in sheltered south-facing areas. In January and February 1964 no snow patches were found anywhere in the summit regions of either Mount Adam or Mount Usborne.

Pressure generally decreases steadily from north to south over the Falkland Islands, giving gradients for westerly winds; thus, about 50 per cent of the winds are between south-west and north-west, and these can occur in any month. However, depressions approaching from the north-west, west or south-west give rise to winds from other quadrants. There is a high frequency of strong winds but the proportion of gales is low (2·5 per cent). The strongest winds occur in November, thus probably emphasizing the effects of low spring precipitation on plant growth.

The rainfall and temperature data from other parts of the Falkland Islands, although incomplete, show several departures from the conditions at Port Stanley. From Table I it is clear that Port Stanley is in one of the wetter parts of the islands. The drier stations generally lie in the southern part of the archipelago, while those with the higher rainfall not only occur in the north but are also generally situated immediately north and east of high ground. In view of the prevailing westerly air streams across the area, it may be suggested that unstable air masses would be warmed by their passage over the southern part of the islands which, together with the uplift caused by the high ground to the north, might account for the observed distribution of rainfall. However, other factors are undoubtedly involved. Thus, the low rainfall of Pebble Island could result from its lying in the "rain shadow" of the Mount Adam complex. Data from West Point Island are available for only one complete year (1955) when the total precipitation was 363·1 mm., compared with 584·5 mm. in Port Stanley; the explanation for this low rainfall is not obvious. The marked difference in rainfall of San Carlos and Port San Carlos must be due to local factors, while Port Stephens (in southern West Falkland) apparently constitutes a further exception to the general rainfall

TABLE I

MEAN ANNUAL RAINFALL AT STATIONS IN THE FALKLAND ISLANDS FOR WHICH RECORDS ARE AVAILABLE FOR SIX OR MORE YEARS

(Meteorological Office, Port Stanley, 1965, 1966)

Station	*Period*	*Number of years*	(mm.)*
North Arm	1945		
	1947–64	19	399·7
Fox Bay East	1950–55		
	1959–65	13	407·7
Fitzroy	1948–64	17	468·0
Darwin	1948–62		
	1964	16	469·8
Pebble Island	1950–53		
	1955–56	6	473·5
San Carlos	1953–59		
	1961–63	10	520·9
Hill Cove	1956–65	10	569·0
Port Stanley	1944–65	22	609·7
Port San Carlos	1958–65	8	636·2
Port Howard	1950–65	16	646·3

* The means are derived only from those years in which data were available for every month.

pattern, since in the two years (1951–52) for which complete data are available, the annual totals were 661·7 and 567·9 mm., respectively, compared with 686·6 and 544·2 mm. in Port Stanley.

Fig. 1 shows the mean, mean maximum and mean minimum January and July temperatures for Fox Bay and West Point Island compared with those for Port Stanley. These data, although scanty, indicate a marked trend towards higher temperatures in the west of the archipelago. It is interesting that both summer and winter maximum temperatures appear to be higher in the West Falkland stations than at Port Stanley, while Fox Bay frequently has lower minimum temperatures than Port Stanley, a tendency also reflected in the monthly means.

It is clear from the rainfall and temperature data that there are climatic gradients within the Falkland Islands which could repay further investigation. The suggestion of increasing temperatures towards the west and south of the islands may well be an important factor affecting the distribution of some plants within the archipelago (p. 24).

II. BOTANICAL EXPLORATION

THE first botanist known to have visited the Falkland Islands was Antoine Joseph Pernetty (naturalist with Bougainville's colonizing expedition), who was in the vicinity of Port Louis, East Falkland, from 2 February to 8 April 1764. He made no collections but referred to a few plants, by their colloquial names, in his account of the voyage (Pernetty, 1770). Since then, collections of flowering plants and ferns have been made by about 60 people, the names and brief biographical details of whom are listed chronologically in Table II. This table also indicates their collecting localities and summarizes the available information on the size, dates and present location of their collections. References are also given to published accounts which relate to the collections or which give details of botanical interest.

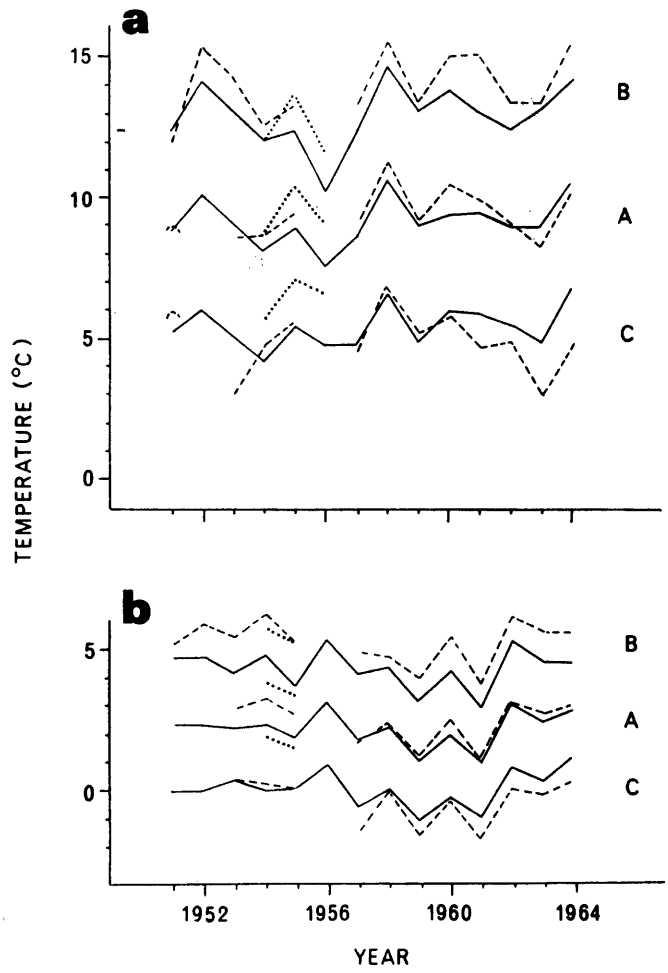


FIGURE 1

Monthly mean (A), maximum (B) and minimum (C) temperatures at Port Stanley (continuous line), Fox Bay (pecked line) and West Point Island (dotted line) for January (a) and July (b).

Whilst it is not necessary to discuss in detail the information summarized in Table II, it is perhaps worthwhile to outline briefly the progress of botanical knowledge of the Falkland Islands since Pernetty's visit. This can be done by recognizing three periods, each of 50–60 years, for which Hooker (1847), Skottsberg (1913) and the present account provide convenient summaries.

Luis Née, botanist on the voyages of Capt. Malaspina (De Novo y Colson, 1885; Bona, 1935), made the first known collection for the Falkland Islands, at Port Egmont in West Falkland. The specimens are deposited in the Cavanilles herbarium at Madrid, but their number is not known. The only published references are those of Cavanilles (1799, 1801), who described six new species based on the Née collection. Between the visit of Née and the publication of *Flora Antarctica* (Hooker, 1847), all the collectors were on the complement of visiting surveying or expedition ships, with the possible exception of the "mercantile gentleman" Mr. Wright, mentioned by Hooker (1847), who may have been resident. Details of many of these expeditions are given by Godley (1965). All collections for which localities are known were made in the north-east part of East Falkland and it is worth noting that, despite the limited area studied by these visitors, Hooker was able to outline the main features of the flora. Thus, of the 163 native species at present recognized, Gaudichaud collected 64, a total raised to 93 by D'Urville and to 119 by Hooker. The fact that more than two-thirds of the known flora could be collected within a few square miles serves to emphasize the general botanical uniformity of the archipelago.

Twenty people made plant collections in the Falkland Islands between 1847 and 1913. The American botanist, George Hiram Snyder, who visited New Island and adjacent areas in 1852, is noteworthy in

CHRONOLOGICAL SUMMARY OF VASCULAR PLANT COLLECTIONS FROM THE FALKLAND ISLANDS

Collector	*Dates of collection*	*Collecting areas*	*Location† and size of collection*	*Notes*
L. Née	18–23 December 1789; 2–20 January 1794	**WF:** Port Egmont	MA	Botanist on Capt. Malaspina's expedition
C. Gaudichaud-Beaupré	14 February–28 April 1820	**EF:** Port Louis	BM (2 spp., 2 sheets) K (29 spp., 29 sheets) P* (75 spp.)	Botanist with M. Louis de Freycinet (Gaudichaud, 1825, 1826)
Dumont D'Urville	20 November–18 December 1822	**EF:** Port Louis, Mount Simon (as Mount Chatellux)	K (2 spp., 2 sheets) P* (108 spp.)	Botanist with Admiral Duperrey (D'Urville, 1825, 1826; Duperrey, 1825; Bory de St. Vincent, 1828; Brongniart, 1829)
R. P. Lesson	20 November–18 December 1822	**EF:** Port Louis	K (24 spp., 24 sheets) P*	Doctor and assistant to D'Urville
C. Darwin	1 March–6 April 1833; 10 March–8 April 1834	**EF:** Berkley Sound to Port Louis	CGE* (22 spp., 24 sheets) K (18 spp., 19 sheets)	Naturalist with Capt. Fitzroy on H.M.S. *Beagle* (Hooker, 1847)
Lt Robinson	? 1840	Not known	K (3 spp., 3 sheets)	Perhaps aboard surveying ship H.M.S. *Arrow* (Hooker, 1847)
J. D. Hooker	6 April–8 September; 12 November–17 December 1842	**EF:** Port William, Salvador Bay, Mount Vernet	BM (71 spp., 74 sheets) CGE (2 spp., 2 sheets) G Gl K* (110 spp., 167 sheets) P	Botanist aboard H.M.S. *Erebus* with Sir James Clark Ross (Hooker, 1847)
R. McCormick	6 April–8 September; 12 November–17 December 1842	**EF:** Port William, Salvador Bay	BM (14 spp., 14 sheets)	Surgeon aboard H.M.S. *Erebus*
T. Edmonston	19–30 September 1845	**EF:** Port William, neighbourhood of Port Stanley	K (4 spp., 4 sheets)	Naturalist aboard H.M.S. *Herald* (Seemann, 1853, Vol. 1)
Mr. Wright	Prior to 1847	Not known	K (28 spp., 28 sheets)	"Mercantile gentleman" (Hooker, 1847)
Mrs. B. J. Sulivan	1842–45	**EF:** Port Stanley	K (2 spp., 2 sheets)	Wife of captain of surveying ship H.M.S. *Philomel* (Hooker, 1847)
Mr. Chartres	1842–45	Not known	K (7 spp., 7 sheets)	Surgeon aboard H.M.S. *Philomel* (Hooker, 1847)
W. Lechler	2–18 September 1850	**EF:** Port Stanley, Mount William	K (17 spp., 18 sheets)	Noted German collector and student of South American plants
G. H. Snyder	1 December 1852–1 April 1853	**WF:** New Island, Port Albemarle	CU (35 spp., 54 sheets)	American botanist who travelled on a cattle boat, according to Clausen (1948), although the localities might suggest a sealing vessel
Capt. C. C. Abbott	February 1858–October 1860	Not known	BM (2 spp., 2 sheets) K (24 spp., 24 sheets)	Captain of marine garrison, Port Stanley (Boyson, 1924, p. 139)

(continued overleaf)

TABLE II—*continued*

Collector	*Dates of collection*	*Collecting areas*	*Location† and size of collection*	*Notes*
Havers	1860 (perhaps date of receipt by museum)	Not known	BM (12 spp., 12 sheets)	Probably Thos. Havers, who was Colonial Manager of the Falkland Islands Company, 1853–58, or a relative
Lt H. F. Carr	January 1868	EF: San Carlos	K (1 sp., 1 sheet)	Aboard H.M.S. *Narcissus*
Capt. Cuming	1868	EF: Port San Carlos	K (1 sp., 1 sheet)	? Aboard H.M.S. *Narcissus*
R. O. Cunningham	19 February–2 March 1867;	EF: Port Stanley, Mount William	K (31 spp., 31 sheets)	Naturalist aboard surveying ship H.M.S. *Nassau* (Cunningham, 1871)
	13–28 January 1868; 29–31 January 1868	EF: Tyssen Islands WF: Fox Bay	K (27 spp., 27 sheets)	
Mrs. E. T. Holmested	1884	?WF	BM (3 spp., 3 sheets)	Wife of Mr. Holmested who settled at Hill Cove in 1868
Miss L. H. Firmin	1895–97	WF: Probably Hill Cove area	K (11 spp., 11 sheets)	Visitor, perhaps school-teacher, at Hill Cove
J. Miers	July 1898	Not known	K (1 sp., 1 sheet)	No information
E. Nichol	March 1899	WF: Roy Cove	BM (50 spp., 50 sheets)	Possibly children's governess at Roy Cove
E. R. Bossière	February–April 1901	EF: Port Stanley, Darwin	P (14 spp., 26 sheets)	French visitor studying sheep farming prior to taking up a concession, with his brother, in Iles de Kerguelen (Bossière, 1907, 1909; Aubert de la Rue, 1953)
R. Vallentin	1901–02	EF: Port Stanley–Port Louis area WF: Roy Cove–Mount Adam area	MANCH (34 spp., 34 sheets)	Visiting naturalist (Melvill, 1903)
A. W. Hill	November 1902	EF: Port Stanley, Port Churchill	K (47 spp., 47 sheets)	Director of Royal Botanic Gardens, Kew, who collected widely along the Andes
Scottish National Antarctic Expedition	Intervals during 1901–04	EF	BM (7 spp., 7 sheets)	No information on collectors involved
Miss Coleman	1903	Not known	MANCH (2 spp., 3 sheets)	No information
S. Birger	February–March 1904	EF: Near Port Stanley	S UPS	Botanist connected with Swedish South Polar Expedition, 1901–03 (Birger, 1907)
J. Morton Middleton	24 November 1904	EF: Port Stanley	MANCH (3 spp., 3 sheets)	Collected plants extensively in South America
C. Skottsberg	11 December 1901–30 March 1902;	EF: Port Stanley	BM (6 spp., 6 sheets) UPS*	Botanist with Swedish South Polar Expedition, 1901–03, and Swedish Magellanic Expedition, 1907–09 (Skottsberg, 1908, 1909, 1911, 1913; Gandoger, 1912, 1913)
	26 October 1907–12 February 1908	EF: Port Stanley, Port Salvador, Mount Usborne, San Carlos, northern Lafonia	K (19 spp., 19 sheets) S (157 spp.) SI UPS*	

		Howard, west via Shallow Bay and Hill Cove to West Point Island. Roy Cove and Port Philomel areas, Weddell, Beaver and New Islands			
Mrs. E. Vallentin	November 1909–March 1911	**WF:** Roy Cove, Shallow Bay, Hill Cove, Port Philomel area, West Point Island, Keppel Island, Carcass Island, Fox Bay **EF:** Port Stanley	BM K* MANCH	(58 spp., 61 sheets) (143 spp., 330 sheets) (116 spp., 172 sheets, including the specimens used for her coloured illustrations)	Resident at Roy Cove (Wright, 1911; Vallentin and Cotton, 1921; Marquand, 1923; Skottsberg, 1929)
Clarence Elliott	1910 and 1928	**EF:** Port Stanley	K	(2 spp., 2 sheets)	English nurseryman who collected widely along the Andes
Miss F. J. Hennis	1914	Not known	BM	(20 spp., 20 sheets)	No information
A. G. Bennett	8 September–16 December 1917; 9 November–30 December 1933; 12 January–30 October 1935; 1 November 1937–19 October 1938	**EF:** Port Stanley area, San Carlos, Port San Carlos **WF:** Split Island, Eagle Rock	BM K	(36 spp., 45 sheets) (2 spp., 2 sheets)	School-teacher
T. W. Proges	1920	Not known	BM	(8 spp., 8 sheets)	No information
J. Middleton	*c.* 1923	Not known	K	(8 spp., 11 sheets)	Governor of the Falkland Islands; specimens probably not collected by him
Mrs. C. H. Blake	November 1924–April 1926	**EF:** William Point **WF:** Hill Cove, Roy Cove area, Carcass Island	MANCH	(56 spp., 66 sheets)	Visited the islands with her husband, Mr. R. Blake, who had lived at Hill Cove about 1873–99
J. Reid	4 June 1926	**EF:** Cape Pembroke	K	(3 spp., 6 sheets)	Forest Officer (Hubbard, 1937)
British Graham Land Expedition	28 July 1936	**EF:** Rabbit Cove	BM	(3 spp., 3 sheets)	No information on collectors involved
F. J. Smith	January 1937	**WF:** Cape Meredith, Carcass Island, Pebble Island, Spring Point **EF:** Port Stanley area	BM	(19 spp., 19 sheets)	No information
D. S. Weir	April 1937	Not known	K	(14 spp., 14 sheets)	No information
W. Davies	20 November 1937–11 March 1938	**EF:** Port Stanley area, Mount Low, Mount Simon, Douglas Station, Darwin, Bleaker Island, Johnson Harbour	K	(70 spp., 143 sheets)	Visited islands to study and advise on natural and improved pastures (Davies, 1939)

(continued overleaf)

TABLE II—*continued*

Collector	*Dates of collection*	*Collecting areas*	*Location† and size of collection*	*Notes*
W. Davies (*continued*)		**WF:** Port Howard, White Rock, Hill Cove, West Point Island, Spring Point, New Island, Port Stephens		
Capt. C. Ingram	1938	Not known	BM (9 spp., 9 sheets)	English plant collector and ornithologist
J. G. Gibbs	1940–46	**EF:** Port Stanley **WF:** Pebble and Carcass Islands	K (18 spp., 20 sheets)	No information
I. M. Lamb	3 February 1946	**EF:** Sparrow Cove	BM (4 spp., 4 sheets)	Botanist with "Operation Tabarin"
J. E. Hamilton	1 December 1935–5 February 1936; December 1944–17 February 1951	**EF:** Cape Dolphin **EF:** Port Stanley area, Fitzroy, Rincon Grande **WF:** Hill Cove, Carcass Island, Port Stephens	BM (7 spp., 8 sheets) BM (46 spp., 76 sheets)	Government Naturalist (Moore and Sladen, 1965)
J. R. F. Joyce	March 1947	**EF:** Port Stanley area	BM (1 sp., 1 sheet)	Geologist with Falkland Islands Dependencies Survey
W. J. L. Sladen	10 April–11 June, 26 November–22 December 1949; 2–8 January 1950; 28 April–26 June 1951	**EF:** Port Stanley area, Port Salvador area **WF:** Fox Bay, Chartres to Hill Cove, Pebble Island, Carcass Island, West Point Island	BIRM (25 spp., 25 sheets) BM* (136 spp., 304 sheets)	Medical Officer and Biologist with Falkland Islands Dependencies Survey (Moore and Sladen, 1965)
S. W. Greene	3–4 December 1960	**EF:** Port Stanley area	BIRM (27 spp., 29 sheets) K* (40 spp., 41 sheets)	Botanist *en route* to South Georgia with Falkland Islands Dependencies Survey (Moore and Sladen, 1965)
J. B. Killingbeck	2–3 December 1960	**EF:** Port Stanley area	BIRM (21 spp., 22 sheets)	General assistant with Falkland Islands Dependencies Survey (Moore and Sladen, 1965)
B. J. Taylor	2–4 December 1960	**EF:** Port Stanley area	BIRM (7 spp., 11 sheets)	Geologist with Falkland Islands Dependencies Survey (Moore and Sladen, 1965)
H. Dollman	10 December 1960	**EF:** Port Stanley area	BIRM (1 sp., 1 sheet)	General assistant with Falkland Islands Dependencies Survey (Moore and Sladen, 1965)
M. W. Holdgate	27 November–	**EF:** Port Stanley area	BIRM (37 spp., 43 sheets)	Senior Biologist, Falkland Islands

	13 November 1963	Mount Usborne	K LTR	(2 spp., 2 sheets) (27 spp., 29 sheets)	with British Antarctic Survey (Moore, 1967*a*)
R. E. Longton and M. W. Holdgate	21–23 November 1963	**EF:** Near Port Stanley	BIRM	(5 spp., 5 sheets)	Biologists with British Antarctic Survey
D. M. Moore	4 January–3 March 1964	**EF:** Port Stanley area, Darwin–San Carlos –Mount Usborne, north Lafonia **WF:** Port Stephens–Cape Meredith area, Hill Cove–Mount Adam–West Point Island	BIRM C CHR GH K LP LTR* P S SGO UC US	(68 spp., 69 sheets) (77 spp., 92 sheets) (64 spp., 66 sheets) (121 spp., 141 sheets) (155 spp., 304 sheets) (137 spp., 181 sheets) (158 spp., 410 sheets) (55 spp., 62 sheets) (129 spp., 161 sheets) (6 spp., 6 sheets) (49 spp., 54 sheets) (80 spp., 96 sheets)	Botanist (Moore and Sladen, 1965; Moore, 1967*a*, *b*)
R. E. Longton and R. I. L. Smith	26 November 1964–10 January 1965	**EF:** Near Port Stanley	BIRM	(22 spp., 26 sheets)	Botanists with British Antarctic Survey
S. Booth	1959–65	**EF:** Near Port Stanley **WF:** Port Howard, Carcass Island	LTR	(63 spp., 73 sheets)	Headmaster, Port Stanley schools (Moore, 1967*a*)
R. E. Longton	10–18 January 1965	**EF:** Near Port Stanley	BIRM	(8 spp., 8 sheets)	Botanist with British Antarctic Survey (Moore, 1967*a*)
C. D. Young	April 1965	**EF:** Port San Carlos	LTR	(6 spp., 10 sheets)	Agricultural Officer, Port Stanley

† Herbaria are listed alphabetically and those containing the largest collections are asterisked.

Herbarium abbreviations are as recommended by Lanjouw and Stafleu (1964):

BIRM	Department of Botany, University of Birmingham (referring here to the collection of the British Antarctic Survey)
BM	Department of Botany, British Museum (Nat. Hist.)
C	Botanical Museum, Copenhagen
CGE	Botany School, University of Cambridge
CHR	Botany Division, D.S.I.R., Christchurch
CU	Wiegand Herbarium, Department of Botany, Cornell University, Ithaca
G	Conservatoire et Jardin botaniques, Genève
GH	Gray Herbarium, Harvard University, Cambridge, Mass.
Gl	Department of Botany, University of Glasgow
K	Royal Botanic Gardens, Kew
LP	División de Plantas Vasculares, Museo de La Plata
LTR	Botany Department, University of Leicester
MA	Instituto "Antonio José Cavanilles", Jardín Botánico, Madrid
MANCH	The Manchester Museum, University of Manchester
P	Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, Paris
S	Botanical Department, Naturhistoriska Riksmuseum, Stockholm
SGO	Museo Nacional de Historia Natural, Santiago de Chile
SI	Instituto de Botánica Darwinion, San Isidro
UC	University of California, Berkeley
UPS	Institute of Systematic Botany, University of Uppsala
US	Department of Botany, U.S. National Museum, Washington.

making the first collection from West Falkland since Née, while Robert Cunningham collected the first plants along Falkland Sound. Although most plant collections during this period were made by visitors, several residents, particularly Mrs. Eleanor Vallentin, of Roy Cove, made an important contribution. Mrs. Vallentin collected extensively in the northern part of West Falkland and she prepared fine coloured drawings of many species, a selection of which was published shortly after her death (Vallentin and Cotton, 1921). Selim Birger, a Swedish botanist, made the first studies of plant communities in the area of Port Stanley (Birger, 1907), and he was also the first person to pay close attention to the introduced plants, noting 38 species. The ecological studies of Birger were considerably amplified by his fellow countryman, Carl Skottsberg, who spent 4 months in the islands on his second visit, during which he travelled on horseback over more of the archipelago than any of the previous, and most subsequent, botanists. He collected 18 species new to the islands and these, together with other new discoveries, principally made by Mrs. Vallentin, raised the total native flora to 153 of the species at present recognized. Thus, the increased botanical exploration of the archipelago, particularly the efforts in West Falkland, had added 35 native species to the known flora in the 58 years since Hooker's publication. In addition, Skottsberg (1913) gave the first detailed account of the plant communities found throughout the islands.

During the 54 years since Skottsberg's publication a further ten native species have been discovered in the Falkland Islands and, although underworked areas may well hold further discoveries, it seems unlikely that the present total of 163 native species will be significantly increased. However, our knowledge of the distribution of individual species within the archipelago is still rather scanty (p. 24), while it is clear from the account of the vegetation (p. 14) that more detailed ecological studies are now required.

With the exception of Birger (1907), the early botanists paid relatively little attention to introduced species, but this has subsequently been remedied by the grassland studies of Davies and the extensive collections made by Sladen (Moore and Sladen, 1965) and 92 such species are now known. About 25 per cent of the introduced species appear to be established away from human settlements, and it will be of considerable interest to see what future modifications these may cause in the structure of the plant communities and whether other alien species are able to become less dependent than at present upon habitats greatly disturbed by man.

The first chromosome studies of Falkland Islands plants are given by Moore (1967*b*), while the cultivation of species and artificial hybrids in greenhouse and experimental garden has aided the taxonomic treatment presented later (p. 28). Skottsberg's (1905, 1913) studies of breeding systems have been continued and the data available are included in the species descriptions.

III. VEGETATION

THE predominating plant associations found in the Falkland Islands are closely related to each other, so that the vegetation tends to have a rather monotonous appearance, accentuated by the absence of any significant arborescent vegetation. Indeed, many people must have echoed the lament of D'Urville (1825) that "pas un arbre, pas un véritable arbrisseau ne vient rompre l'uniformité de ces vastes solitudes". Furthermore, many of the more conspicuous species have a high ecological amplitude so that community differentiation is difficult and a satisfactory treatment must await detailed quantitative studies.

This account, which is based largely on that given by Skottsberg (1913), is intended to indicate briefly the principal plant communities present in the Falkland Islands. The different communities (associations), each characterized by a particular dominant species or group of species, are placed into physiognomically distinct types of vegetation (formations), where these can be recognized. Only the more interesting or important species present in each association are mentioned, but Skottsberg (1913) and Davies (1939) have given lists of species, with an indication of their relative frequencies, for some of the communities.

1. *Maritime tussock formation*

***Poa flabellata* association.** The association is confined to coastal areas, usually below 200 m. but sometimes reaching an altitude of *c.* 300 m. At its maximum development, it comprises an almost pure stand of *Poa flabellata* (Plate Ia). The tussocks can attain a height of 2–3 m., each comprising a fibrous stock up to 1·5–2·0 m. high and 1·0–1·5 m. in diameter surmounted by a dense crown of leaves. The leaves of adjoining tussocks interlace to form a canopy that excludes all associates except the robust *Carex trifida*.

Where the community is interrupted, as on coastal cliffs, associated species include *Senecio littoralis*, *Luzula alopecurus*, *Poa antarctica* and *Hebe elliptica*. Breaks in the *Poa flabellata* canopy, resulting from drainage channels or the mechanical effects of, for example, the passage of sea lions, allow the ingress of such species as *Apium australe*, *Callitriche antarctica* and *Alopecurus antarcticus*, as well as the aliens *Stellaria media* and *Poa annua*.

It is not clear whether this association ever occupied the whole littoral of the archipelago but it was certainly hitherto much more widespread than at present (e.g. Hooker, 1847). *Poa flabellata* has been greatly reduced since human settlement, owing to its being highly palatable to stock, and the association is now well developed only in a relatively few localities where it is protected from grazing, largely on offshore islets. However, re-planting has been undertaken satisfactorily in one or two areas (e.g. Port Stephens and West Point Island).

Degradation of the association frequently results in stripping the peat formed from the stools to expose the parent material (Plate Ib) and, where this is sand, mobile dunes may result. Often, however, the stools decay slowly and, in many instances, they are colonized initially by extensive stands of *Rumex acetosella*. Ultimately, various facies of the oceanic heath formation can develop.

2. *Oceanic heath formation*

Most of the Falkland Islands are covered by some facies of the communities included in this formation. For convenience, the communities can be grouped under two headings: those in which the tussock grass *Cortaderia pilosa* is dominant or co-dominant, and those in which dwarf shrubs are prominent. However, it should be re-emphasized that most communities intergrade to show a complex variety of facies and only the more obviously discernible nodes are mentioned here (Plates Ic, d; IIa-c).

a. ***Cortaderia* association.** This association, dominated by *C. pilosa*, can be developed on most non-swampy ground having indifferent drainage. It is widespread on level or undulating country below 100 m. and hence some of the best examples are to be found in the plains of Lafonia, but it is also very common on gentler slopes up to an altitude of *c.* 180–200 m. A coarse fibrous peaty humus is developed under the *Cortaderia* tussocks, which are up to 30–40 cm. high and usually spaced sufficiently far apart to allow a number of associates, among which *Gunnera magellanica*, *Pratia repens*, *Schizeilema ranunculus*, *Deschampsia flexuosa* and *Cerastium arvense* figure prominently.

In wetter parts of the grass heath, usually over saturated peats where free-standing water may occur for short periods, *Carex fuscula* or *Oreobolus obtusangulus* may be co-dominant with the *Cortaderia*. *Rostkovia magellanica* and *Juncus scheuzerioides* are frequently important constituents, indicating that the *Cortaderia–Carex fuscula* and *Cortaderia–Oreobolus* associations may be considered transitions between the grass heath and the relatively restricted areas covered by the fen and bog formation (p. 16). *Gentianella magellanica* is prominent in these associations, as is *Uncinia brevicaulis* in West Falkland.

b. **Dwarf shrub heath associations.** The communities included here are usually found on comparatively dry ground, being best developed on rocky ridges, stony areas or places where the immediate subsoil is of relatively coarse material so that drainage is good. A hard, dry peat underlies well-developed heath.

The *Empetrum rubrum* association is much the most common (Plate IIa, b), with *Pernettya pumila* and *Baccharis magellanica* frequently present and, in some cases, becoming co-dominant or locally dominant. Davies (1939) has pointed out the increased importance of the *Pernettya* following burning of this association. *Blechnum magellanicum*, *B. penna-marina* and *Bolax gummifera* may all be co-dominant with the *Empetrum*, and each of these separate associations shows several local facies. For example, near Hope Harbour and Hoste Inlet, both in the southern part of West Falkland, the *Empetrum rubrum–Blechnum penna-marina* association provides a habitat for the uncommon fern *Gleichenia cryptocarpa*. Among the species most commonly present in such heaths should be mentioned *Lycopodium magellanicum*, *Drapetes muscosus*, *Azorella lycopodioides*, *Sisyrinchium filifolium*, *Oxalis enneaphylla* and *Gaultheria antarctica*. The latter, although of identical habit to *Pernettya pumila*, never assumes comparable importance in the communities.

The two *Blechnum* species already mentioned are often locally dominant to give an association in which the erect stocks of *B. magellanicum* arise from a dense ground-cover of *B. penna-marina* (Plate IIc). Along the north slopes of the Byron Heights in West Falkland, *Blechnum chilense* also enters the association and in the same area such "fern beds" support *Rumohra adiantiformis*, either intermingled with the dominants or locally in pure stands.

Along much of the coastline the *Empetrum rubrum* heath comes to the top of a low coastal slope, where there is usually an appreciable exposure of loose peaty soil, often interspersed with small rocky outcrops. These sites provide a habitat for *Draba funiculosa*, as well as for the conspicuous *Calceolaria fothergillii* and *Viola maculata*. It seems possible that these species were formerly more generally widespread in open parts of the heath and are now restricted to the coastal slopes because of their lesser accessibility to grazing stock. Although *Acaena lucida* and *Nassauvia gaudichaudii* are common on the coastal slopes, neither is restricted to them. The *Acaena* appears frequently in open sites throughout the heath, particularly where there has been erosion by wind, etc., while the *Nassauvia* is prominent in most coastal facies of the *Empetrum rubrum* association and is accompanied locally by *Perezia recurvata*, especially on rocky or gravelly areas.

Marsippospermum grandiflorum is common in the heath and may assume considerable importance, especially on very rocky areas where it sometimes becomes locally dominant. The *Bolax gummifera–Empetrum rubrum* association is also likely to develop in these situations, as is the *Empetrum rubrum–Blechnum magellanicum* association, which is particularly prevalent along the margins of boulder screes, the "stone runs", giving a rather conspicuous border (Plate Ic). *Luzula alopecurus*, *Festuca erecta*, *Blechnum penna-marina* and *Enargea marginata*, although widespread in the heath, become particularly prominent in these communities, which also provide a habitat for *Senecio vaginatus*, while any crevices between the boulders support mats of *Serpyllopsis caespitosa*, *Hymenophyllum falklandicum* and, locally in the north part of West Falkland, *H. tortuosum*.

At higher elevations, especially on damper ground, the heath tends to be represented by an *Empetrum rubrum–Pernettya pumila* association in which *Poa alopecurus* and *Festuca erecta* are important. Various facies of this association grade into the feldmark communities to be described next.

In several parts of the archipelago efforts have been made to improve the grazing potential of the dwarf shrub heath by planting with introduced grasses, notably *Holcus lanatus*. This species has now become fairly widely established and if it increases in frequency to any extent may well cause significant alterations to the composition of several of the associations mentioned.

3. *Feldmark formation*

Above about 600 m. the dwarf shrub heath changes its aspect sufficiently to be considered as a feldmark formation. This is characterized by the considerably greater area of exposed, usually mineral soils, while, in places, cryptogams increase in importance to become a conspicuous element of the vegetation (Plate IIIa). Almost all the phanerogams present are species that occur in the heath at lower elevations but cushion plants tend to predominate. *Azorella selago*, *A. lycopodioides*, *Bolax gummifera*, *Colobanthus subulatus* and *Abrotanella emarginata*, as well as the non-cushion-forming species *Festuca erecta* and *Pernettya pumila*, are all conspicuous. Although found elsewhere, *Viola tridentata* occurs most typically in the wetter open facies of this formation while, of the two rare *Acaena* species, *A. pumila* is entirely, and *A. microcephala* largely, restricted to similar areas. In addition to *Acaena pumila* and *Azorella selago*, only the endemic cushion-forming *Valeriana sedifolia* (Plate IIIc) seems to be restricted to the feldmark formation but, unlike the former species, it is not confined to the highest elevations. Apparently the formation is not solely a response to high altitude, because a comparable community type occurs among rock detritus along exposed cliff tops on the west coast just north of Cape Meredith (Plate IIIb). Here *Valeriana sedifolia* occurs in what is essentially a feldmark community, which also contains the local endemic *Nastanthus falklandicus* (Plate IIId).

4. *Fen and bog formation*

This formation contains a spectrum of intergrading associations, occurring where the water table is just below, at or above the ground surface. Much further work is needed to give a satisfactory detailed classification of the associations comprising this formation, but it may be noted that both bog and fen (or mire) associations can be distinguished, although there are many transitions between them. Thus, bog communities, in which the water is relatively stationary, of low mineral content and probably largely derived from precipitation, are exemplified by the *Astelia* association, while the *Juncus scheuzerioides* association seems more akin to fen or soligenous mire, because of its higher fertility and the lateral seepage of the water. The *Rostkovia* association can probably pertain to either group, depending upon the particular facies.

a. ***Rostkovia* association.** This is normally confined to the wettest depressions, where drainage is impeded, and standing water is often present for long periods. The association can be recognized at a distance by the dark brown colour of the dominant *Rostkovia magellanica*, which may form an almost pure stand. Mosses and liverworts are frequently prominent and in some cases species of *Sphagnum*, which are not common in the Falkland Islands, provide a dense ground cover. The principal associate is *Juncus scheuzerioides*, often with *Pratia repens* and *Montia fontana* in the ground cover. The association is of relatively restricted extent and it is more usual to find some transition between it and the wetter facies of the grass heath.

b. ***Astelia* association.** This is usually found over deep peat and consists of a series of low flat cushions or a dense carpet composed of a few species which are all able to retain water in the dense covering of old leaves and branches surrounding their stems. This makes such communities very waterlogged, and largely explains why the association can occur on sloping surfaces as well as in the depressions. The dominant, *Astelia pumila*, may form almost pure stands, but it is usually accompanied by such species as *Gaimardia australis* and *Abrotanella emarginata* (Plate IId), either of which may be locally dominant, together with *Drosera uniflora*, *Tetroncium magellanicum*, *Oreobolus obtusangulus* and *Caltha appendiculata*. All gradations occur between this association and both the *Rostkovia* association and the wetter facies of the grass heath. Indeed, a *Cortaderia–Astelia–Rostkovia* association, or some variant of it, is probably much more common than either of the two associations described above.

c. ***Juncus scheuzerioides* association.** On damp, relatively level ground at the margins of streams, particularly where these enter the sea, it is common to find an association dominated by *Juncus scheuzerioides*, often with *Carex fuscula*, *Gunnera magellanica* and *Pratia repens* as conspicuous associates. *Anagallis alternifolia*, *Ranunculus trullifolius* and *Colobanthus quitensis* are also commonly encountered in such situations. This association, or some variant of it, is found in dune slacks and similar wet sandy habitats. Davies (1939) has pointed out the grazing value of such communities and they may well have been modified by introduced sheep and cattle. However, they have probably long been subjected to grazing pressures, since large numbers of geese congregate to feed in such areas.

5. *Bush formation*

Only two native species, *Chiliotrichum diffusum* and *Hebe elliptica*, attain sufficient stature to contribute to a bush formation, which is of very restricted extent in the Falkland Islands. In addition, however, the alien *Ulex europaea*, which was introduced prior to 1848 for use as cattle-fencing (Dallimore, 1919), forms more or less pure thickets in many areas (Plate Va).

a. ***Chiliotrichum* association.** This association derives its characteristic grey colour from the leaves of the dominant species, *Chiliotrichum diffusum*, which normally reaches 1 m., occasionally 2 m., high. It is best developed in sheltered situations where the soil is damp but reasonably well-drained, conditions most commonly encountered along stream and river sides, particularly where there is an appreciable water current. The association, therefore, is most typically developed as a fringe along streams and rivers, although extensive thickets are sometimes found away from water courses in river valleys, and good stands of *Chiliotrichum* can also be found on sandy soils near the coast. The species is commonly encountered in the heath formation but it does not seem to thrive on peat and the plants are usually stunted and poor. No species seem to be constantly associated with the *Chiliotrichum*, but the damp sheltered conditions allow luxuriant growth of, for example, *Blechnum penna-marina* and *Gunnera magellanica*, with *Acaena magellanica*, *Apium australe*, *Ranunculus biternatus*, etc. near the water edge.

b. ***Hebe* association.** *Hebe elliptica* is restricted to coastal localities in West Falkland, where it normally occurs as scattered bushes 0·5–1·5 m., rarely 2 m. or more, high (Plate Vb). In such situations it constitutes a relatively minor component of a rather damp facies of the dwarf shrub heath, in which *Pernettya pumila* and *Empetrum rubrum* are prominent, accompanied by e.g. *Senecio littoralis*, *Myrteola nummularia*, *Gunnera magellanica* and *Rubus geoides*. Occasionally, however, a dense stand of *Hebe elliptica* may be found, as on Fox Island, West Falkland (see Skottsberg, 1913, pl. 13), where a *Hebe* association can truly be considered to occur. The associated species are derived from the dwarf shrub heath, as already indicated. It was suggested by Skottsberg (1913) that this area had earlier contained *Poa flabellata* as an associate of the *Hebe*, and that its destruction had allowed the heath species to encroach.

6. *Littoral vegetation*

Extensive sandy areas are found at many points along the coastline and it seems probable, as suggested by Skottsberg (1913), that some of these have resulted from destruction of the *Poa flabellata* association, though no trace can now be seen of this species. Frequently such areas comprise a mosaic of raised peaty areas or hillocks, showing an open facies of the dwarf shrub heath formation, interspersed with areas of moist sand which support the *Juncus scheuzerioides* association already mentioned. However, two further associations may also be prominent, one of them a direct result of man's activity.

a. ***Senecio candicans* association.** This occurs typically on loose sand above high-water mark, sometimes extending several hundred metres inland, as in the areas to the east of the old Albemarle sealing station on West Falkland. *Senecio candicans* often forms a pure stand (Plate IVc) and, where there are important associates, they are species which can survive frequent covering by sand. Thus *Juncus scheuzerioides*, with its long rhizomes, tends to be conspicuous, while *Poa robusta*, which has a comparable habit, is frequently present and may form moderately extensive patches.

b. ***Ammophila–Elymus* association.** *Ammophila arenaria* was introduced about 1923 (Hubbard, 1937) and planted at various localities in an attempt to control mobile dunes. *Elymus arenarius*, which is also an alien, had arrived in the islands at an earlier date and was subsequently used for the same purpose. This seems to have been successful at Cape Pembroke where, within 40 years, the dunes are at least partially stabilized and bear dense stands of *Ammophila arenaria*, sometimes with the *Elymus* associated, and the slacks support a close turf of *Juncus scheuzerioides* (Plate IVb). In addition, at several points around the islands loose sand above high-water mark supports an almost pure *Ammophila* association (Plate IVa) and it is highly likely that some of these stands have become established without direct human interference.

Elsewhere, the littoral zone supports an assemblage of maritime species. These are usually present as isolated plants or clumps, and species such as *Polygonum maritimum* and the rare *Suaeda argentinensis* never occur otherwise. However, on wet sand or in the crevices of rock slabs at, or just above, high-water mark it is usual to find a community containing *Plantago barbata*, *Crassula moschata*, *Colobanthus quitensis* and frequently *Armeria macloviana*. In different localities one or other species may be dominant (Plate IVd), or two or three may be co-dominant, so that a spectrum of associations might be delimited. Similarly, in a few places a *Chenopodium macrospermum* association may be recognized on gravelly or pebbly beaches, where this rather local species can form pure stands, and on shell sands *Ranunculus acaulis* may become locally dominant.

7. *Fresh-water vegetation*

Two associations are most frequently encountered in the fresh waters of the archipelago but there are several variants of each as well as a number of more restricted associations dominated by local species.

a. ***Eleocharis* association.** This association is frequently found in slow-moving streams but it also occurs in ponds where there is no water movement. Typically, there is a dense emergent stand of *Eleocharis melanostachys*, with *Callitriche antarctica* covering the water surface (Plate Vc). Here it is common to find *Montia fontana* and *Lilaeopsis macloviana*, while this community also supports the robust forms of *Caltha sagittata*, which may attain a height of 40 cm. (Plate Vd), and the local *Epilobium cunninghamii*. Locally, as at Hill Cove, the tall *Schoenoplectus riparius* enters the association and may become co-dominant or dominant, while *Potamogeton linguatus* can become important as, for example, at Two Ponds valley near Port Stephens.

b. ***Myriophyllum* association.** Shallow lagoons, particularly with sand or sand-mud substrates, can support an almost pure community of *Myriophyllum elatinoides*. *Lilaeopsis macloviana* is often an important constituent, particularly towards the water margin, and locally in Lafonia, as at the pond near Arrow Harbour House described by Skottsberg (1913), *Plantago maritima* is abundant at the margin, where it may become dominant.

IV. GEOGRAPHICAL DISTRIBUTION OF THE FLORA

A. Relationships with Other Regions

1. *Floristic affinities*

It has long been known that the flora of the Falkland Islands represents an extension of that of southern South America (Hooker, 1847; Skottsberg, 1909*a*, 1913). Thus, of the 163 native species recognized in this account, 144 (89 per cent) are found on the mainland south of lat. 40°S. All except three of the remaining species are endemic to the Falkland Islands and mostly seem related to mainland species. Skottsberg (1910, 1916) recognized three broad vegetation zones in the area south of lat. *c.* 40°S.:

i. *East Patagonia.* The arid areas, generally dominated by grassland and xerophytic shrubs, lying in the rain shadow of the Andes between their eastern flanks and the Atlantic coast.

ii. *Andean Patagonia.* The eastern slopes of the Andes up to the snow line. They support relatively dry, open, deciduous forest dominated by *Nothofagus antarctica* and *N. pumilio*, with open alpine vegetation at higher elevations.

iii. *West Patagonia.* The area between the Andes and the Pacific Ocean, which experiences high precipitation from the prevailing westerly winds. It supports rain forest which, in the northern areas, is part of the varied and species-rich Valdivian Forest but southwards it becomes increasingly impoverished of species so that south of lat. *c.* 43°S. *Nothofagus dombeyi* is the major dominant. South from lat. *c.* 48°S. *N. betuloides* is the principal tree, but Godley (1960) has pointed out that Skottsberg's use of "forest" for this area is incorrect since the "inhospitable substratum (Andean diorite), together with exposure to wind" so restricts tree growth that the term "Magellanic moorland" is much more appropriate.

In Tierra del Fuego a sequence comparable to the above three zones is followed in moving from the north and east to the south and west parts of the area.

The numbers of Falkland Islands species occurring at different latitudes in each of the above zones are shown in Fig. 2. 78 per cent of the total flora is present in Tierra del Fuego, with the species becoming progressively fewer northwards. It is also clear from Fig. 2 that, as Skottsberg (1913) pointed out, the flora of the Falkland Islands has its closest affinities with that of the deciduous forest zone along the Andes, showing less affinity with west Patagonia and sharing with east Patagonia and north-east Fuegia scarcely more species than with the Andes at lat. 35–30°S. Although further botanical studies are needed, particularly in west Patagonia, it seems unlikely that there will be significant alteration to the general pattern described.

As might be expected, the Andes provide a route by which plants can move between the cooler parts of South America and lower latitudes. Thus, 36 Falkland Islands species occur on the cordillera at lat. 40–35°S. (Fig. 2), 16 species at lat. 35–30°S., 12 species at lat. 30–20°S., and eight species reach the region from lat. 20°S. to lat. *c.* 5°N. East of the Andes about eight species occur north of lat. 40°S., principally in the mountains of northern Argentina, while in extra-Andean Chile 20 species reach lat. 40–35°S. (Fig. 2) and eight species occur at lat. 35–30°S., principally in coastal localities.

Sixteen species occur in North America, two only in Mexico, the remainder principally at higher latitudes, while 13 species are found in Europe, all but two being shared with North America, generally within the circum-boreal distribution pattern. The reasons for such "bipolar" disjunct distributions are of considerable interest to students of phytogeography because, even though Northern and Southern Hemisphere populations may differ at the varietal or subspecific level, they raise the problem of whether such cool-temperate species crossed the tropics by long-distance dispersal or by migration via tropical mountains (e.g. Raven, 1963).

It is well known that a number of species having a "circum-Antarctic" distribution occur on various islands surrounding Antarctica to provide some link between the floras of southern South America and the Australian-Neozeelandic regions, although whether such distributions result from long-distance dispersal or migration via the Antarctic continent, or a combination of both, is still a matter for debate. 33 Falkland Islands species (20·3 per cent of the native flora) occur in some part of the sub-Antarctic zone (as defined by Wace (1960)), New Zealand or south-eastern Australia. Most are present in the nearest

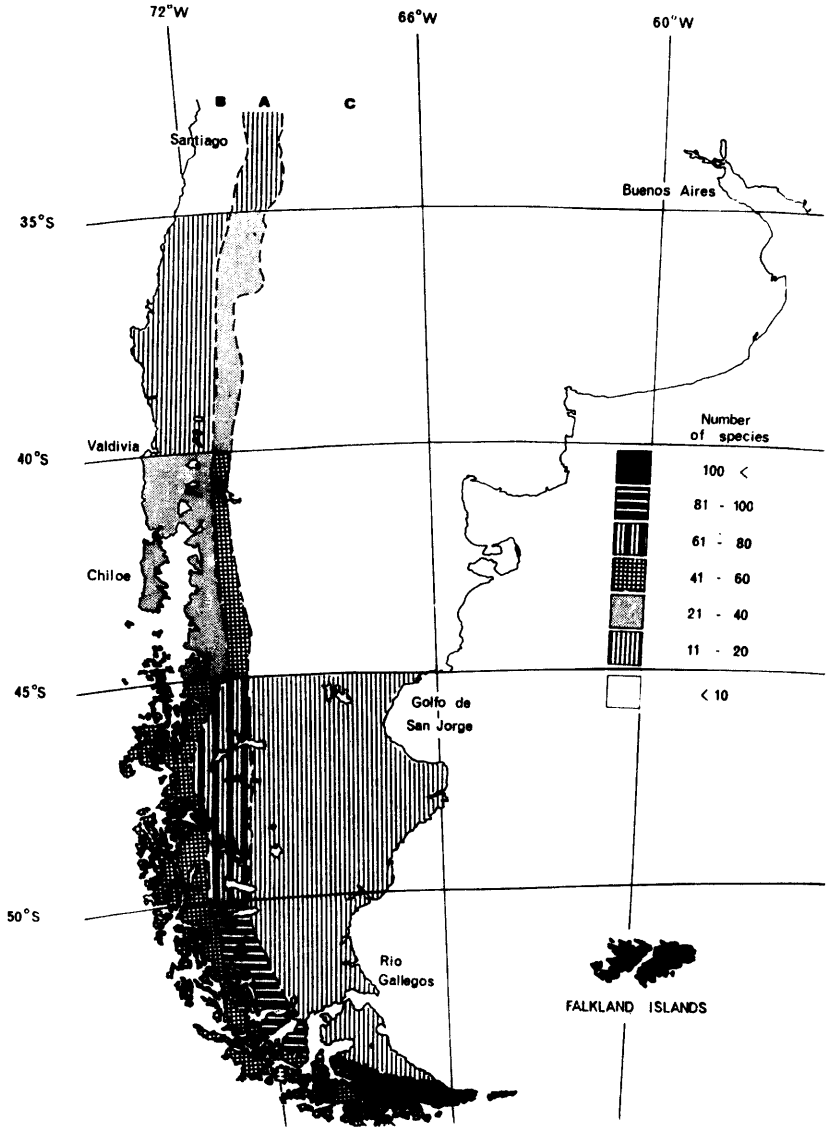


FIGURE 2

Map to show the numbers of Falkland Islands species occurring in different areas of southern South America. A. Cordillera de los Andes. B. Extra-Andean Chile. C. Extra-Andean Argentina. Andean and east Patagonia are south from *c.* lat. 40°S. in A and C respectively. West Patagonia is south from about Chiloe in B.

sub-Antarctic island, South Georgia, while the number of species found in other areas generally decreases with distance from the Falkland Islands, although the available land surface on some islands may also be a factor. The distribution of Falkland Islands species around the circum-Antarctic zone can be summarized in the following manner:

Island	*South Georgia*	*Iles Crozet*	*Iles de Kerguelen*	*Macquarie Island*	*New Zealand (South Island)*
Approximate longitude	37°W.	50°E.	70°E.	159°E.	170°E.
Number of species	20	15	16	12	15

Ten species extend to the North Island of New Zealand, eight species to Tasmania and montane areas of south-east Australia, while three species occur at the highest elevations in New Guinea.

2. *Phytogeographical elements*

The present distribution of plant species is a reflection of their environmental tolerances and ability to migrate, as well as of past climatic and topographical changes. The distribution of each native species outside the Falkland Islands is given after its description in Section V (p. 28), and these data are summarized here by grouping the species into a series of phytogeographical "elements". Skottsberg (1913) provided comparable lists, but new data accumulated since his publication make it worthwhile to present here an up-to-date summary. The information in the lists, which has also been used in the previous discussion of floristic affinities of the flora, is based on data derived from lists of specimens given in the taxonomic revisions cited in the systematic account, from material seen by the author in herbaria and from various regional accounts and lists, where these are considered sufficiently reliable. Thus, for southern South America considerable assistance was given by the papers of Skottsberg (1916, 1924*a*, 1926), Roivainen (1933), Kalela (1940), Looser (1948) and Godley (1964), while most of the remaining relevant areas in the southern temperate zone are covered by Allan (1961), Willis (1962) and the papers summarized by Greene and Greene (1963). Northern Hemisphere distributions were derived from various standard floras and from the maps given by Hultén (1962).

Within the native flora of the Falkland Islands five phytogeographical elements can be distinguished, based upon the distribution of the species:

	Species	(per cent)
South Patagonian and Fuegian element	139	85·3
East Patagonian element	2	1·2
Valdivian element	7	4·3
Sub-Antarctic element	1	0·6
Endemic element	14	8·6
TOTAL	163	100·0

Although, as has already been pointed out, a number of the species occur elsewhere in the southern temperate zone and in the Northern Hemisphere, such occurrences are relatively unimportant compared with the South American distribution when determining their phytogeographical affinities (see also Skottsberg, 1913, p. 66). Several Falkland Islands species are extremely widespread in South America or, indeed, are virtually cosmopolitan; their inclusion in these lists is in general accordance with their southern South American distribution but it may be to some extent arbitrary. The principal occurrences outside the zones considered are indicated in the following lists by the use of symbols, and further details must be sought under the descriptions of individual species in Section V (p. 28): in sub-Antarctic zone (*), in Australian-Neozeelandic area (†), in North America and Eurasia (‡) and in east Patagonia (§).

a. **South Patagonian and Fuegian element.** This group consists of species whose main centre of development in South America is in the area south of lat. 40°S. The species have been subdivided according to their distribution within this area to indicate both their latitudinal range and whether they show any particular affinity with Andean or west Patagonia. Although, to a considerable extent, these sub-divisions show the general vegetation type favoured by the species (p. 19), each type can contain a number of habitats and no attempt has been made to specify the ecological requirements of the species, for details of which reference should be made to the lists of Skottsberg (1913).

i. Restricted to Fuegia in South America:

*Azorella selago**
*Festuca erecta**
Gavilea australis
*Huperzia selago**†‡
Oreomyrrhis hookeri
Puccinellia pusilla
Ranunculus maclovianus
Valeriana sedifolia

Ranunculus maclovianus is included here, although it has a disjunct occurrence in the Andes at *c.* lat. 40°S.

ii. Andean and west Patagonia south from lat. 45°S., most also in Fuegia.

Only south of lat. 45°S.:

Agrostis canina‡
Callitriche antarctica *†

Cortaderia pilosa
Drapetes muscosus
Enargea marginata
Epilobium cunninghamii
Euphrasia antarctica
*Galium antarcticum**
Pratia repens
Rostkovia magellanica†
Viola tridentata

Also north of lat. 45°S. (to the latitude indicated).

Principally on the Andes:

Aster vahlii (36°30′S)
Bolax gummifera (*c.* 41°S.)
Caltha appendiculata (*c.* 36°S.)
Cardamine glacialis (*c.* 30°S.)
Carex magellanica‡ (40°10′S.)
C. microglochin‡ (at 29°S.)
Chiliotrichum diffusum (*c.* 40°S.)
*Colobanthus quitensis**‡ (0°)
*Crassula moschata**† (*c.* 41°S.)
Draba magellanica (*c.* 33°S.)
Empetrum rubrum (36°S.)
Gunnera magellanica (*c.* 1°N.)
Lagenophora nudicaulis (34°40′S.)
Montia fontana *†‡ (*c.* 15°S.)
*Myriophyllum elatinoides**†‡ (*c.* 0°)
Pernettya pumila (36°48′S.)
Plantago barbata§ (28°43′S.)

On and west of the Andes:

Anagallis alternifolia (*c.* 29°S.)
Apium australe† (*c.* 35°S.)
Blechnum magellanicum (*c.* 40°S.)
Carex aemathorryncha (*c.* 32°S.)
*Cystopteris fragilis**†‡ (36°48′S.)
Gnaphalium spicatum (widespread)
Hierochloe redolens† (*c.* 0°)
Hymenophyllum tortuosum (*c.* 40°S.)
Isolepis cernua†‡ (widespread)
Rubus geoides (36°48′S.)
Spergularia media‡ (*c.* 33°S.)

Principally west of the Andes:

*Lycopodium magellanicum** (*c.* 40°S.)
Nanodea muscosa (42°15′S.)
Polygonum maritimum‡ (*c.* 33°S.)
*Ranunculus biternatus** (41°30′S.)
Senecio candicans§ (43°35′S.)

iii. Principally or entirely Andean Patagonia.

Present in Fuegia.

South of lat. 50°S.:

Agropyron magellanicum
Armeria macloviana
Deschampsia parvula
Hieracium antarcticum§
Poa alopecurus
*P. flabellata**
*Ranunculus pseudotrullifolius**
R. sericocephalus

South of lat. 45°S.:

Agoseris coronopifolium
*Agrostis magellanica**
Azorella filamentosa
Botrychium dusenii
Carex caduca
C. decidua
C. fuscula
Codonorchis lessonii
Gentianella magellanica
Luzula alopecurus
Oxalis enneaphylla
Perezia recurvata
Plantago maritima‡§
Stellaria debilis
Scutellaria nummulariifolia§

South of lat. 40°S.:

Acaena microcephala
Carex curta†‡
Deschampsia flexuosa‡§
Hieracium patagonicum§
Hydrocotyle chamaemorus§
Potamogeton linguatus
Primula magellanica
Taraxacum magellanicum†

Also north of lat. 40°S. (to latitude indicated). A few species (indicated by **W**) occur sporadically in west Patagonia or southern Chile.

*Acaena magellanica**§ (24°55′S.)
A. ovalifolia (*c.* 12°S.)
*Alopecurus antarcticus** (*c.* 33°S.)
Azorella caespitosa (*c.* 33°S.; **W**)

A. lycopodiodes (36°30′S.)
Baccharis magellanica (36°S.)
Calceolaria biflora (*c.* 30°S.)
Caltha sagittata (30°43′S.)
Carex macloviana‡ (36°48′S.)
C. vallis-pulchrae (33°S.)
Cerastium arvense‡ (34°40′S.)
Chenopodium macrospermum‡ (*c.* 32°S.)
*Deschampsia antarctica**§ (34°10′S.)
Festuca magellanica§ (36°30′S.; **W**)
Hypochoeris arenaria (39°25′S.)

Absent from Fuegia:

Acaena lucida (*c.* 50°S.)
Calceolaria fothergillii (52°38′S.)
Carex acaulis (40°10′–50°15′S.)
Chloraea gaudichaudii (40°–41°S.; **W**)
*Juncus scheuzerioides**§ (*c.* 33°S.)
*Limosella australis**†‡ (0°; **W**)
Marsippospermum grandiflorum (37°S.)
Polystichum mohrioides[?]*† (36°48′S.)
Ranunculus hydrophilus (*c.* 37°S.; **W**)
R. trullifolius (29°50′S.; **W**)
Saxifraga magellanica (*c.* 5°N.)
Schoenoplectus riparius (*c.* 10°S.)
Sisyrinchium chilense (*c.* 33°S.)
Trisetum spicatum†‡ (36°48′S.)
Viola maculata§ (*c.* 34°S.)

Draba funiculosa§ (50°40′S.)
Eleocharis melanostachys (42°30′–43°30′S.)
Litorella australis (48°50′–40°10′S.)

Immature specimens, which may belong to *Carex acaulis*, have been collected in Fuegia.

iv. Fuegia and principally or entirely west Patagonia (north to latitude shown). A few species (indicated by **A**) occur sporadically on the Andes south of lat. 39°S.:

Abrotanella emarginata (53°40′S.)
Acaena pumila (49°10′S.; also 39°S.)
Asplenium dareoides (36°48′S.)
Astelia pumila (40°S.)
*Blechnum penna-marina**† (40°S.)
*Carex trifida**† (43°35′S.)
*Colobanthus subulatus** (52°25′S.)
Cotula scariosa (41°50′S.)
Drosera uniflora (42°15′S.)
Gaimardia australis (42°15′S.)
Gaultheria antarctica (40°S.; **A**)
Gleichenia cryptocarpa (at *c.* 40°–43°S.)
Hebe elliptica† (45°53′S.)
*Hymenophyllum falklandicum** (46°S.)
Lycopodium confertum (51°10′S.)
Myrteola nummularia (47°S.; **A**)
Nertera depressa† (41°51′S.)
Oreobolus obtusangulus (43°20′S.; **A**)
Poa robusta (52°35′S.)
Schizeilema ranunculus (*c.* 41°30′S.)
Serpyllopsis caespitosa (39°30′S.; **A**)
Tetroncium magellanicum (*c.* 43°S.; **A**)
*Uncinia brevicaulis** (45°30′S.; also 39°S.; **A**)

b. **East Patagonian element.** Occurring on the east slopes of the Andes north of lat. 40°S. but coming south of this only in east Patagonia:

Koeleria bergii
Suaeda argentinensis

The great majority of the other species which enter east Patagonia are centred in Andean Patagonia (group a.iii) and, as might be expected, none occurs west of the Andes.

c. **Valdivian element.** Species principally occurring in Chile north of lat. 40°S., occasionally reaching lat. 49°S. along the Andes or in west Patagonia:

Adiantum chilense
Blechnum chilense
Gavilea macroptera[1]
*Ophioglossum crotalophoroides**‡[2]
Ranunculus acaulis†
Rumohra adiantiformis†
Schizaea fistulosa

Although *Adiantum chilense* has a disjunct occurrence in Andean Patagonia at lat. 52°35′S., its affinities are clearly with this group.

d. **Sub-Antarctic element.** Species occurring only in the sub-Antarctic islands:

Grammitis kerguelensis

Of the other 27 Falkland Islands species that enter the sub-Antarctic zone, 26 belong to the South Patagonian and Fuegian element, many of them demonstrating their tolerance and ability to migrate by being fairly widespread in southern South America.

[1] This species is now known to occur in Fuegia near Ushuaia (personal communication from Dra. M. N. Correa, 1968).
[2] This species has now been collected in Fuegia east of Ushuaia (Moore, unpublished).

e. **Endemic element:**

Arabis macloviana
Calandrinia feltonii
Chevreulia lycopodioides
Erigeron incertus
Gnaphalium affine
Hamadryas argentea
Leuceria suaveolens
Lilaeopsis macloviana
Nassauvia gaudichaudii
N. serpens
Nasthanthus falklandicus
Senecio littoralis
S. vaginatus
Sisyrinchium filifolium

All these species have close relatives in southern South America except *Calandrinia feltonii*, whose affinities are with species occurring north of lat. 35°S.

It is perhaps worth noting in conclusion that only one of the 92 alien species in the Falkland Islands is probably of South American origin. The majority are either native to or widely naturalized in Europe from which, of course, the principal human colonization has arisen.

B. Distribution within the Falkland Islands

It has been pointed out earlier (p. 14) that many of the species have a considerable ecological amplitude in relation to the rather narrow range of habitats available in the archipelago, so that any general analysis of distribution patterns must await detailed mapping of each species (p. 28). However, a few general points can be made here.

Skottsberg (1913) showed that there are differences in the lists of species occurring on East and West Falkland. Recent discoveries have reduced the differences (Moore and Sladen, 1965; Moore, 1967*a*) and further changes will no doubt be necessary, but there are still a number of species known from only one or other of the main islands.

Known only from East Falkland:

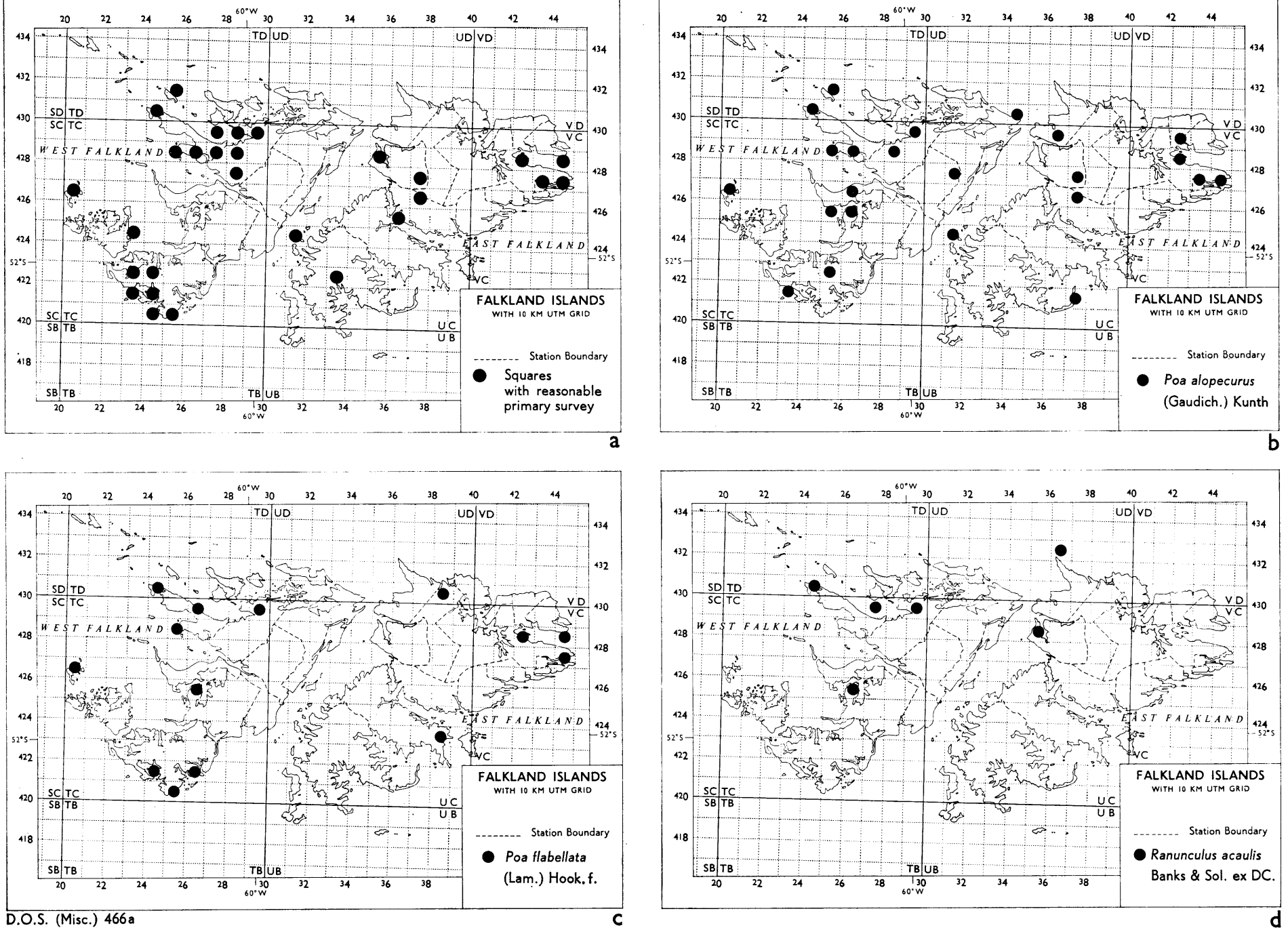
Acaena pumila
Botrychium dusenii
Carex macloviana
C. magellanica
C. vallis-pulchrae
Grammitis kerguelensis
Koeleria bergii
Plantago maritima
Puccinellia pusilla
Saxifraga magellanica
Schizaea fistulosa
Stellaria debilis

Known only from West Falkland:

Acaena ovalifolia
Adiantum chilense
Azorella caespitosa
Blechnum chilense
Calandrinia feltonii
Calceolaria biflora
Gavilea australis
G. macroptera
Hebe elliptica
Hieracium patagonicum
Hymenophyllum tortuosum
Nastanthus falklandicus
Potamogeton linguatus
Rumohra adiantiformis
Scutellaria nummulariifolia
Sisyrinchium chilense
Suaeda argentinensis

It is difficult to relate a broad and, in proportion to the total flora, relatively slight difference of this sort to particular factors and detailed information on the local distributions would facilitate their interpretation. Thus, it is necessary to know whether a species is widespread (Fig. 3b) or restricted to certain habitats (Figs. 3c, d, 4d, 5c, d) in East and West Falkland, or whether it is common on one island and just enters the other (Figs. 4c, 5b).

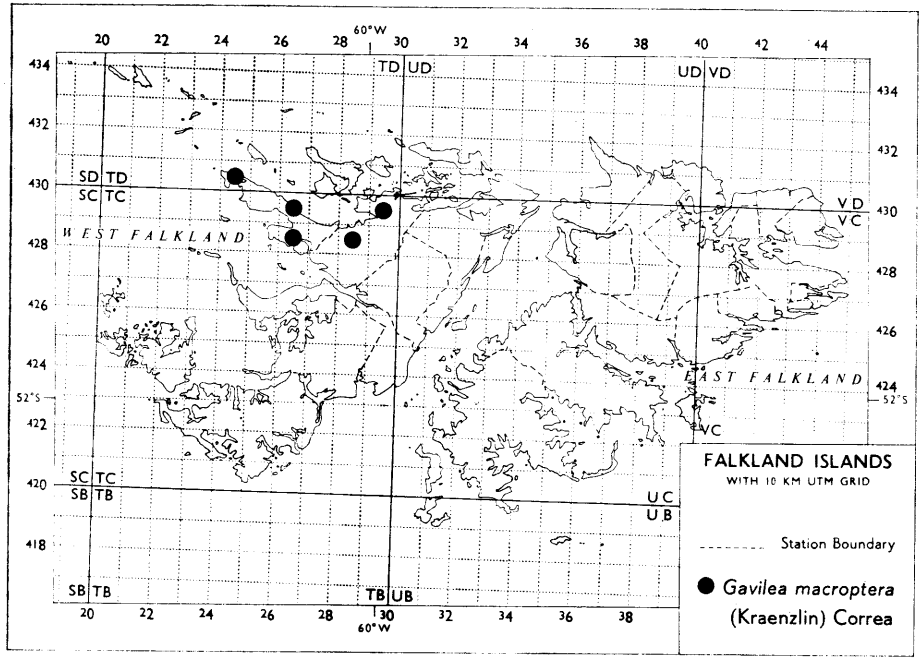
Climatic differences within the Falkland Islands are undoubtedly important. Skottsberg (1913) pointed out that a number of species which are restricted to the north-westernmost parts of West Falkland, e.g. *Blechnum chilense* and *Gavilea macroptera* (Fig. 4a), largely occur in the less severe conditions of southern Chile (Valdivian element), and it should be noted that it was strongly suggested earlier (p. 7) that the climate in the north-west of West Falkland is milder than elsewhere in the archipelago. *Ranunculus acaulis*,

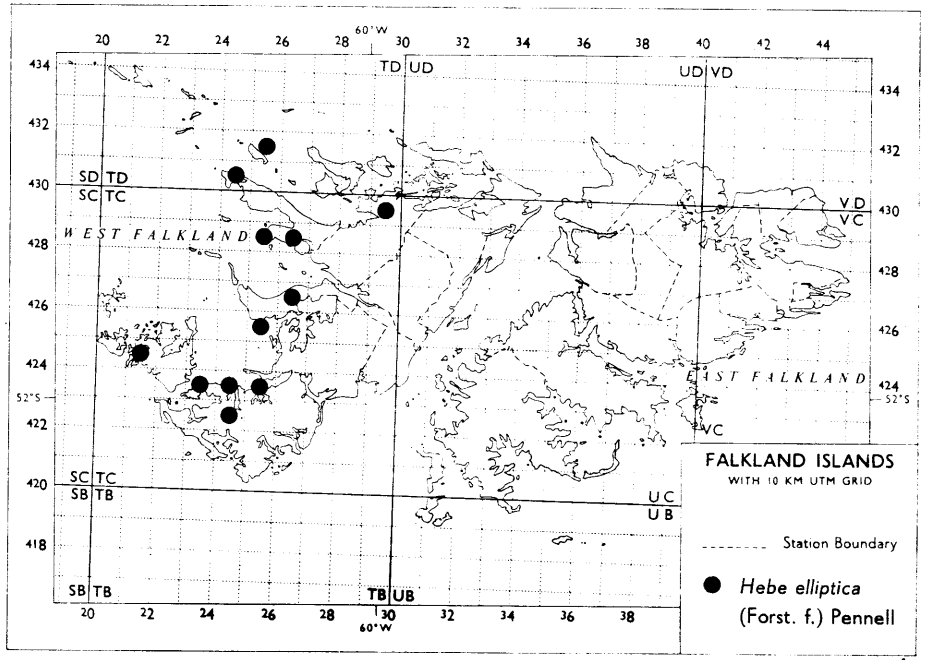


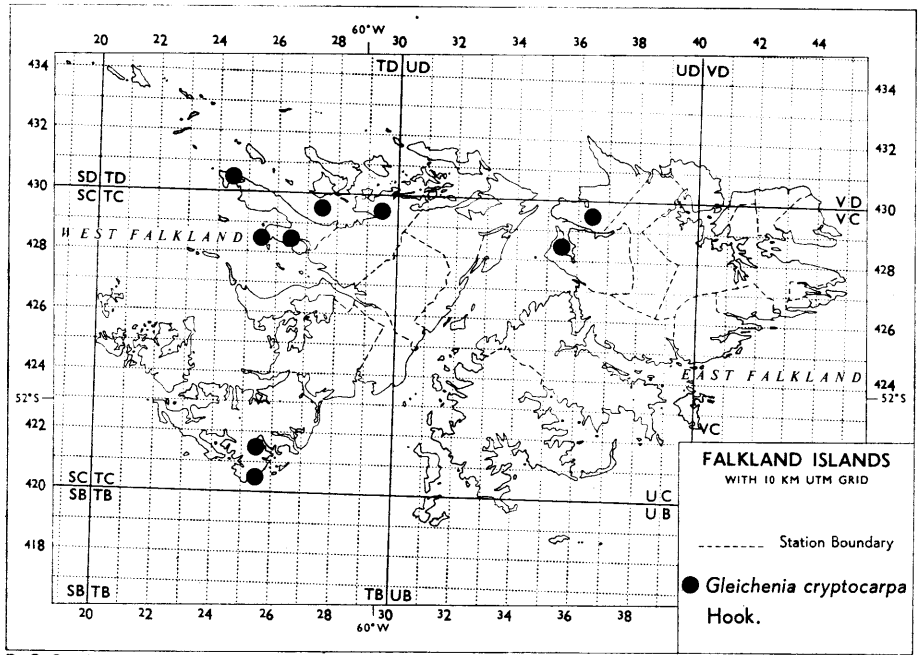
D.O.S. (Misc.) 466a

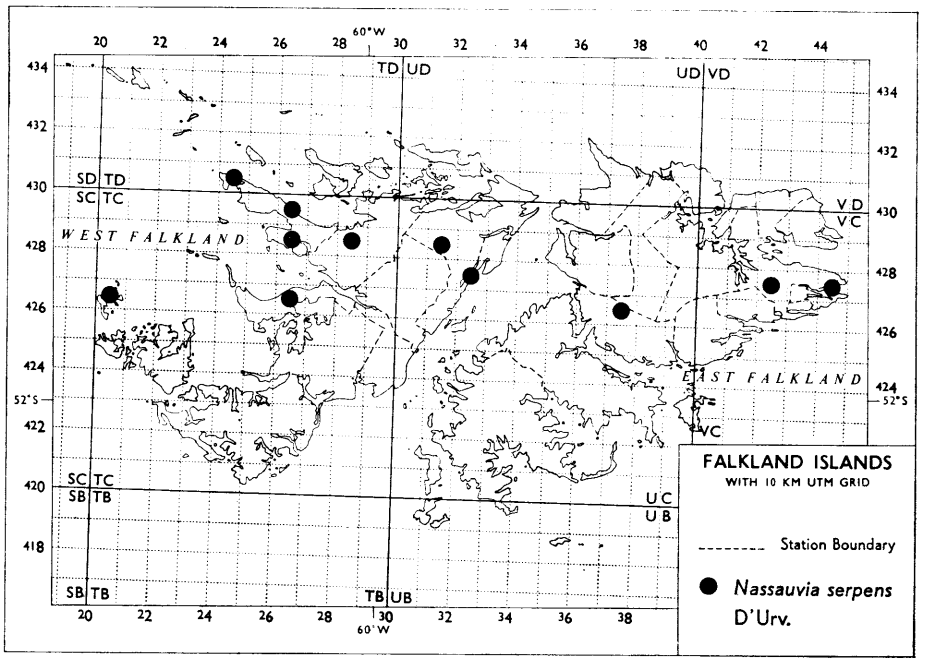
FIGURE 3

Representative species distributions within the Falkland Islands. A widespread species (b) compared with coastal species having a relatively widespread (c) and a restricted (d) distribution.





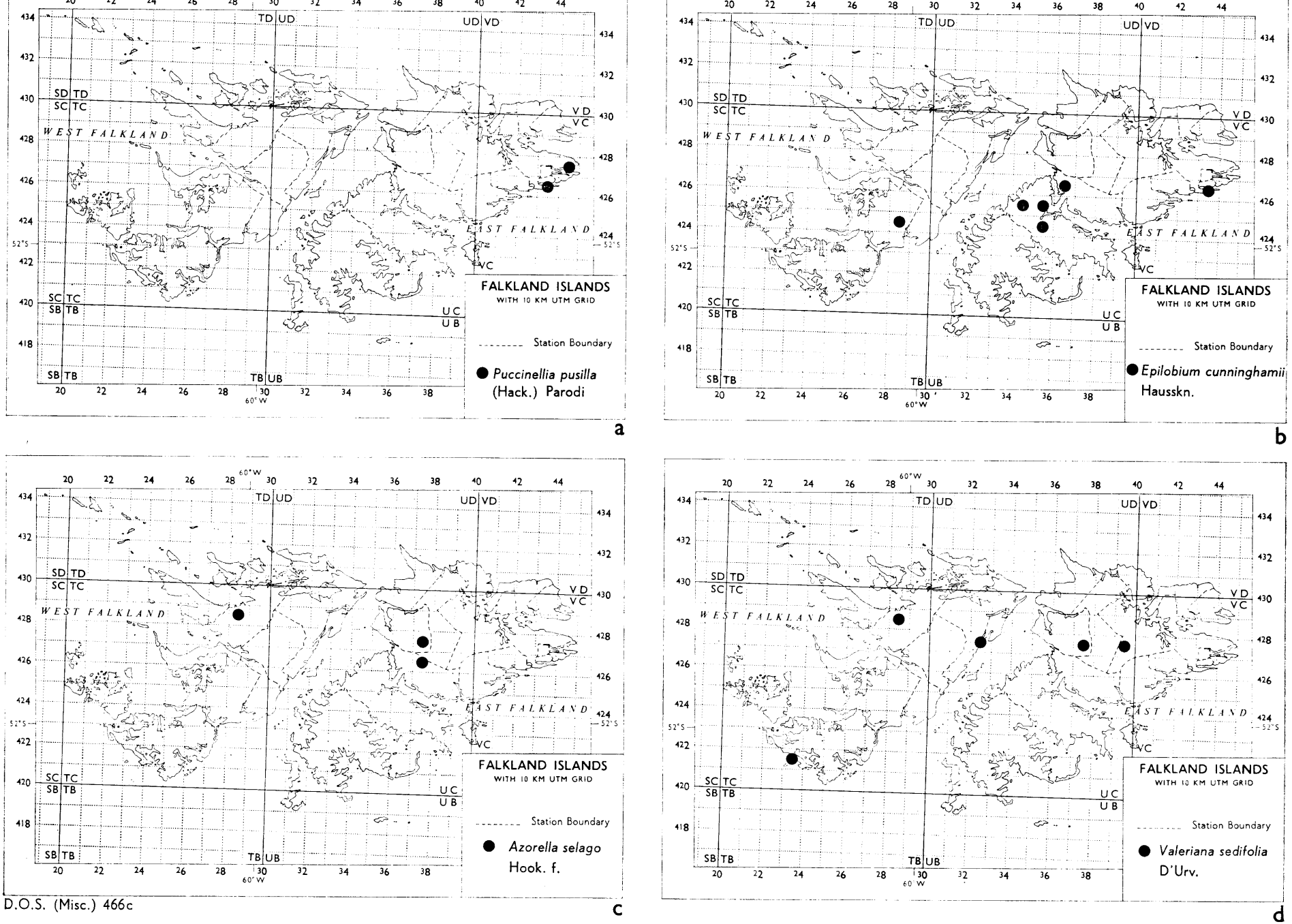




D.O.S. (Misc.) 466b

FIGURE 4

Representative species distributions within the Falkland Islands. Species with their major distribution in the west of the archipelago can be localized



D.O.S. (Misc.) 466c

FIGURE 5

Representative species distributions within the Falkland Islands. Species with their major distribution in the east of the archipelago can be restricted to easternmost East Falkland (a) or they may be more widespread in that island, often just entering West Falkland (b). Alpine species may be confined to the highest summits (c) or they may occur in suitable habitats at lower elevations (d).

another member of the Valdivian element, is also largely confined to West Falkland, though just reaching westernmost East Falkland (Fig. 3d). *Hebe elliptica* and *Gleichenia cryptocarpa* which, although more austral in South America than the above-mentioned, are restricted to the rainy zone west of the Andes, also tend to be western in their Falkland Islands distributions (Fig. 4b, c). Clearly, however, other factors are likely to be involved, since the southern Chilean *Schizaea australis* has only been recorded from East Falkland, while *Gavilea australis*, which has a closely similar Falkland Islands distribution to *G. macroptera*, is a Fuegian species.

The importance of other features of the habitat is indicated by the two members of the east Patagonian element. *Koeleria bergii* is restricted to easternmost East Falkland and *Suaeda argentinensis* to northern West Falkland, and it is likely that edaphic rather than climatic factors govern their distribution in the Islands. Only three species, *Azorella selago* (Fig. 5c), *Acaena microcephala* and *A. pumila*, are apparently confined to the highest elevations in the Falkland Islands. Local climatic conditions undoubtedly have some influence but the species show different distributions in South America and other factors must be important. This is also suggested by *Valeriana sedifolia* which is predominantly alpine in the Falkland Islands but occurs near sea-level in local feldmark-like habitats. Although a number of species have probably had their distributions in the Falkland Islands greatly modified by the advent of man and his grazing animals, only detailed mapping, together with a study of environmental factors, will provide any clear idea of the distribution patterns within the archipelago and the causes underlying them.

V. SYSTEMATIC ACCOUNT OF THE FLORA

A. Introduction

1. *Format*

The order of families and genera follows that given in the second edition of Engler's *Syllabus der Pflanzenfamilien* (Melchior and Werdermann, 1954; Melchior, 1964). The sequence of species within a genus is to some extent arbitrary, but it usually follows recent revisions, where these are available. The delimitation of species is based upon the most recent taxonomic studies available and the sources of decisions taken are given either as literature citations or as notes following the list of material. Descriptions are provided for all native and introduced species. The species' names accepted in this account are given in bold italic type and numbered, the number being prefixed by an asterisk (*) when the species is thought to have been introduced into the archipelago, while synonyms are shown in smaller italics. Only the essential diagnostic characters are given for species that have been reported from the islands but whose presence, for some reason, is regarded as doubtful and their names are not numbered.

Where appropriate, infraspecific categories within a species are mentioned in notes immediately preceding the geographical list of specimens, usually with some indication of their distinguishing characters and often, when data are available, with a comment on their validity. These categories are retained at the level recognized in the taxonomic revisions consulted and there is therefore no uniformity in their circumscription. Thus, although the term "subspecies" generally refers to a major morphologically and geographically definable node in the species' pattern of variation, the use of the term "variety" is less consistent, in some instances being essentially synonymous with the subspecies and in others referring to a much more restricted entity or even to a rather sporadic local variant or "form".

2. *Nomenclature and literature citations*

All names appearing in the botanical literature of the Falkland Islands, or in revisions treating Falkland Islands species, are included in the account. However, basionyms are given for all native species and the original description, author and place of publication, which is given for each name and synonym, has been checked. A complete index to all names and synonyms is provided (Appendix C), while abbreviations of author names are listed and explained in Appendix A. Where possible, the abbreviations of journal titles are as recommended in the *World list of scientific periodicals* (4th edition, 1963–64–65), while suitable abbreviations (Appendix B) have been coined for the titles of books and of those journals which do not appear in the *World list*. Volume numbers are given in bold type. Other references to the names of species

are cited chronologically by giving author and year of publication, and page number. Details of such references, as well as those appearing elsewhere in the text, are given in the list of references (p. 187), which constitutes, therefore, a comprehensive guide to the botanical literature of the Falkland Islands.

Common names used in the Falkland Islands are given, as are the English names of introduced species. In a few cases, where it seems useful, common names have been coined.

3. *Descriptions*

All descriptions apply to the species as they occur in the Falkland Islands, as does the information on flowering period and altitudinal ranges. Since most families have only one or two representatives in the flora, the family description is generally omitted. However, notes on family characters have been provided for some of the well-represented families to save undue repetition in the generic descriptions (e.g. Cruciferae) or to facilitate the explanation of rather specialized structures and terms of restricted use (e.g. Compositae and Gramineae). Characteristics of the genus as represented in the Falkland Islands are not repeated in the specific descriptions, which follow the general sequence: habit, stems, leaves, inflorescence, flowers, fruit and seed. Unqualified measurements refer to length; measurements connected by the multiplication sign refer to length by breadth; numbers enclosed in brackets indicate dimensions beyond the normal range. Explanations of the abbreviations used are incorporated in the glossary (p. 180).

4. *Chromosome numbers*

The diploid ($2n$) chromosome number is given for a species when it is known from material from the Falkland Islands. In a few instances a number is given for material from southern South America and it is then marked by an asterisk (*). All chromosome counts are documented in Moore (1967*b*).

5. *Type specimens*

Wherever possible, collecting details of the type specimen are provided and the herbarium where it is deposited is indicated by the abbreviation recommended by Lanjouw and Stafleu (1964) (see footnote to Table II). Type specimens seen by the author are indicated by an exclamation mark (!).

6. *Geographical distribution and material examined*

Where appropriate, the extra-Falkland Islands distribution for each species is summarized. The distribution of species within the Falkland Islands cannot be documented in detail at present, but a number of sample maps for the better-known species are provided (Figs. 3–5). These maps are based on occurrence in the 10 km. squares of the Universal Transverse Mercator (UTM) grid, which is related to topography on the 1 : 50,000 sheets provided in the end pocket.

It is hoped eventually to produce distribution maps for every species in the flora and a set of such maps is being maintained by the author. To this end, under the heading "specimens", all specimens examined have been grouped, where possible, according to the grid square in which they occur. West Falkland localities precede those from East Falkland and within each of these groups the westernmost squares are given first. The method of designating grid squares is explained on the 1 : 50,000 sheets. The collector's name and number or date of collection is given for each specimen; where only the year is known, it is preceded by "in" to prevent confusion with collecting numbers; months are shown in lower case roman numerals. The locations of specimens are denoted by the appropriate herbarium abbreviations. It has not been possible to examine the extensive collections of Skottsberg, which are deposited in the herbaria at Stockholm and Uppsala. However, the collecting localities are well documented (Skottsberg, 1913) and the data are included by indicating *Skottsberg**. Sight records not supported by an herbarium specimen have a dagger (†) after the reporter's name.

B. Descriptions

Artificial Key to Genera

Since most families are only represented in the Falkland Islands by one or two genera, it has been considered most useful to provide an artificial key to all the genera and to dispense with the more usual

family key. It will quickly become apparent to users of the key that certain short cuts are possible, so that the determination of genera belonging to the better represented groups can be facilitated by proceeding direct to certain dichotomies, e.g. Pteridophyta (dichotomy 2), Angiospermae (dichotomy 18), Compositae (dichotomy 137), Cruciferae (dichotomy 182), Gramineae (dichotomy 73), Juncaceae and Cyperaceae (dichotomy 53), and Umbelliferae (dichotomies 139 and 187). Cushion-forming plants, which are an important feature of the flora, occur in several unrelated genera and they can be identified by entering the key at dichotomy 18, while shrubs and other woody plants commence at dichotomy 32.

1. Plant reproducing by spores; flowers absent. (Ferns and clubmosses) 2
   Plant reproducing by seeds; flowers with stamens or carpels or both. (Flowering plants) . 18
2. Leaves up to 1 cm., sessile, closely imbricate 3
   Leaves more than 1 cm., petiolate, rarely imbricate 4
3. Stems creeping, with short lateral branches; sporangia in distinct terminal spikes ***Lycopodium*** (p. 41)
   Stems erect, dividing regularly into branches of equal length; sporangia not in distinct terminal spikes . . . . . ***Huperzia*** (p. 41)
4. Leaves simple 5
   Leaves variously divided 7
5. Sporangia few, embedded in distinct linear fertile spikes . . . . ***Ophioglossum*** (p. 42)
   Sporangia many, in two rows of sori (on each side of main vein) on underside of leaf . 6
6. Sporangia with conspicuous membranous indusium opening inwards . ***Phyllitis*** (p. 47)
   Sporangia without indusium . . . . . ***Grammitis*** (p. 51)
7. Leaves delicate, membranous, translucent; plants resembling bryophytes . . . 8
   Leaves not as above; plants not resembling bryophytes 9
8. Lobes of lamina entire; long reddish hairs on rhizome, leaf-nerves and apex; indusium obovate with dentate apex . . . . . ***Serpyllopsis*** (p. 45)
   Lobes of lamina dentate; hairs absent; indusium ± globose with entire, though sometimes hairy, apex . . . . . ***Hymenophyllum*** (p. 43)
9. Lamina with 3–6 pairs of semi-orbicular pinnae; sporangia on margins of ultimate segments of branched fertile spike . . . . . ***Botrychium*** (p. 43)
   Not as above 10
10. Leaves dichotomously branched . . . . . ***Gleichenia*** (p. 46)
    Leaves not dichotomously branched 11
11. Fertile leaves with long wiry stalk, having small pinnae congested in appressed pairs at apex to form a "comb" . . . . . ***Schizaea*** (p. 45)
    Fertile leaves not as above 12
12. Leaves simply pinnate or pinnatifid; sporangia borne on distinct fertile fronds ***Blechnum*** (p. 49)
    Leaves 2- to 3-pinnate or -partite, if simply pinnate the sporangia not borne on distinct fertile fronds 13
13. Ultimate segments of lamina cuneiform to subrotund, abruptly contracted into a stalk; sori marginal, covered by reflexed leaf margin . . . . . ***Adiantum*** (p. 46)
    Ultimate segments and sori not as above 14
14. Sori and indusia elliptical to ovate; indusium opening inwards . . ***Asplenium*** (p. 47)
    Sori orbicular; indusium orbicular, reniform or ovate-lanceolate 15
15. Rhizome long-creeping, dorsi-ventral, clothed with peltate denticulate scales ***Rumohra*** (p. 47)
    Rhizome short, erect or ascending, clothed with ovate-lanceolate, entire or lacerate, basifixed scales 16
16. Lamina up to 3 cm. wide, oblong to oblong-lanceolate; pinnae crowded, imbricate; indusium orbicular, peltate . . . . . ***Polystichum*** (p. 48)
    Lamina usually more than 3·5 cm. wide, triangular-ovate; pinnae not imbricate; indusium reniform or ovate-lanceolate 17

17. Indusium ovate-lanceolate, acuminate . . . . . ***Cystopteris*** (p. 48)
    Indusium reniform . . . . . ***Dryopteris*** (p. 49)
18. Plants forming firm compact cushions or carpets 19
    Plants not forming compact cushions or carpets 32
19. Leaf-lamina with 4–7 stiff spines on each side . . . . ***Nassauvia*** (p. 130)
    Leaf-lamina without spines on each side 20
20. Leaves clearly emarginate at apex, with conspicuous scarious margins . ***Abrotanella*** (p. 124)
    Leaves not as above 21
21. Leaves 3- to 5-fid 22
    Leaves entire or shallowly toothed 23
22. Leaves glabrous on upper surface; lobes apiculate . . . . ***Azorella*** (p. 92)
    Leaves with stellate hairs on both surfaces; lobes acute or obtuse, not apiculate . ***Bolax*** (p. 95)
23. Base of leaf-sheaths densely clothed in long white linear scales; perianth-segments 3 mm. or more . . . . . ***Astelia*** (p. 138)
    Linear scales absent; perianth-segments less than 3 mm. 24
24. Leaves densely sericeous or tomentose beneath 25
    Leaves glabrous beneath 26
25. Leaves oblanceolate to elliptical, obtuse, usually 1 mm. or more wide, sericeous-pilose beneath . . . . . ***Drapetes*** (p. 86)
    Leaves linear-lanceolate, acute to obtuse, mucronate, usually 1 mm. or less wide, white-tomentose beneath . . . . . ***Chevreulia*** (p. 119)
26. Leaf-sheaths with long-fimbriate margins; flowers in umbels . . ***Azorella*** (p. 92)
    Leaf-sheaths not long-fimbriate, or absent; flowers not in umbels 27
27. Leaves with scabrid margins; basal sheaths shiny, reddish brown . . ***Oreobolus*** (p. 171)
    Leaves not scabrid; basal sheaths not as above, or absent 28
28. Leaves 2 mm. or more wide 29
    Leaves less than 2 mm. wide 30
29. Leaves glabrous or hairy on upper surface; flowers 1–4 in bracteate racemes; corolla brownish; fruit a circumscissile capsule . . . . . ***Plantago*** (p. 110)
    Leaves glabrous; flowers many in dense capitula subtended by involucral bracts; corolla white; fruit a winged achene . . . . . ***Nastanthus*** (p. 114)
30. Leaves oblong-oblanceolate, obtuse or retuse; flowers yellow; plant dioecious ***Valeriana*** (p. 112)
    Leaves linear to triangular-linear, acute or apiculate; flowers not yellow, hermaphrodite . 31
31. Leaf-sheath about as long as lamina, with obtuse ligule; stamens 2; styles 2; fruit 2-valved; seed 1 . . . . . ***Gaimardia*** (p. 145)
    Leaf-sheath shorter than lamina, without ligule; stamens 4–5; styles 4–5; fruit a 4- to 5-valved capsule; seeds many . . . . . ***Colobanthus*** (p. 58)
32. Plant a shrub, or, if herbaceous, woody at base 33
    Plant entirely herbaceous 50
33. Plant spiny; flowers yellow, zygomorphic . . . . . ***Ulex*** (p. 80)
    Plant not spiny; flowers not yellow or zygomorphic 34
34. Leaves pinnate . . . . . ***Acaena*** (p. 76)
    Leaves simple 35
35. Flowers grouped into dense heads (capitula) surrounded by an involucre . . . 36
    Flowers not in capitula 41
36. Capitula globose or oblong-globose, 2–3 cm. in diameter . . . ***Nassauvia*** (p. 130)
    Capitula not as above 37
37. Capitula with marginal florets ligulate 38
    Capitula without ligulate marginal florets 39

38. Ligules of marginal florets white . . . . . ***Chiliotrichum*** (p. 118)
Ligules of marginal florets yellow . . . . . ***Senecio*** (p. 126)

39. Leaf-margins strongly revolute, bearing curved spines on rounded part; capitula *c.* 20 mm. in diameter, blue, lilac or white . . . . . ***Perezia*** (p. 132)
Leaf-margins not revolute; capitula usually less than 12 mm. in diameter, creamy-white or yellowish 40

40. Leaf-lamina with small marginal spines; flowers hermaphrodite, smelling strongly of nectar . . . . . ***Nassauvia*** (p. 130)
Leaves without spines; plants dioecious; flowers unscented . . . ***Baccharis*** (p. 117)

41. Conspicuous tubular scarious stipules (ochreae) present . . . ***Polygonum*** (p. 52)
Ochreae absent 42

42. Leaf-margins strongly revolute and almost meeting beneath 43
Leaf-margins not strongly revolute 44

43. Leaves opposite; perianth 4-lobed; stamens 8; fruit a capsule . . ***Calluna*** (p. 99)
Leaves alternate; perianth 6-lobed; stamens 3; fruit a juicy drupe . . ***Empetrum*** (p. 100)

44. Leaves 1–2 mm. wide, densely sericeous beneath . . . . ***Drapetes*** (p. 86)
Leaves more than 2 mm. wide or, if less, glabrous or sparsely pubescent . . . 45

45. Leaves opposite 46
Leaves alternate 47

46. Leaves 12 mm. or more; stems erect, up to 60 mm. in diameter . . ***Hebe*** (p. 109)
Leaves up to 10 mm.; stems prostrate, 3–4 mm. in diameter . . ***Myrteola*** (p. 89)

47. Flowers 2 cm. or more in diameter . . . . . ***Enargea*** (p. 139)
Flowers much less than 2 cm. in diameter 48

48. Leaves fleshy, dark green; perianth-segments all similar; stamens 5 . . ***Suaeda*** (p. 61)
Leaves not fleshy and usually not dark green; perianth of distinct calyx and corolla; stamens 10 49

49. Leaves 2–4 mm. wide, entire or serrulate, sessile; calyx dry in fruit . . ***Pernettya*** (p. 98)
Leaves usually more than 4 mm. wide, dentate-serrulate, shortly petiolate; calyx fleshy in fruit . . . . . ***Gaultheria*** (p. 99)

50. Leaf-lamina 1 cm. or more long, at least ten times as long as wide, linear, or absent and represented only by scales at base of stem 51
Not as above 105

51. Flowers solitary 52
Flowers variously grouped 58

52. Perianth-segments 10 mm. or more, if less then yellow . . . ***Sisyrinchium*** (p. 139)
Perianth-segments less than 8 mm., not yellow, or absent 53

53. Perianth-segments in one or two whorls of 3; leaves and stems rigid . . . 54
Perianth-segments in one or two whorls of 4 or 5; leaves and stems herbaceous . . 57

54. Leaves densely imbricate, scabrid on margins; fruit a nut . . . ***Oreobolus*** (p. 171)
Leaves not densely imbricate, smooth; fruit a capsule 55

55. Leaves with obvious internal transverse septa; fruit less than 5 mm. . ***Juncus*** (p. 140)
Leaves without septa; fruit more than 6 mm. 56

56. Leaves one per stem; lamina terete; bracts shorter than perianth; fruit 3–4 times as long as wide . . . . . ***Marsippospermum*** (p. 143)
Leaves more than one per stem; lamina channelled; upper bract much exceeding perianth; fruit 1–1·5 times as long as wide . . . . . ***Rostkovia*** (p. 142)

57. Style 1; fruit a circumscissile capsule . . . . . ***Plantago*** (p. 110)
Styles 4–5; fruit a capsule opening by longitudinal valves 127

58. Perianth-segments 10 mm. or more, if less then yellow . . . ***Sisyrinchium*** (p. 139)
Perianth-segments much less than 10 mm., or absent 59

59. Leaves hollow and cylindrical (fistulose); flowers in umbels . . ***Lilaeopsis*** (p. 97)
Leaves and flowers not as above 60

60. Flowers in terminal hemispherical head subtended by involucre; bracts prolonged in tubular sheath below head . . . . . ***Armeria*** (p. 102)
Not as above 61

61. Inflorescence apparently lateral, the stem being continued by a stem-like bract . . 62
Inflorescence terminal; subtending bracts, if present, not stem-like 64

62. Stem 15 cm. or less; leaves filiform, channelled; inflorescence 2- to 3-flowered ***Isolepis*** (p. 169)
Stem 30 cm. or more; leaves absent or sheaths with rudimentary lamina only; inflorescence many-flowered 63

63. Stems terete; stigmas 3; fruit an ovoid, many-seeded capsule . . ***Juncus*** (p. 140)
Stems triquetrous; stigmas 2; fruit a compressed nut . . ***Schoenoplectus*** (p. 169)

64. Leaves all basal 65
Leaves not all basal 66

65. Stolons present; flowers unisexual, male solitary, female few; fruit indehiscent ***Littorella*** (p. 112)
Stolons absent; flowers hermaphrodite; fruit a circumscissile capsule . ***Plantago*** (p. 110)

66. Sepals 4; corolla 4-lobed; stamens 4; style and stigma 1; fruit a circumscissile capsule . . . . . ***Plantago*** (p. 110)
Sepals, corolla and stamens not as above; style and/or stigmas 2–4; fruit not a circumscissile capsule 67

67. Leaf-sheaths without lamina . . . . . ***Eleocharis*** (p. 170)
Leaf-lamina present 68

68. Leaf-lamina with long marginal hairs; fruit a 3-seeded capsule . . ***Luzula*** (p. 143)
Leaf-lamina without long marginal hairs; fruit not a capsule or, if so, many-seeded . 69

69. Inflorescence with prominent hooked bristle projecting from each floret . ***Uncinia*** (p. 171)
Prominent hooked bristles not present 70

70. Flowers deflexed; stigmas 4; fruit separating distally into four curved horns ***Tetroncium*** (p. 137)
Flowers not deflexed or, if so, stigmas 2 and fruit without four horns . . . 71

71. Perianth-segments 6, in two whorls, greenish or brownish; fruit a many-seeded capsule . . . . . ***Juncus*** (p. 140)
Perianth-segments reduced to bristles, or absent; fruit a nut 72

72. Stem usually triquetrous, if terete the fruits long-ovoid and often deflexed; ligule present and not projecting; flowers unisexual, male and female in separate spikes or separate parts of same spike . . . . . ***Carex*** (p. 172)
Stem terete; ligule absent, or present and projecting, sometimes represented by a ring of hairs; flowers hermaphrodite, if unisexual then on different plants or on same spike and not distinctly zoned as above 73

73. Ligule a ring of hairs; florets with long silky hairs projecting beyond glumes ***Cortaderia*** (p. 166)
Ligule membranous; florets without long, silky hairs, or hairs, if present, not projecting beyond glumes 74

74. Ligule 10 mm. or more . . . . . ***Ammophila*** (p. 165)
Ligule less than 10 mm. 75

75. Awns absent from glumes and lemmas 76
Awns present on either glumes or lemmas, or both 83

76. Spikelets 20 mm. or more . . . . . ***Elymus*** (p. 158)
Spikelets less than 15 mm. 77

77. Spikelets of one floret . . . . . ***Agrostis*** (p. 161)
Spikelets of two or more florets 78

78. Inflorescence a simple spike, flattened and distichous; spikelets sessile or subsessile, inserted singly on axis 79
Inflorescence a panicle, or spikelets clustered; spikelets pedicellate 80

79. Plant rhizomatous; leaf-sheaths with auricles; spikelets broadside on to axis; all spikelets with two glumes . . . . . ***Agropyron*** (p. 156)
Plant not rhizomatous; leaf-sheaths without auricles; spikelets edgeways on to axis; lower spikelets with one glume . . . . . ***Lolium*** (p. 154)

80. Glumes about equalling spikelet; upper flower female or hermaphrodite, the lower two male; lemmas long-ciliate . . . . . ***Hierochloë*** (p. 166)
Glumes shorter than spikelet; flowers hermaphrodite or plants dioecious; lemma not long-ciliate 81

81. Leaf-sheaths with narrow, spreading auricles . . . . . ***Festuca*** (p. 151)
Leaf-sheaths without auricles 82

82. Spikelets compressed; lemma keeled; leaves flat when fresh or very rigid and pungent ***Poa*** (p. 145)
Spikelets ± terete; lemma rounded on back; leaves usually involute . ***Puccinellia*** (p. 154)

83. Spikelets of one fertile floret, sometimes vestiges of others 84
Spikelets of two or more florets 89

84. Spikelets in alternate distichous groups of 3 at each node, the central spikelet of each group hermaphrodite, the laterals sterile and reduced to 1–3 spreading awns . ***Hordeum*** (p. 157)
Spikelets solitary or not distichous 85

85. Spikelets ± spread out along the easily apparent branches of the lax or contracted compound panicle 86
Spikelets clustered on short branches to form dense cylindrical or ovoid spike-like inflorescence 87

86. Spikelets somewhat compressed; rhachilla silky, continued beyond floret ***Deschampsia*** (p. 163)
Spikelets terete; rhachilla neither silky nor continued beyond floret. . ***Agrostis*** (p. 161)

87. Glumes very unequal, the lower much shorter than spikelet; stamens 2; plant smelling of new-mown hay (coumarin) when crushed . . . . . ***Anthoxanthum*** (p. 168)
Glumes ± equal, about as long as or longer than spikelet; stamens 3; plant not smelling of coumarin 88

88. Glumes with short terminal awn; lemma rounded, awnless; palea as long as lemma; inflorescence usually 4 cm. or more, usually five or more times as long as wide . ***Phleum*** (p. 167)
Glumes awnless; lemma keeled, with short dorsal awn; palea absent; inflorescence less than 3 cm., usually less than three times as long as wide . . . ***Alopecurus*** (p. 168)

89. Inflorescence a simple spike with four sessile or subsessile spikelets inserted singly or in opposite pairs on axis 90
Inflorescence a panicle, or the spikelets clustered 91

90. Rhizomatous perennial; leaf-sheaths with auricles; stamens 3; spike usually 7 cm. or more; glumes subequal . . . . . ***Agropyron*** (p. 156)
Slender annual; auricles absent; stamens usually 1; spike usually 6 cm. or less; glumes unequal . . . . . ***Vulpia*** (p. 150)

91. Upper floret in spikelet female or hermaphrodite, two lower male; lemma long-ciliate; leaves 4–7 mm. wide, flat; plant rhizomatous . . . . . ***Hierochloë*** (p. 166)
Florets not as above; lemma not long-ciliate; plant not rhizomatous or, if so, leaves less than 2 mm. wide and setaceous or convolute 92

92. Lemma with usually geniculate awn dorsally affixed one-third or more of distance from apex . 93
Lemma with straight terminal or subterminal awn, rarely recurved when dry . . 96

93. Spikelet (excluding awn) more than 15 mm. . . . . ***Avena*** (p. 159)
Spikelet (excluding awn) less than 10 mm. 94

94. Leaves sparsely to densely appressed-pubescent on upper surface, usually sparsely long-ciliate; panicle yellowish when mature . . . . . ***Trisetum*** (p. 160)
Leaves glabrous, sometimes scabrid; panicle silvery, purplish, green or brownish . . . 95

95. Perennial; spikelets 4 mm. or more; lemma truncate and dentate at apex . ***Deschampsia*** (p. 163)
Annual; spikelets less than 4 mm.; lemma finely bifid at apex . . . ***Aira*** (p. 164)

96. Spikelets crowded in dense 1-sided masses towards the ends of the panicle-branches; coarse tufted plant with strongly compressed vegetative shoots . . . . ***Dactylis*** (p. 153)
Not as above 97

97. Awn 5 mm. or more 98
Awn less than 4 mm. 99

98. Leaves rather soft, pubescent; inflorescence a ± spreading panicle with the branches easily seen . . . . . ***Bromus*** (p. 155)
Leaves rather stiff, puberulent on upper surface, strigose on margins; inflorescence spike-like with spikelets crowded . . . . . ***Vulpia*** (p. 150)

99. Spikelets 16 mm. or more . . . . . ***Ceratochloa*** (p. 156)
Spikelets less than 12 mm. 100

100. Spikelets dimorphic, upper one on each branch fertile, the lower ones sterile and almost exceeding the upper with rigid distichous lemmas . . . . ***Cynosurus*** (p. 152)
Spikelets not dimorphic 101

101. Leaves 3 mm. or more wide 102
Leaves up to 2·5 mm. wide 103

102. Leaves flat, appressed-pubescent; leaf-sheaths pubescent, the upper inflated; spikelets usually less than 5 mm. . . . . ***Holcus*** (p. 158)
Leaves flat and scabrid or strongly involute and very rigid and pungent; leaf-sheaths glabrous, not inflated; spikelets more than 5 mm. . . . . ***Poa*** (p. 145)

103. Slender annual; upper glume 5- to 7-nerved; lemma 7- to 9-nerved . . ***Bromus*** (p. 155)
Tufted perennial; upper glume 1- to 3-nerved; lemma 5- to 7-nerved . . . 104

104. Leaf-sheaths with auricles; spikelets 3- to 9-flowered; rhachilla not produced beyond upper floret; awn terminal; anthers 1 mm. or more . . . . . ***Festuca*** (p. 151)
Auricles absent; spikelets 2- to 3-flowered; rhachilla produced beyond upper floret, silky; awn subterminal; anthers less than 1 mm. . . . . ***Koeleria*** (p. 159)

105. Stem with one group of (2–)3(–4) broadly ovate leaves at or above middle; flower solitary, 1·5–4·0 cm. in diameter, white with purple near centre. . . . ***Codonorchis*** (p. 179)
Not as above 106

106. Leaves opposite or whorled 107
Leaves all basal or alternate 137

107. Leaves whorled 108
Leaves opposite 110

108. Whorls closely imbricate; leaves rigid; flowers 6–15 mm. in diameter . ***Astelia*** (p. 138)
Whorls clearly spaced; leaves not rigid; flowers less than 4 mm. in diameter . . 109

109. Aquatic plant with 3–4 leaves per whorl; submerged leaves pinnatisect, the upper simple; petals free; stem terete . . . . . ***Myriophyllum*** (p. 90)
Terrestrial plant with 4–7 leaves per whorl; leaves all similar; petals connate; stem square in cross-section . . . . . ***Galium*** (p. 103)

110. Leaves 3-sect . . . . . ***Euphrasia*** (p. 110)
Leaves not 3-sect 111

111. Leaves with stinging hairs . . . . . ***Urtica*** (p. 51)
Leaves without stinging hairs 112

112. Leaf-margins entire 119
Leaf-margins not entire 113

113. Stem square in cross-section 114
Stem not square in cross-section 115

114. Corolla 2-lipped, the upper forming a compressed hood . . . ***Lamium*** (p. 106)
Corolla with four subequal lobes, not hooded . . . . . ***Mentha*** (p. 107)

115. Small annual herb with apparently dichotomous branching . . ***Valerianella*** (p. 113)
Plant neither annual nor with dichotomous branching 116

116. Flowers in long leafy raceme; fruit a long narrow capsule . . . ***Epilobium*** (p. 89)
Flowers and fruit not as above 117

117. Flowers 3–4 mm. in diameter, unisexual, green, the male with 8–15 stamens ***Mercurialis*** (p. 85)
Flowers 4 mm. or more in diameter, hermaphrodite, white, yellow or blue; stamens 2 . 118

118. Flowers 10 mm. or more in diameter, yellow often with reddish blotches or spots; lower lip of corolla conspicuous . . . . . ***Calceolaria*** (p. 108)
Flowers 4–7 mm. in diameter, white or bluish; lower lip of corolla not conspicuous . . . . . ***Veronica*** (p. 109)

119. Flowers zygomorphic . . . . . ***Scutellaria*** (p. 105)
Flowers actinomorphic 120

120. Sepals and petals absent; stamen 1; plant monoecious . . . ***Callitriche*** (p. 105)
Sepals and/or petals present; stamens 3 or more; flowers hermaphrodite or plant dioecious . 121

121. Sepals united or represented by an annular ring; petals united in 4- to 6-lobed corolla, or absent 122
Sepals and petals free or connate at base only 126

122. Flowers in terminal cymes; stamens 3 . . . . . ***Valerianella*** (p. 113)
Flowers not in terminal cymes; stamens 4–6 123

123. Leaves densely sericeous beneath . . . . . ***Drapetes*** (p. 86)
Leaves glabrous 124

124. Plant erect; corolla pale lilac; fruit a long loculicidal capsule . . ***Gentianella*** (p. 102)
Plant creeping, rooting at nodes; corolla green, pink or white; fruit a berry or a circumscissile capsule 125

125. Corolla greenish, 4-lobed; stamens 4; fruit a red berry . . . ***Nertera*** (p. 104)
Corolla pink or white, 5- to 6-lobed; stamens 5–6; fruit a circumscissile capsule ***Anagallis*** (p. 101)

126. Sepals 2; seeds 2–3, *c.* 1 mm. in diameter . . . . . ***Montia*** (p. 54)
Sepals 4–5; seeds many, much less than 1 mm. in diameter 127

127. Petals absent 128
Petals present 130

128. Leaves linear-lanceolate to ovate; styles 3 . . . . . ***Stellaria*** (p. 55)
Leaves linear, often rigid; styles 4–5 129

129. Stamens opposite the sepals; sepals widely spreading in ripe fruit . . ***Sagina*** (p. 57)
Stamens alternating with sepals; sepals not widely spreading . . ***Colobanthus*** (p. 58)

130. Petals ± deeply bifid 131
Petals entire or emarginate 133

131. Leaves 40 mm. or more; petals usually pink . . . . . ***Silene*** (p. 60)
Leaves less than 40 mm.; petals white 132

132. Styles 5 . . . . . ***Cerastium*** (p. 56)
Styles 3 . . . . . ***Stellaria*** (p. 55)

133. Flowers 3–4 cm. in diameter; petals pale reddish purple . . . ***Agrostemma*** (p. 60)
Flowers much smaller; petals white or pinkish 134

134. Style 1 or 3 135
Styles 4–5 136

135. Style 1; sepals 4; leaves 4–6(–8) mm.; flowers solitary in leaf-axils . . ***Crassula*** (p. 74)
Styles 3; sepals 5; leaves 10–30 mm.; flowers in lax dichasium . . ***Spergularia*** (p. 59)

136. Stems glabrous; leaves glabrous or ciliate; flower solitary; stamens 4 . . ***Sagina*** (p. 57)
Stems and leaves viscid with glandular hairs; flowers in lax terminal dichasia; stamens 10 . . . . . ***Spergula*** (p. 59)

137. Leaves all basal 138
Leaves alternate 154

138. Leaves pinnate or variously deeply lobed 139
Leaves simple, not pinnate or deeply lobed 144

139. Leaves pinnate; flowers in umbels . . . . . ***Oreomyrrhis*** (p. 96)
Leaves not pinnate; flowers not in umbels 140

140. Plant dioecious; stamens numerous; flowers 1–3 in terminal inflorescence . ***Hamadryas*** (p. 67)
Plant not dioecious; stamens 5; flowers many, aggregated into dense heads (capitula) surrounded by an involucre 141

141. Achenes without beak . . . . . ***Leontodon*** (p. 133)
Achenes with ± prominent beak 142

142. Pappus of one series of plumose hairs, sometimes also with outer series of simple hairs . . . . . ***Hypochoeris*** (p. 132)
Pappus of several series of simple hairs 143

143. Achenes with prominent ribs without tubercles . . . . . ***Agoseris*** (p. 136)
Achenes faintly ribbed; ribs with spiny tubercles . . . . . ***Taraxacum*** (p. 136)

144. Leaves conspicuously spathulate, covered with long, sticky, glandular hairs . ***Drosera*** (p. 68)
Leaves not conspicuously spathulate, without sticky hairs 145

145. Plant dioecious; leaves ± orbicular; fruit a scarlet drupe . . . ***Gunnera*** (p. 90)
Plant not dioecious; leaves and fruit not as above 146

146. Flowers 1–5 with conspicuous pedicels; corolla white, yellow or pale lilac; fruit a septicidal capsule 147
Flowers sessile or almost so and grouped into dense heads, if solitary the corolla scarious and brownish and fruit a circumscissile capsule, or indehiscent 148

147. Corolla 2·5–3·5 mm. in diameter; leaves *c.* 0·3 mm. wide; peduncle less than 2 cm. . . . . ***Limosella*** (p. 107)
Corolla 10 mm. or more in diameter; leaves 5–16 mm. wide; peduncle more than 5 cm. . . . . ***Calceolaria*** (p. 108)

148. Corolla small and brownish 149
Corolla prominent and brightly coloured, yellow, pinkish or white 150

149. Terrestrial; stolons absent; flowers hermaphrodite; fruit a circumscissile capsule ***Plantago*** (p. 110)
Aquatic; stolons present; flowers unisexual, male solitary, female few; fruit indehiscent . . . . . ***Littorella*** (p. 112)

150. Involucral bracts not present at base of head of flowers . . . ***Primula*** (p. 101)
Head of flowers (capitulum) subtended by involucral bracts 151

151. All florets ligulate 152
Only outer florets ligulate . . . . . ***Bellis*** (p. 116)

152. Achene with ± prominent beak; receptacular bracts present . . ***Hypochoeris*** (p. 132)
Achenes without beak; receptacular bracts absent 153

153. Pappus of 1–2 series of pale brown, brittle hairs, all simple . . ***Hieracium*** (p. 134)
Pappus of two series of whitish hairs, the inner plumose, the outer simple . ***Leontodon*** (p. 133)

154. Flowers borne in compact head or heads (capitula), each head subtended by one or several series of involucral bracts 155
Flowers not borne in capitula or, if so, these not subtended by involucral bracts . . 175

155. Leaves 12 mm. or more, densely imbricate, oblong to oblanceolate or subspathulate; calyx green, adnate to ovary; stigma capitate . . . . . ***Nastanthus*** (p. 114)
Leaves various but if densely imbricate 8 mm. or less and not as above; calyx represented by a membranous ring, or one or more series of pappus-hairs, or absent; stigma 2-lobed . 156

156. Plant with milky latex; all florets ligulate . . . . . ***Sonchus*** (p. 134)
Plant without milky latex; at least central florets tubular or bilabiate . . . 157

157. Leaf-lamina with marginal spines 158
Leaf-lamina without marginal spines 160

158. Leaves 4–8 mm.; florets 4·5–6·0 mm., cream-coloured . . . ***Nassauvia*** (p. 130)
Leaves usually more than 10 mm.; florets 9 mm. or more, blue, lilac or white . . 159

159. Leaves ± linear, rigid, with revolute margins, glabrous; florets bilabiate . ***Perezia*** (p. 132)
Leaves oblong-lanceolate, ± pinnatifid, not conspicuously rigid, margins not revolute, cottony beneath; florets tubular . . . . . ***Cirsium*** (p. 128)

160. Capitula with outer florets ligulate and obviously differing from inner florets . . 161
Capitula with outer florets tubular or filiform, not obviously differing from inner florets . 168

161. Pappus-hairs present 162
Pappus-hairs absent 165

162. Ligules of marginal florets yellow . . . . . ***Senecio*** (p. 126)
Ligules of marginal florets purple, pinkish or white 163

163. Basal leaves deeply pinnatifid and usually densely lanate beneath; base of stock with stiff, brown ciliate scales . . . . . ***Leuceria*** (p. 131)
Basal leaves entire or shallowly crenate, glabrous or hairy beneath; scales on stock absent . 164

164. Leaves entire, densely hairy, at least beneath; capitula usually less than 15 mm. in diameter; pappus shorter than achene . . . . . ***Erigeron*** (p. 117)
Leaves shallowly crenate, glabrous or sparsely pubescent on upper side; capitula usually more than 15 mm. in diameter; pappus rather longer than achene . . . ***Aster*** (p. 116)

165. Capitula grouped in dense terminal corymbs . . . . . ***Achillea*** (p. 123)
Capitula solitary and terminal 166

166. Capitula less than 10 mm. in diameter . . . . . ***Lagenophora*** (p. 115)
Capitula more than 10 mm. in diameter 167

167. Leaves 1- to 3-pinnate . . . . . ***Anthemis*** (p. 123)
Leaves simple or pinnatifid . . . . . ***Chrysanthemum*** (p. 125)

168. Capitula less than 6 mm. in diameter 169
Capitula more than 6 mm. in diameter 172

169. Leaves pinnatifid . . . . . ***Senecio*** (p. 126)
Leaves simple 170

170. Leaves not more than *c.* 1 mm. wide; capitula solitary 171
Leaves more than 1 mm. wide; capitula in spikes or clusters . . ***Gnaphalium*** (p. 119)

171. Leaves oblong, clearly emarginate at apex, with prominent scarious margins, glabrous . . . . . ***Abrotanella*** (p. 124)
Leaves linear-lanceolate, acute or subobtuse and mucronate, without scarious margins, white-tomentose beneath . . . . . ***Chevreulia*** (p. 119)

172. Florets bluish to purplish 173
Florets yellow 174

173. Involucral bracts with long, deeply toothed, scarious terminal appendages; pappus shorter than achene . . . . . ***Centaurea*** (p. 129)
Involucral bracts without appendages; pappus longer than achene . . ***Silybum*** (p. 129)

174. Leaves simple; capitula 15 mm. or more in diameter; erect plant of maritime sands ***Senecio*** (p. 126)
Leaves deeply pinnatifid; capitula 10 mm. or less in diameter; plant creeping . ***Cotula*** (p. 124)

175. Leaves ovoid-trigonous, obtuse, sessile, with hot acid taste; fruit a group of follicles ***Sedum*** (p. 75)
Not as above 176

176. Stamens more than 10; fruit a group of drupelets, achenes or follicles . . . 177
Stamens 10 or fewer; fruit not as above 179

177. Flowers white; fruit a group of red drupelets; brown stipules present . . ***Rubus*** (p. 76)
Flowers yellow, rarely whitish; fruit a group of green to brownish achenes or follicles; stipules absent 178

178. Leaf-lamina with basal appendages folded over and often fused with its upper surface; fruit a group of follicles . . . . . ***Caltha*** (p. 62)
Leaf-lamina without appendages; fruit a group of achenes . . . ***Ranunculus*** (p. 63)

179. Flowers in terminal leafy raceme; fruit a loculicidal capsule with four valves; seeds plumose . . . . . ***Epilobium*** (p. 89)
Flowers, fruit and seed not as above 180

180. At least some leaves pinnate or deeply pinnately cut 181
Leaves simple or variously divided but not as above 193

181. Petals and sepals 4; fruit a 2-valved capsule with membranous septum separating the valves, or didymous, or indehiscent and plant then with conspicuous tuberous root . . . 182
Not as above 187

182. Leaf-segments usually pinnatifid; some inflorescences borne opposite leaves; fruit *c.* twice as wide as long, didymous . . . . . ***Coronopus*** (p. 73)
Leaf-segments not pinnatifid; inflorescence not leaf-opposed; fruit about as long as or longer than wide, not didymous 183

183. Petals yellow; fruit a linear siliqua, the valves not coiling during dehiscence . . 184
Petals white; fruit indehiscent and inflated with ± spongy walls, or triangular-obcordate, or a siliqua with the valves coiling spirally during dehiscence 185

184. Petals 10–15 mm.; fruit 25 mm. or more, 3–4 mm. wide . . . ***Sinapis*** (p. 74)
Petals 2–4 mm.; fruit 15 mm. or less, *c.* 1 mm. wide . . . ***Sisymbrium*** (p. 69)

185. Plant with conspicuous brightly coloured tuberous root; fruit indehiscent, inflated, with ± spongy wall . . . . . ***Raphanus*** (p. 74)
Plant without conspicuous tuberous root; fruit dehiscent, the wall not spongy . . 186

186. Cauline leaves amplexicaul; petals usually 3 mm. or less; silicula triangular-obcordate ***Capsella*** (p. 73)
Cauline leaves not amplexicaul; petals usually 3 mm. or more; siliqua linear ***Cardamine*** (p. 70)

187. Flowers in umbels 188
Flowers not in umbels 189

188. Umbels simple; fruit 3–4 mm., the commissural groove very narrow; leaves sparsely hairy, ultimate segments linear, apiculate . . . . . ***Oreomyrrhis*** (p. 96)
Umbels compound; fruit *c.* 2 mm., the commissural groove wide; leaves glabrous, ultimate segments obovate, deeply 3-fid . . . . . ***Apium*** (p. 98)

189. Leaflets 1- to 2-pinnatifid or -pinnatisect; flowers actinomorphic; fruit a conspicuously beaked capsule . . . . . ***Erodium*** (p. 85)
Leaflets entire or serrate-dentate; flowers small or zygomorphic; fruit not as above . . 190

190. Leaves with three leaflets 191
Leaves with two or more pairs of leaflets 192

191. Pod sickle-shaped or spirally coiled . . . . . ***Medicago*** (p. 83)
Pod oblong or subglobose . . . . . ***Trifolium*** (p. 81)

192. Leaflets palmatisect, serrate or, if entire, less than 4 mm.; flowers small; fruit indehiscent, usually with two or more long spines, rarely spines rudimentary . . . ***Acaena*** (p. 76)
Leaflets entire, 5 mm. or more; flowers conspicuous; fruit a glabrous pod . . ***Vicia*** (p. 83)

193. Leaves palmate or deeply palmate-lobed 194
Leaves not palmate or palmate-lobed 201

194. Flowers solitary or in pairs, 8 mm. or more in diameter; fruit a capsule . . . 195
Flowers several in inflorescence, less than 8 mm. in diameter; fruit indehiscent . . 196

195. Petals pinkish purple; capsule with long beak; leaf-lobes 3-fid at apex · ***Geranium*** (p. 84)
Petals white or pale pink; capsule without long beak; leaf-lobes entire or 2-fid at apex . ***Oxalis*** (p. 83)

196. Leaflets 5 mm. or less; flowers in umbels, actinomorphic . . . ***Schizeilema*** (p. 96)
Leaflets 10 mm. or more; flowers in ± globose head, zygomorphic . . ***Trifolium*** (p. 81)

197. Petals and sepals 4; fruit a 2-valved capsule with membranous septum separating the valves . 198
Not as above 201

198. Basal leaves orbicular to reniform, cordate at base . . . . ***Cochlearia*** (p. 72)
Basal leaves not as above 199

199. Basal leaves with lamina less than 15 mm. . . . . ***Draba*** (p. 71)
Basal leaves with lamina more than 25 mm. 200

200. Stems with scattered stellate hairs; sepals stellate-hairy; petals yellow · ***Erysimum*** (p. 70)
Stems without stellate hairs; sepals glabrous or pubescent; petals white · ***Arabis*** (p. 71)

201. Leaves orbicular-reniform, shallowly 7- to 8-lobed; stems prostrate, rooting at nodes; flowers in umbels . . . . . ***Hydrocotyle*** (p. 91)
Leaves not as above; stems not as above or, if so, flowers not in umbels . . . 202

202. Petioles with prominent basal sheaths having long fimbriae; flowers in umbels . . 203
Sheaths absent or, if present, not fimbriate; flowers not in umbels 204

203. Leaves simple or deeply 3- to 5-fid, glabrous on upper surface; lobes apiculate ***Azorella*** (p. 92)
Leaves 3-fid, with scattered stellate hairs on both surfaces; lobes acute or obtuse, not apiculate . . . . . ***Bolax*** (p. 95)

204. Plant with milky latex; flowers unisexual, in small cyathia subtended by involucre; stamen 1 . . . . . ***Euphorbia*** (p. 86)
Plant without milky latex; flowers and stamens not as above 205

205. Aquatic herb with floating and submerged leaves; flowers many in axillary spikes . . . . . ***Potamogeton*** (p. 138)
Terrestrial herb 206

206. Stems creeping, rooting at nodes 207
Stems erect, if creeping not rooting at nodes 208

207. Leaves usually 5 mm. or less wide, usually acute; flowers actinomorphic, pink or white; fruit a capsule . . . . . ***Anagallis*** (p. 101)
Leaves usually 5 mm. or more wide, rounded or obtuse; flowers zygomorphic, lilac and white; fruit a green or purplish berry . . . . . ***Pratia*** (p. 113)

208. Leaves less than 1·5 mm. wide, linear, olive-green and coppery-tinted . ***Nanodea*** (p. 52)
Leaves more than 3 mm. wide, not linear or olive-green 209

209. Stems erect, fleshy; rhizome short, roots fleshy; leaves 12 mm. or more wide, imbricate; flowers strongly zygomorphic, white or yellow, subtended by large bracts; fruit a capsule opening by longitudinal slits 210
Not as above 211

210. Labellum distinctly 3-lobed; stigmatic column less than 6 mm. . . ***Gavilea*** (p. 179)
Labellum entire or slightly 3-lobed; stigmatic column more than 6 mm. . ***Chloraea*** (p. 178)

211. Petals 3 mm. or more; fruit a capsule 212
Petals less than 2 mm., or absent; fruit not a capsule 214

212. Stipules present; flowers zygomorphic; basal petal with conspicuous spur; stamens 5; capsule-valves opening to base . . . . . ***Viola*** (p. 87)
Stipules absent; flowers actinomorphic; spur absent; stamens 6 or 10; capsule-valves not opening to base 213

213. Leaves 10–30 ×5–10 mm., entire, glabrous or sparsely ciliate . . ***Calandrinia*** (p. 54)
Leaves 6–9 ×1·5–2·5 mm., usually 3(–5)-lobed or -fid, shortly glandular-hairy ***Saxifraga*** (p. 75)

214. Stipules absent 215
Stipules present 216

215. Plant pubescent; leaf-lamina 8–40 ×2–6 mm., oblong-lanceolate . . ***Myosotis*** (p. 104)
Plant glabrous; leaf-lamina 10–30 ×7–25 mm., ovate to rhomboid or broadly triangular . . . . . ***Chenopodium*** (p. 61)

216. Plant erect; leaves linear-lanceolate to oblong-ovate or hastate, green . . ***Rumex*** (p. 52)
Plant procumbent; leaves elliptical to elliptic-lanceolate, glaucous . . ***Polygonum*** (p. 52)

PTERIDOPHYTA

LYCOPODIACEAE

1. *Huperzia* Bernh.

Stems short, ascending, divided regularly into branches of equal length. Sporangia axillary, reniform, stipitate, borne near the top of the branches; spores foveolate-punctate.

1. ***H. selago*** (L.) Bernh. ex Schrank & Mart. 1829, *Hort. Monac.*, p. 3.

Lycopodium selago L. 1753, *Sp. Pl.*, p. 1102; Gaudichaud, 1825, p. 98; Hooker, 1847, p. 394; Skottsberg, 1913, p. 11.
L. selago L., var. *sauruoides* Bory 1825, in D'Urv., *Fl. Is. Mal.*, p. 26.

Stems 2–5 cm., erect, branched dichotomously, with many rows of imbricate leaves. Leaves 4–8 × 1·5–2·5 mm., linear-lanceolate, acute, with numerous minute teeth on margin, golden-green.

Rocky and sandy places, rare. 0–300 m.

West Falkland, East Falkland. Fuegia, Iles Crozet, Iles de Kerguelen, ? New Zealand, Tasmania, south-east Australia, northern South America, mountains and higher latitudes of Northern Hemisphere.

Typus. Europe.

The Falkland Islands plants probably require some formal infra-specific recognition but there is need for comprehensive comparison both with boreal populations and with *Lycopodium saururus* Lam. from Mauritius and the New Zealand species *L. varium* R. Br.

Specimens. **WF**: TC24 *Skottsberg**. **EF**: UC74 *Corner 327* (BIRM); VC27 *Hooker 19. viii. 1842* (K); VC47 *Moore 533* (K, LTR); s. loc. *Hooker in 1842* (K).

2. *Lycopodium* L.

Stems creeping, with short lateral branches. Leaves arranged spirally or in whorls, flat, linear to lanceolate, appressed, sessile. Sporangia in terminal spikes; sporophylls unlike the leaves, ovate to lanceolate, dentate, scarious.

Stems overground, leafy; sporophylls long-acute, more than five times as long as wide . . **1.** ***confertum***
Stems ± below ground, not leafy; sporophylls shortly acute, less than four times as long as wide . . . . . **2.** ***magellanicum***

1. ***L. confertum*** Willd. 1810, *Sp. Pl.*, Ed. 4, **5**, p. 27.

Roivainen, 1936, p. 8; Looser, 1945, p. 5.
L. magellanicum auct., non Swartz, *pro parte*; Gaudichaud, 1825, p. 98; D'Urville, 1825, p. 26; Skottsberg, 1913, p. 11.
L. clavatum L. var. *magellanicum* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 394, *pro parte.*

Stems on surface of ground, procumbent, elongate, branched, leafy; branches 3–5 mm. in diameter, procumbent or ascending, densely leafy. Leaves 4–7 mm., linear-lanceolate or linear, acute, irregularly dentate to entire. Spikes 8–20 ×4–5 mm., sessile, 1(–2) erect at ends of branches; sporophylls 4–6 mm.,

ovate-lanceolate, 5–8 times as long as wide, gradually tapering to acute apex, golden-green and with somewhat reflexed apex when mature.

Empetrum heath, *Cortaderia* grassland, alpine zone; locally common. 0–650 m.

West Falkland, East Falkland. West Fuegia, west Patagonia, east Patagonia (*c.* lat. 51°35′S.), southern Chile (*c.* lat. 41°S.).

Typus. Falkland Islands: West Falkland; Port Egmont. *Née* (B).

Specimens. **WF**: TC83 *Cunningham 31.i.1868* (K); TC99 *Vallentin in 1909–11* (K). **EF**: UC77 *Moore 587* (LP, LTR, K); VC37 *Taylor 231* (BIRM), *Holdgate 641a* (BIRM); VC47 *Taylor 208* (BIRM); s. loc. *Hooker* (K).

2. *L. magellanicum* (P. Beauv.) Swartz 1806, *Syn. Fil.*, p. 180.

Gaudichaud, 1825, p. 98; D'Urville, 1825, p. 26; Skottsberg, 1913, p. 11.

L. clavatum L. var. *magellanicum* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 394, *pro parte.*
Lepidotis magellanica P. Beauv. 1805, *Prodr. Aethéog.*, p. 102.

Stems just below ground surface, procumbent, elongate, branched, bearing white, ovate, obtuse, cucullate scales; vertical branches bearing distally a group of leafy, prostrate to erect branches 3–5 mm. in diameter. Leaves 3–5 mm., linear to linear-lanceolate, acute, entire. Spikes 8–55×3–5 mm., subsessile or on peduncles up to 1 cm., 1-2(–3) erect at ends of branches; sporophylls 3–5 mm., ovate to ovate-lanceolate, sometimes ± rhomboid, 2–4 times as long as wide, acute, becoming yellow and with reflexed apex when mature.

Empetrum heath, drier *Cortaderia* grassland, alpine zone; common. 0–590 m.

West Falkland, East Falkland. Fuegia, west and Andean Patagonia, South Georgia, Iles Crozet, Iles de Kerguelen.

Typus. ? Straits of Magellan. *Commerson.*

Specimens. **WF**: TC32 *Moore 716* (K, LTR, US), *Moore 770* (CHR, K, LTR, P); TC68 *Vallentin in 1909–11* (BM, K); TC79 *Moore 869* (C, K, LTR, S, UC); TC83 *Vallentin in 1909-11* (K); TC87 *Sladen Fa87/49* (BM); TC88 *Moore 890* (GH, K, LP, LTR), *Skottsberg**, *Vallentin ii.1911* (K); TC99 *Vallentin in 1909–11* (K), *in 1911* (K). **EF**: UC77 *Moore 611* (K, LTR); VC16 *Sladen JB108/5* (BM); VC27 *Hooker 19.viii.1842* (K); VC37 *Holdgate 641* (BIRM), *Moore 506* (GH, K, LP, LTR, S), *Booth 60* (LTR), *Hill xi.1902* (K), *Davies 4.ii.1938* (K), *Greene 76* (BIRM, K), *Cunningham i.1868* (K); VC47 *Hamilton 10.xi.1945* (BM), *Smith 17* (BM); s. loc. *McCormick in 1842* (BM), *Hooker 55* (BM, K), *Abbott in 1860* (K), *Gaudichaud* (K), *Edmonston* (K).

OPHIOGLOSSACEAE

1. *Ophioglossum* L.

Leaves not circinate in bud, consisting of a sterile, entire, rather fleshy lamina with reticulate veins and a linear, fertile spike with two rows of large, thick-walled, sunk and coalescent sporangia.

1. *O. crotalophoroides* Walt. 1788, *Fl. Carol.*, p. 256. Adder's Tongue

Christensen, 1910, p. 32; Skottsberg, 1913, p. 11; Lichtenstein, 1944, p. 390; Clausen, 1948, p. 176.

Rhizome short, swollen, fleshy, without scales, producing 1–2 leaves per season but usually only one develops fertile part. Sterile part 2·5–4·0 cm., basal half to one-third tapering to rhizome or to junction with fertile part when present; sterile lamina 18–24 mm. wide, ovate to oblong, concave, obtuse, subcordate, borne ± parallel to or obliquely to soil surface; fertile part a spike 2–3 cm., comprising a slender stalk and an upper fertile part 1·0–1·5 cm. having 10–14 sporangia on each side. Spores tuberculate. (Fig. 6g)

Empetrum heath and *Cortaderia* grassland; rare. *c.* 15–120 m.

? West Falkland, East Falkland. West Patagonia (lat. 47°S.), Andean Patagonia (*c.* lat. 49°S.), Chile, north along the Andes to *c.* lat. 5°N., Guatemala, North America north to lat. 33°15′N., South Georgia, ? Tristan da Cunha.

Typus. Eastern North America.

Clausen (1948) placed plants occurring south of lat. 45°S. in ssp. *robustum* Clausen, distinguished from the type subspecies by its larger spores, sporangia and fertile spike, but recent collections from the Falkland

Islands do not fully support its retention. The records of *Ophioglossum opacum* Carmichael from South Georgia (Greene, 1964) refer to *O. crotalophoroides*, but further material is needed to decide whether *O. opacum* from Tristan da Cunha, its type locality, is distinct from (Clausen, 1948) or synonymous with (Lichtenstein, 1944) this species.

Specimens. ? **WF**: s. loc. *Snyder in 1853* (CU). **EF**: UC11 *Skottsberg**; UC66 *Moore 636* (K, LTR); UC76 *Hallé 135* (K).

2. *Botrychium* Swartz

Leaves not circinate in bud, consisting of sterile, compound, rather fleshy lamina with dichotomous free veins, and fertile compound spike having two rows of large, thick-walled, free sporangia.

1. *B. dusenii* (Christ) Alston 1960, *Lilloa*, **30**, p. 107. Moonwort

B. lunaria (L.) Swartz var. *dusenii* Christ 1906, *Ark. Bot.*, **6**, Pt. 3, p. 5.

Rhizome vertical, elongate, cylindrical, fleshy, without scales, producing 1–2 leaves per season only one of which develops fertile part. Sterile lamina 2–4 × 1·8–2·5 cm., sessile, pinnate; pinnae 3–6 pairs, semi-orbicular to cuneiform, with cuneate base, entire or slightly and irregularly crenate; fertile spike 2·8–5·6 × 1–3 cm., pinnate to 2-pinnate, the stalk 0·2–2·4 cm., overtopping sterile lamina. Sporangia along margins of ultimate segments, yellowish brown; spores verrucose. (Fig. 6f)

Open sandy areas; very rare. *c.* 3 m.

East Falkland. Fuegia, Andean Patagonia.

Typus. Argentina: "Patagonia, Río Fosiles haud procul a locu San Martín in declivibus denudatis, *c.* 800 m.s.m.", 22.iii.1905. *Dusén* (BM!).

Specimens. **EF**: VC47 *Bennett 26.ii.1935* (BM), *Hamilton 30.xii.1946* (BM), *Moore 530* (GH, K, LP, LTR, S, US).

HYMENOPHYLLACEAE

1. *Hymenophyllum* Swartz

Very small, with the habit of bryophytes and often growing with them. Rhizome filiform, less than 1 mm. in diameter, creeping, smooth. Leaves procumbent or ascending to erect, persistent after withering, forming dense mat of foliage; lamina deeply pinnatisect, dentate, delicate and translucent, with prominent central veins to segments. Sori solitary, more or less globose; indusium of two ovate, convex valves united towards base.

Lamina often twisted, with marginal dentations prolonged into long hairs; sori terminal on segments; indusium with apical hairs .. .. **2. *tortuosum***

Lamina not twisted, without long marginal hairs; sori borne near base of segments; indusium without apical hairs .. .. **1. *falklandicum***

1. *H. falklandicum* Baker 1874, in Hook. & Baker, *Syn. Fil.*, ed. 2, p. 68.

Christensen, 1910, p. 25; Skottsberg, 1913, p. 7; Diém and Lichtenstein, 1959, p. 693.

H. peltatum auct., non Desv.; Wright, 1911, p. 337.
H. wilsoni auct., non Hook.; Hooker, 1847, p. 390.
Trichomanes flabellatum auct., non Van den Bosch; D'Urville, 1825, p. 26; Gaudichaud, 1826, p. 130.

Leaves 1–3(–5) × 0·5–1·0 cm., including petiole up to half total; segments simple or divided into two ± elongate lobes, the margin conspicuously dentate. Sori borne near base of segments, usually projecting from margin so as to appear stalked, glabrous, brown when mature. (Fig. 6n)

Rock crevices, caves; common. 0–515 m.

West Falkland, East Falkland. Fuegia, west and Andean Patagonia, South Georgia, Juan Fernandez.

Typus. Falkland Islands: East Falkland; in 1842. *Hooker* (K).

Specimens. **WF**: TC42 *Moore 802a* (CHR, K, LTR); TC88 *Moore 879* (LP, LTR, S), *Skottsberg**; TC99 *Vallentin in 1909–11* (K); UC27 *Skottsberg**; s. loc. *Vallentin in 1909–11* (K). **EF**: UC76 *Moore 567* (BIRM, C, GH, K, LTR, P); VC28 *Skottsberg**; VC37 *Moore 518* (K, LP, LTR, S), *Skottsberg**; s. loc. *Abbott in 1860* (K), *Havers in 1860* (BM), *Hooker* (K).

FIGURE 6

Leaf outlines of ferns.

a. *Blechnum magellanicum.*
b. *Polystichum mohrioides.*
c. *Adiantum chilense.*
d. *Rumohra adiantiformis.*
e. *Blechnum penna-marina.*
f. *Botrychium dusenii.*
g. *Ophioglossum crotalophoroides.*
h. *Schizaea fistulosa.*
i. *Cystopteris fragilis.*
j. *Gleichenia cryptocarpa.*
k. *Asplenium dareoides.*
l. *Grammitis kerguelensis.*
m. *Serpyllopsis caespitosa.*
n. *Hymenophyllum falklandicum.*
o. *Hymenophyllum tortuosum.*

a × ¼; b–j × ⅓; k, l × ½; m–o ×1.

2. *H. tortuosum* Hook. & Grev. 1829, *Icon. Fil.*, **2**, pl. 129.

Hooker, 1847, p. 390; Christensen, 1910, p. 28; Skottsberg, 1913, p. 7.

H. skottsbergii Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 29; Diém and Lichtenstein, 1959, p. 680.

Leaves *c.* 2–10(–14) × 1–4 cm., usually 2- to 3-pinnate, usually much twisted, the margin conspicuously dentate, with teeth prolonged into long hairs. Sori borne at tips of the segments, occasionally near base, densely hairy at apex, brown when mature. (Fig. 6o)

Moist and sheltered rock crevices, often associated with *H. falklandicum*.

West Falkland. Andean Patagonia, from Valdivia to Cabo de Hornos.

Typus. Argentina: Isla de los Estados (as Staten Island); Puerto Año Nuevo, 26.i.–12.ii.1787. *Menzies* (BM!).

Specimens. **WF**: UC18 *Vallentin in 1909–11* (K); UC27 *Skottsberg 86* (K).

2. *Serpyllopsis* Van den Bosch

Like *Hymenophyllum*, but with long, reddish hairs on rhizome, nerves and apex of lamina, with more elongate, simple, entire lobes of lamina, with more obovate sori, and with the indusium dentate at the apex and tubular towards the base.

1. *S. caespitosa* (Gaudich.) C. Chr. 1910, *Ark. Bot.*, **10**, Pt. 2, p. 29.

Skottsberg, 1913, p. 8; Diém and Lichtenstein, 1959, p. 741.

Trichomanes caespitosum (Gaudich.) Hook. 1846, *Sp. Fil.*, **1**, p. 132; Hooker, 1847, p. 391; Wright, 1911, p. 336.
Hymenophyllum caespitosum Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 99; Gaudichaud, 1826, p. 374; D'Urville, 1825, p. 26.

Leaves 0·5–2·0 × *c.* 0·3 cm., including short petiole, pinnate; lobes subopposite, oblong, the margins usually revolute, entire. Sori near the apex of the leaf, 1–3 terminal on a lobe; indusium valves obovate, truncate and dentate at apex, clothed with long red hairs. (Fig. 6m)

Sheltered rock crevices, usually associated with *Hymenophyllum falklandicum*; uncommon. 60–300 m.

West Falkland, East Falkland. Fuegia, west and Andean Patagonia, Chiloe, southern Chile, Juan Fernandez.

Typus. Falkland Islands: East Falkland; Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC24 *Skottsberg**; TC42 *Moore 802b* (K, LP, LTR); UC17 *Skottsberg**. **EF**: VC37 *Dollman 10.xii.1960* (BIRM), *Greene 78* (BIRM), *Skottsberg**, *Taylor 4.xii.1960* (BIRM); s. loc. *Abbott in 1860* (K), *Gaudichaud* (K), *Havers in 1860* (BM).

SCHIZAEACEAE

1. *Schizaea* Sm.

Rhizome short, creeping, the young parts clothed with shining brown hairs. Leaves erect; petiole filiform, bearing several pairs of fertile pinnae near its apex. Sporangia sessile, in two rows on each pinna.

1. *S. fistulosa* Labill. 1806, *Nov. Holl. Pl. Spec.*, **2**, p. 103, pl. 250. Comb Fern

Skottsberg, 1913, p. 10.

S. australis Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 98; D'Urville, 1825, p. 26; Gaudichaud, 1826, p. 296; Hooker, 1847, p. 394.

Rhizome up to 5 mm. in diameter, the hairs 2–3 mm. Petiole 5–20 × *c.* 0·1 cm., shiny, with occasional whitish glandular hairs; apical fertile part 3–10 mm.; pinnae 3–9 pairs, 1·5–4·0 mm., close-set, slightly incurved, irregularly lobed and bearing coarse hairs. Sporangia *c.* 0·5 mm. in diameter, elliptic-ovate. (Fig. 6h)

East Falkland. Southern Chile (lat. 39°30′–49°10′S.), New Zealand, Auckland Islands, Australia, Madagascar, New Caledonia, Fiji.

Typus. Australia. *Labillardière* (P).

This species has not been seen in the Falkland Islands since it was reported by Gaudichaud. It is included here because, although perhaps now extinct, it is readily overlooked and should be sought for in *Sphagnum* bogs, dune slacks and comparable areas. Gaudichaud recorded that "it occurs on the reverse side of dunes, at the place where the sand begins to merge into the land".

GLEICHENIACEAE

1. *Gleichenia* Sm.

Rhizome long-creeping, dichotomously branched, clothed in dark brown, suborbicular to ovate, acute or acuminate, peltate scales and bearing leaves at intervals. Leaves coriaceous, usually branched; veins free. Sori covered by revolute margins of pinnae, with few (usually 3–4) sporangia.

1. ***G. cryptocarpa*** Hook. 1846, *Sp. Fil.*, **1**, p. 7, pl. 6. Coral Fern

Hooker, 1847, p. 394; Melvill, 1903, p. 8; Wright, 1911, p. 339; Skottsberg, 1913, p. 10; Vallentin and Cotton, 1921, pl. 64.

G. macloviana Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 28.
Dicranopteris cryptocarpa (Hook.) Looser 1936, *Not. Helechos Chile*, **2**, p. 8.

Rhizome 1·5–3·0 mm. in diameter. Leaves 10–20 cm.; petiole *c.* two-thirds of total, with scattered ovate, acuminate, peltate scales near base; lamina 2-pinnate; primary pinnae 1–4 pairs, opposite, linear- to oblong-lanceolate, acute; pinnules (3–)8–22 × *c.* 1 mm., linear, acute, with undulate margin, grey-green. (Fig. 6j)

Usually forming large beds in *Empetrum* heath; rare. 6–*c.* 60 m.

West Falkland, East Falkland. Fuegia, northern Andean Patagonia, southern Chile (*c.* lat. 37–40°S.).

Typus. Chile: Valdivia; "plains near Los Andes". *Bridges 802.*

Specimens. **WF**: TD40 *Skottsberg**; TC50 *Moore 787* (BIRM, C, CHR, GH, K, LP, LTR, P, S, UC, US); TC51 *Snyder 1.iv.1853* (CU); TC58 *Vallentin 15* (BM); TC79 *Skottsberg**; TC99 *Vallentin in 1911* (K); s. loc. *Blake i.1926* (MANCH), *Davies BF52* (K), *Holmested in 1884* (BM), *Nichol 15* (BM). **EF**: UC58 *Carr i.1868* (K); UC69 *Cumming in 1868* (K); s. loc. *Chartres* (K), *Robinson* (K).

ADIANTACEAE

1. *Adiantum* L.

Rhizome creeping, covered with filiform, dark-coloured scales. Leaves herbaceous, glabrous; veins free. Sori in linear groups at the margin on the lower side of the pinnules; leaf-margin revolute to protect sporangia, membranous when mature; indusium absent.

1. ***A. chilense*** Kaulf. 1824, *Enum. Fil.*, p. 207.

Skottsberg, 1913, p. 10.

Rhizome up to 4 mm. in diameter. Leaves 20–40 cm., 2- or 3-pinnate, ovate to ovate-lanceolate; petiole *c.* 5–20 cm., black and shining; lamina bright green; pinnules 6–15 mm. in diameter, obovate to almost semicircular, lobed, cuneate, with short, thin stalk. (Fig. 6c)

In sheltered crevices among rocks; rare.

West Falkland. West Patagonia (*c.* lat. 45°20′S.), Andean Patagonia, Chiloe, southern Chile (*c.* lat. 40°S.), north-east Argentina (Córdoba), Juan Fernandez, Peru.

Typus. "Habitat in Peru." *Chamisso.*

Specimens. **WF**: TC73 *Vallentin v.1911* (K, MANCH); TD80 *Booth 68* (LTR), *Skottsberg 80* (K), *Vallentin ii.1910, iii.1911* (K, MANCH).

DAVALLIACEAE

1. *Rumohra* Raddi

Rhizome thick, dorsiventral, long-creeping, clothed with peltate scales. Leaves coriaceous; veins free. Sori orbicular, dorsal or subterminal on veins; indusium peltate, orbicular, coriaceous.

1. ***R. adiantiformis*** (Forst. f.) Ching 1934, *Sinensia*, **5**, p. 70. Leathery Shield Fern

Polystichum adiantiforme (Forst. f.) J. Sm. 1875, *Hist. Fil.*, p. 220; Wright, 1911, p. 337; Skottsberg, 1913, p. 9; Vallentin and Cotton, 1921, pl. 60.
Aspidium coriaceum Swartz 1806, *Syn. Fil. Lycopod.*, p. 57; Hooker, 1847, p. 392.
Polypodium adiantiforme Forst. f. 1786, *Fl. Ins. Aust. Prodr.*, p. 82.

Rhizome 4–10 mm. in diameter; scales reddish brown, denticulate. Leaves 5–30 cm., scattered along rhizome; petiole *c.* two-thirds as long as to equalling lamina, with scattered, lanceolate-ovate, acuminate scales, especially near base; lamina 2–12 cm. wide, 2- to 3-pinnate; pinnae alternate, lanceolate- to ovate-deltoid, the basal longer than the others; pinnules alternate, glabrous, narrowly lanceolate to ovate, acute, rarely obtuse, obtusely dentate to subacutely pinnatifid. Sori abundant and conspicuous, 1–3 per pinnule-lobe. (Fig. 6d)

In dense beds among coastal *Empetrum* heath; rare. 0–15 m.

West Falkland. South-east Australia, New Zealand, New Guinea, South Africa, Madagascar, Mauritius, ? Tristan da Cunha, central America and West Indies south to Chiloe.

Typus. New Zealand, s. loc., *G. Forster* (BM).

Specimens. **WF**: TC68 *Vallentin in 1909–11* (K); TC78 *Vallentin 7.xii.1909* (K), *in 1910* (BM); TC79 *Moore 860* (BIRM, CHR, GH, K, LP, LTR, P, S), *Skottsberg**; s. loc. *Vallentin* (MANCH).

ASPLENIACEAE

1. *Asplenium* L.

Rhizome short, erect. Leaves in apical tufts; lamina 2- or 3-pinnate; veins free. Sori elliptical to oval; indusium lateral, resembling sorus in shape, opening inwards (towards midrib).

1. ***A. dareoides*** Desv. 1811, *Ges. Nat. Freunde Berl. Mag.*, **5**, p. 322.

Moore, 1967*a*, p. 24.
A. magellanicum Kaulf. 1824, *Enum. Fil.*, p. 175; Hooker, 1847, p. 392; Wright, 1911, p. 338; Skottsberg, 1913, p. 9.
Gymnogramma leptophylla auct., non (L.) Desv.; Marquand, 1923, p. 371; Skottsberg, 1929, p. 304.

Leaves 2·0–7·5 cm., glabrous or very sparsely glandular-hairy; petiole *c.* half to two-thirds as long as lamina, blackish brown towards base, green above; lamina 1–2 cm. wide; pinnules with 2–4(–5) lobes, sometimes rather dentate at apex. Sori 1–2 per pinnule; indusium whitish, slightly smaller than sorus. (Fig. 6k)

Shaded rock crevices and caves; uncommon. 210–460 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 46–47°S.), Andes (lat. 36°48′S.), southern Chile (*c.* lat. 40°S.), Juan Fernandez.

Typus. "In America australi." (P).

Specimens. **WF**: TD51 *Bertrand 28.ii.1964* (LTR), *Hamilton 59* (BM), *Vallentin xi.1910* (K); UC27 *Vallentin xii.1910* (K). **EF**: UC76 *Corner 334* (LTR).

2. *Phyllitis* Hill

Rhizome short. Leaves simple; veins free. Sori oblong to narrowly linear, arranged in opposite pairs, those of two neighbouring veins parallel and close and ultimately fusing; indusium linear, attached laterally, those of a sorus-pair opening towards each other.

1. *P. scolopendrium (L.) Newman 1844, *Hist. Brit. Ferns*, ed. 2, p. 10.

Scolopendrium vulgare Sm. 1793, *Mém. Ac. Turin*, **5**, p. 421; Marquand, 1923, p. 371.

Leaves 10–60 cm., persistent; petiole up to half as long as lamina; lamina 3–6(–7) cm. wide, linear-lanceolate, cordate at base, the margin entire, slightly undulate. Sori 8–18 mm. wide, linear, usually occupying more than half width of lamina.

West Falkland. Introduced; native of south-western and central Europe.

Specimens. **WF**: TC86 *Vallentin* (K).

ATHYRIACEAE

1. *Cystopteris* Bernh.

Rhizome blackish. Leaves uniform, delicate, slender-stalked, dying down in winter; veins free. Sori orbicular; indusium ovate-lanceolate, cucullate, acuminate, attached by its base across the vein below the sorus, becoming deflexed and shrivelled as the sporangia mature.

1. *C. fragilis* (L.) Bernh. 1806, *Neues J. Bot.*, **1**, Pt. 2, p. 27.

Hooker, 1847, p. 391; Wright, 1911, p. 337; Skottsberg, 1913, p. 8; Vallentin and Cotton, 1921, pl. 59; Moore, 1967*a*, p. 24.

C. apiiformis Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 28.
Polypodium fragile L. 1753, *Sp. Pl.*, p. 1091.

Rhizome short, *c.* 0·5–1·0 cm. in diameter, covered with old leaf-bases and with lanceolate, acuminate scales. Leaves 4–15 cm., tufted, glabrous; petiole *c.* one-quarter to half as long as lamina; lamina (2·0–)3·5–8·0 cm. wide, 2- to 3-pinnate; pinnae subopposite, subsessile, ovate-lanceolate, the second pair from the base usually the longest; pinnules ovate to oblong, ± decurrent, dentate to pinnatifid. Sori in two rows, one on each side of the midrib of the pinnule; spores echinate. (Fig. 6i)

Moist rock crevices and caves, occasionally on more exposed wet ledges; local. 0–100 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, Andes (lat. 36°48′S.), west Patagonia (lat. 45°20′S.), southern Chile (lat. 30°S.), South Georgia, Iles de Kerguelen, New Zealand, Tasmania, south-east Australia, North America, Eurasia, Africa.

Typus. Europe.

Plants from the circum-Antarctic area between New Zealand and the Falkland Islands have been described as var. *apiiformis* (Gandoger) C. Chr.

Specimens. **WF**: TC46 *Vallentin in 1909–11* (K); TD40 *Skottsberg**; TD51 *Bertrand 28.ii.1964* (LTR), *Hamilton 58, 60* (BM); TC68 *Vallentin in 1909–11* (K); TD80 *Vallentin iii.1911* (K); UC27 *Skottsberg**. **EF**: UC66 *Moore 639* (K, LP, LTR); s. loc. *Hooker* (K).

ASPIDIACEAE

1. *Polystichum* Roth

Rhizome erect or ascending, short, clothed with lacerate scales. Leaves tufted, coriaceous; veins free. Sori orbicular, dorsal on veins; indusium peltate, orbicular, persistent.

1. *P. mohrioides* (Bory) Presl 1836, *Tent. Pteridogr.*, p. 83.

Wright, 1911, p. 337; Skottsberg, 1913, p. 9; Vallentin and Cotton, 1921, pl. 61.

Aspidium mohrioides Bory ex D'Urv. 1825, *Fl. Is. Mal.*, p. 26; Gaudichaud, 1826, p. 130; Hooker, 1847, p. 392.

Leaves 8–20 cm.; petiole *c.* one-third to half of total, densely clothed with dark brown, ovate to ovate-lanceolate, long-acuminate, serrate, fimbriate or fimbrio-denticulate scales; lamina (1·0–)1·5–3·0 cm. wide, oblong to oblong-lanceolate, 1- to 2-pinnate; pinnae alternate, imbricate, ovate or triangular, obtuse, with ± distinct, crenate to undulate pinnules near base and with decreasingly crenate margin towards apex.

Sori in one, occasionally two, rows along each side of midrib of pinnae in distal half of lamina, sometimes coalescing when mature; sporangia dark brown. (Fig. 6b)

Among rocks, often in deep crevices, sometimes forming dense stands; common. 10–600 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, Andes (lat. 36°48'S.), South Georgia, Prince Edward Islands, ? Auckland Islands (see Allen, 1961, p. 89).

Typus. Falkland Islands: East Falkland; Mount Simon (as Mount Chatellux), 20.xi.–18.xii.1822. *D'Urville* (P).

The Falkland Islands plants are usually referred to var. *plicatum* (Poepp.) C. Chr., but plants with acute pinna-lobes, corresponding to var. *elegans* (Remy) Christ, can also be distinguished.

Specimens. **WF**: TD40 *Moore 924* (K, LTR, P, US); TC68 *Skottsberg*, Vallentin* (BM); TC78 *Skottsberg**; TC88 *Vallentin ii.1911* (K, MANCH), *19.xii.1910* (MANCH); TD90 *Vallentin iii.1911* (K, MANCH); UC17 *Skottsberg**; UC19 *Skottsberg**. **EF**: UC76 *Corner 346* (LTR); UC77 *Moore 586* (C, GH, K, LTR); VC27 *Skottsberg**; VC37 *Cunningham 21.i.1868* (K), *Green 77/1* (K), *Moore 509* (K, LP, LTR, S); VC47 *Davies BF35a* (K), *Smith 35* (BM); s. loc. *Abbott in 1860* (BM, K), *Darwin iii.1834* (CGE, K), *D'Urville* (K), *Hooker 117* (K), *Lesson* (K).

2. *Dryopteris* Adans.

Rhizome erect or ascending, short, stout, densely clothed with wide, soft scales. Leaves tufted; lamina 1- or 3-pinnate; veins free. Sori large, orbicular; indusium reniform, persistent.

1. *D. dilatata (Hoffm.) A. Gray 1848, *Man. Bot. North. U.S.*, p. 631. Broad Buckler Fern

D. spinulosa var. *dilatata* (Hoffm.) C. Chr. 1906, *Ind. Fil.*, p. 264; Wright, 1911, p. 337; Skottsberg, 1929, p. 305.

Rhizome erect or ascending. Leaves 10–50 cm. or more; petiole one-quarter to half of total, scaly; scales dark brown or blackish in the centre and pale brown at margin; lamina triangular-ovate or -lanceolate, 3-pinnate; pinnae triangular-ovate or -lanceolate, pinnate, stipitate; pinnules oblong-ovate to -lanceolate, pinnate. Sori 0·5–1·0 mm. in diameter, in two rows on each segment.

Cultivated in gardens and reported as an escape near settlements.

West Falkland. Introduced; native of Europe.

Specimens. **WF**: TD40 *Sladen JB123/5* (BM).

D. filix-mas (L.) Schott 1834, *Gen. Fil.*, pl. 9, the Male Fern, has been reported from northern West Falkland (Wright, 1911, p. 337). It is a native of Europe, which may be cultivated in gardens, and differs from *D. dilatata* in its petiole being less than one-quarter of the total leaf length, pinnate lamina with deeply pinnatifid pinnae, pale brown scales on rhizome and, sparsely so, on petiole, and generally larger sori (*c.* 1·5 mm.).

BLECHNACEAE

1. *Blechnum* L.

Rhizome erect, ascending, often produced into an erect "trunk", or creeping, clothed with scales. Leaves usually coriaceous; veins free, forked. Sori borne on distinct fertile leaves, elongate, in two continuous bands throughout the length of each pinna; indusium formed by incurved leaf-margin.

1. Rhizome creeping; sterile pinnae *c.* twice as long as wide .. .. .. **1. *penna-marina***
   Rhizome erect or ascending; sterile pinnae (4–)8 or more times as long as wide 2
2. Petiole base covered with stiff dark brown hairs up to 1 mm. wide .. **2. *magellanicum***
   Petiole base covered with pale reddish brown scales *c.* 7 mm. wide .. .. **3. *chilense***

1. *B. penna-marina* (Poir.) Kuhn 1868, *Fil. Afr.*, p. 92. Small Fern

Christensen, 1910, p. 6; Wright, 1911, p. 338; Skottsberg, 1913, p. 9; Vallentin and Cotton, 1921, pl. 62.

Lomaria alpina Spreng. 1827, *Syst. Veg.*, ed. 16, **4**, Pt. 2, p. 62; Hooker, 1847, p. 392; Melvill, 1903, p. 8.
L. polypodioides Desv. 1825, in Gaudich., *Annls Sci. nat.*, **5**, p. 98; Gaudichaud, 1826, p. 399.
Stegania alpina R. Br. 1810, *Prodr. Fl. Nov. Holl.*, **1**, p. 152; D'Urville, 1825, p. 26.
Polypodium penna-marina Poir. 1804, in Lam., *Encycl. Méth. Bot.*, **5**, p. 520.

Rhizome up to 20 cm., *c.* 2–3 mm. in diameter, wiry, creeping, sparsely covered in reddish or pale brown, ovate, acuminate to obtuse scales; leaves distributed along rhizome but often clustered. Sterile leaves procumbent to ascending, 6–15 cm.; petiole one-third to half of total, naked or with ovate-lanceolate, acuminate, brownish scales sparsely present near base; lamina 9–13 mm. wide, linear to linear-lanceolate, pinnate to pinnatifid, subcoriaceous to ± herbaceous, green to reddish green; pinnae alternate, close-set, 3–6(–9)×0·2–0·6 cm., oblong to triangular, obtuse to subacute. Fertile leaves erect, normally longer than the sterile ones; pinnae revolute and thus appearing narrower, ± arcuate, distant. Sori coalescing when mature to cover whole under surface of pinna. (Fig. 6e)

In all communities, perhaps most abundant and locally dominant in *Empetrum* heath; very common. 0–705 m.

West Falkland, East Falkland. Fuegia, west and Andean Patagonia, southern Brazil, South Georgia, Tristan da Cunha, Gough Island, Prince Edward Islands, Iles Crozet, Iles de Kerguelen, Macquarie Island, Campbell Island, Auckland Islands.

Typus. "Detroit de Magellan", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC06 *Snyder 1.iii.1853* (CU); TC32 *Moore 739* (GH, K, LP, LTR, P, S); TC68 *Vallentin in 1909–11* (K); TC83 *Cunningham 31.i.1868* (K); TD80 *Vallentin* (MANCH); TC99 *Vallentin iii.1911* (K, MANCH); s. loc. *Vallentin 59* (BM). **EF**: UC14 *Cunningham 29.i.1868* (K); VC37 *Booth 55* (LTR), *Davies AF27* (K), *Hill xi.1902* (K), *Morton Middleton 24.xi.1904* (MANCH); VC47 *Greene 47* (BIRM, K), *Lechler ix.1850* (K); s. loc. *Darwin iii.1833* (CGE), *Hooker in 1840* (BM), *McCormick in 1842* (BM), *R. Vallentin in 1901–02* (MANCH).

2. *B. magellanicum* (Desv.) Mett. 1856, *Fil. Lechl.*, **1**, p. 14.

Skottsberg, 1913, p. 9.

Lomaria setigera Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 98; Gaudichaud, 1826, p. 399.

L. magellanica Desv. 1811, *Ges. Nat. Freunde Berl. Mag.*, **5**, p. 330; D'Urville, 1825, p. 26; Hooker, 1847, p. 393; Melvill, 1903, p. 8.

Blechnum tabulare auct., ? non (Thunb.) Kuhn; Wright, 1911, p. 338; Vallentin and Cotton, 1921, pl. 63.

Rhizome erect, very stout, often produced into a short "trunk", invested by bases of old petioles, bearing numerous tufted leaves. Sterile leaves ascending to erect, 0·4–1·5 m.; petiole one-quarter to one-third of total length, ± terete, densely clothed in stiff, dark brown, linear-lanceolate, hair-like scales, the scales 30–40×*c.* 1 mm. near base, but shorter, paler, membranous and sparser higher up; lamina 10–*c.* 25 cm. wide, oblong to oblong-lanceolate, pinnate, coriaceous; pinnae alternate to subopposite, close-set (3–)5–9×*c.* 1 cm., linear to linear-lanceolate, acute, shallowly cordate; midrib with scattered linear-lanceolate, membranous scales, especially beneath. Fertile leaves erect, equalling or rather shorter than sterile ones; pinnae narrower, *c.* 5 mm. wide. Sori completely covering undersurface of pinna when mature. (Fig. 6a)

Empetrum heath, often in "fern beds" with *B. penna-marina* (Plate IIc). 0–215 m.

West Falkland, East Falkland. Fuegia, west and Andean Patagonia.

Typus. "Habitat ad fretum Magellanicum", xii.1767–i.1768. *Commerson.*

Falkland Islands material is distinguished as var. *setigerum* (Gaudich.) C. Chr., differing from other varieties by the absence or poor development of the "trunk", by the imbricate sterile pinnae and by the dense covering of scales on the petiole.

It is possible that the Falkland Islands plants should be considered as a subspecies of *B. tabulare* (Thunb.) Kuhn, but a decision must await a comprehensive study of the variation and affinities of that species.

Specimens. **WF**: TC06 *Snyder 3.xii.1852* (CU); TC32 *Moore 677* (LP, LTR), *Moore 771* (BIRM, GH, K, LTR, S); TC46 *Vallentin in 1909–11* (K); TC68 *Vallentin iii. & vi.1910* (K), *Vallentin 58* (BM); TC79 *Moore 859* (C, CHR, K, LTR, US); TC99 *Vallentin i.1911* (K). **EF**: UC58 *Moore 656* (K, LTR); VC37 *Booth 56, 57* (LTR), *Davies BF11, BF12* (K), *Gibbs in 1945* (K), *Hill xi.1902* (K); VC47 *Greene 23* (BIRM, K), *Smith 14, 40* (BM); s. loc. *Cunningham ii.1867* (K), *Darwin iii.1833* (K), *Havers in 1860* (BM), *Hooker 52* (BM, K), *McCormick 13.iv.1842* (BM), *Wright* (K).

3. *B. chilense* (Kaulf.) Mett. 1856, *Fil. Lechl.*, **1**, p. 14.

Christensen, 1910, p. 8; Skottsberg, 1913, p. 9.

Lomaria chilensis Kaulf. 1824, *Enum. Fil.*, p. 154.

Similar to *B. magellanicum* but distinguished by the ovate to ovate-lanceolate scales, 12–25×6–8 mm., at the base of the petiole, by the more compressed petiole, by the generally wider fertile pinnae, and by the conspicuously revolute margins of the sterile pinnae.

Empetrum heath, forming large "fern beds" with *B. magellanicum*, *B. penna-marina* and *Rumohra*; rare. *c.* 60 m.

West Falkland. West Patagonia (north from lat. 49°59'S.), Andean Patagonia, Chile (south from *c.* lat. 33°S.), Juan Fernandez.

Typus. "In Chile." *Chamisso.*

Specimens. **WF**: TC79 *Moore 858* (GH, K, LP, LTR, S), *Vallentin in 1909–11* (K).

GRAMMITIDACEAE

1. *Grammitis* Swartz

Leaves tufted, ligulate, entire, rarely with irregular lobes towards apex. Sori in two rows, one on each side of midvein; indusium absent.

1. ***G. kerguelensis*** Tardieu-Blot 1962, *Adansonia*, **2**, Pt. 1, p. 114.

G. billardieri auct., non Willd.; Sota, 1960, p. 202; Philcox, 1962, p. 244.

Rhizome short, ascending, covered with scarious, linear-lanceolate scales *c.* 3·0×0·5 mm., bearing cluster of ascending to erect leaves. Leaves 1–3×0·2–0·4 cm., subspathulate to sublinear, entire, coriaceous, with indistinct midvein, glabrous. Sori on under surface of distal half of leaf, oblong to linear-oblong, coalescing when mature. (Fig. 6l)

Rock crevices; rare, but easily overlooked. *c.* ? 180–485 m.

East Falkland. Iles de Kerguelen, Iles Crozet, Marion Island, South Georgia.

Typus. Iles de Kerguelen: Butte aux Fougères Molloy. *Cour* (P).

Specimens. **EF**: UC76 *Corner 333* (K, LTR); s. loc. *Darwin iii.1834* (K).

SPERMATOPHYTA—ANGIOSPERMAE

DICOTYLEDONES

URTICACEAE

1. *Urtica* L.

Annual or perennial herbs, usually with stinging hairs. Leaves opposite, simple; stipules present. Inflorescence a spike-like raceme, with clustered cymes. Flowers green, unisexual. Perianth 4-merous. Stamens 4. Female flowers with unequal perianth-segments, the two larger enclosing the fruit. Style simple. Fruit an achene.

1.** ***U. urens L. 1753, *Sp. Pl.*, p. 984. Small Nettle

Gaudichaud, 1825, p. 106; D'Urville, 1825, p. 55.

Monoecious annual up to 40 cm. Leaves with lamina 1–3 cm., ovate, cordate to cuneate at base, deeply serrate; petiole *c.* two-thirds as long as lamina. Racemes up to 2 cm. Perianth-segments of female flowers ciliate, glabrous or sparsely hispid dorsally.

Waste places and gardens near settlements; locally common.

West Falkland, East Falkland. Introduced; native of Eurasia.

Specimens. **WF**: TD51 *Sladen JB122/3* (BIRM, BM). **EF**: VC16 *Sladen JB102/8* (BM); UC65 *Moore*†; s. loc. *Darwin iii.1834* (K).

U. dioica L. 1753, *Sp. Pl.*, p. 984, the Stinging Nettle, may also occur as a casual alien; it is perennial, dioecious, generally larger than *U. urens* in all parts, with the petiole not more than half as long as the lamina and with the perianth-segments of female flowers pubescent or hispid.

SANTALACEAE

1. *Nanodea* Banks ex C.F. Gaertn.

Hemiparasitic herbs. Leaves alternate, simple, persistent. Flowers actinomorphic, hermaphrodite; perianth adnate to ovary, forming a concave disc with 4 ovate, ± acute, marginal lobes. Stamens 4, opposite perianth-lobes. Ovary inferior, 1-celled; ovules 2; style 1, short, conical; stigma shortly 2-lobed. Fruit a drupe; seed 1, with abundant endosperm.

1. ***N. muscosa*** Banks ex C.F. Gaertn. 1807, *Fruct. Sem. Pl.*, **3**, p. 251.

Gaudichaud, 1825, p. 101; 1826, p. 442; D'Urville, 1825, p. 36; Hooker, 1847, p. 342; Skottsberg, 1905, p. 50; 1913, p. 24; Wright, 1911, p. 328; Vallentin and Cotton, 1921, pl. 52.

Perennial, 2–8 cm., usually branched. Leaves 2–15 × 0·5–1·5 mm., linear, acute to acuminate, entire, olive-green, often coppery tinted, usually grouped towards ends of branches. Flowers *c.* 3 mm. in diameter, solitary in axils of apical leaves, shortly pedunculate. Perianth yellowish, often coppery-reddish. Stigma reddish. Fruit *c.* 5–7 mm., globose, reddish. Fl. X–I.

Hemiparasite on roots of *Empetrum*, *Pernettya* and probably *Baccharis* and *Cortaderia*. *Empetrum* heath, *Cortaderia–Baccharis* association; locally common. 0–800 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, west Patagonia, Chiloe.

Typus. Tierra del Fuego, i.1769. *Banks and Solander* (BM!).

Specimens. **WF**: TC32 *Moore 715* (K, LP, LTR, US); TC88 *Skottsberg**; s. loc. *Vallentin ii.1911* (K, MANCH), *Blake in 1925–26* (MANCH). **EF**: UC65 *Skottsberg**; VC28 *Skottsberg**; VC36 *Skottsberg**; VC37 *Hill xi.1902* (K), *Davies AF32* (K); VC47 *Hooker 24* (K), *Skottsberg**; s. loc. *Gaudichaud* (K).

POLYGONACEAE

1. *Polygonum* L.

Perennial herbs. Leaves alternate, simple; stipules fused in a membranous sheath (ochrea). Flowers hermaphrodite; perianth-segments (3–)5(–6), spirally arranged, ± equal, persistent. Stamens 8. Ovary superior, 1-celled; styles (2–)3. Fruit a nut ± enclosed in persistent perianth.

1. ***P. maritimum*** L. 1753, *Sp. Pl.*, p. 361. Sea Knotgrass

Skottsberg, 1913, p. 25; Vallentin and Cotton, 1921, pl. 49; Moore, 1967*a*, p. 24.

Stems up to 20(–35) × 0·2–0·3 cm., prostrate, branched, stout and woody at base. Leaves with lamina 9–25 × 3–6 mm., elliptical to elliptic-lanceolate, acute, with entire revolute margin, glaucous, shortly petiolate; ochreae 5–12 mm., usually equalling or longer than internode, with 7–14 conspicuous, branched veins, usually lacerate, reddish brown at base and silvery hyaline distally. Flowers in axillary clusters of 1–5. Perianth-segments *c.* 2·0 × 1·5 mm., ovate, cucullate, green with white or pinkish margin. Nut 3·0–4·5 mm., trigonous, equalling or slightly exceeding perianth, dark shining brown. $2n = 20$. Fl. XII–II.

Maritime sands and shingle; local. 0–1·8 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, coasts of Europe.

Typus. In Europe.

The Southern Hemisphere plants have been distinguished as var. *chilense* (Koch) Skottsb. but no characters can be found to separate them from European specimens.

Specimens. **WF**: TC66 *Skottsberg**; TC79 *Moore 819* (BIRM, GH, K, LTR, P, S, UC, US); TC88 *Hamilton JH53* (BM), *Sladen Fal10/49* (BIRM, BM); TC99 *Vallentin i.1911* (MANCH); s. loc. *Vallentin in 1909–11* (K), *Firmin 41* (K), *Blake in 1925–26* (MANCH). **EF**: UC58 *Moore 662* (LTR); UC68 *Moore 665* (K, LP, LTR).

2. *Rumex* L.

Perennial herbs, usually with long, stout roots, sometimes rhizomatous. Leaves alternate, simple; stipules tubular (ochreae). Flowers hermaphrodite or unisexual, in whorls on branched or simple

inflorescence; perianth-segments in two whorls of three, the outer small and thin, the inner (valves) enlarging and usually becoming hard in fruit. Stamens in two whorls of three. Ovary superior, 1-celled; styles 3. Fruit a trigonous nut.

1. Leaves usually hastate and acid-tasting; flowers usually unisexual 2
   Leaves not hastate or acid-tasting; flowers usually hermaphrodite 3
2. Valves separable from nut .. .. **3. *acetosella***
   Valves not separable from nut .. .. **4. *angiocarpus***
3. Valves with distinct teeth more than 1 mm.; leaf-margins undulate .. .. **2. *obtusifolius***
   Valves ± entire; leaf-margins irregularly undulate and strongly crispate .. .. **1. *crispus***

1. *R. crispus L. 1753, *Sp. Pl.*, p. 335. Curled Dock

Hooker, 1847, p. 341; Birger, 1907, p. 294; Wright, 1911, p. 327.

R. patientia auct., non L.; Gaudichaud, 1825, p. 101; 1826, p. 133; D'Urville, 1825, p. 36.

Stems 30–*c.* 100 cm., erect. Leaves with lamina up to 25 cm., narrowly lanceolate, acute, cuneate at base, with irregularly undulate and strongly crispate margins, herbaceous; petiole usually shorter than lamina. Inflorescence simple or with short branches usually subtended by linear-lanceolate, crispate leaves. Pedicels 1·5–2·5 times as long as valves. Valves *c.* 3–4×2–3 mm., ovate, cordate at base, entire or distantly denticulate. Nut *c.* 3 mm. Fl. XII–II.

Shingle beaches; local.

West Falkland, East Falkland. Introduced; native of Europe, but widely naturalized in temperate regions of the world.

Specimens. **WF**: TC88 *Moore 838* (K, LTR).

R. magellanicus Campd. 1819, *Monogr. Rumex*, p. 71, 144, which occurs in Fuegia and north along the Andes to lat. *c.* 32°S., can be distinguished from *R. crispus* by its coriaceous, fleshy, regularly undulate-crispate leaves which have inconspicuous lateral veins, by its ascending flowering stems, and by its very short fruiting pedicels. It has been attributed to the Falkland Islands by Grisebach (1856, p. 118), who is quoted by Skottsberg (1913, p. 24) and Rechinger (1934, p. 14), but no material has been seen and its occurrence must be regarded as doubtful.

2. *R. obtusifolius L. 1753, *Sp. Pl.*, p. 335. Broad-leaved Dock

Birger, 1907, p. 278; Moore and Sladen, 1965, p. 32.

Stems 40–*c.* 100 cm., erect. Basal leaves with lamina up to *c.* 25 cm., ovate-oblong, obtuse, cordate at base, with undulate margins, herbaceous, the upper leaves lanceolate to ovate-lanceolate; petiole slightly longer than lamina. Inflorescence branched, leafy towards base. Pedicels up to 2·5 times as long as valves. Valves *c.* 5–6 mm., ovate or ovate-triangular, with 3–5 marginal teeth 1 mm. or more. Nut *c.* 3 mm.

Waste ground near settlements; uncommon.

West Falkland, East Falkland. Introduced; native throughout Europe and widely naturalized in temperate regions of both hemispheres.

The Falkland Islands specimens belong to ssp. *obtusifolius*.

Specimens. **WF**: TD51 *Sladen JB122/6* (BM); TC88 *Sladen 18.xii.1949*†.

3. *R. acetosella L. 1753, *Sp. Pl.*, p. 338. Sheep's Sorrel

Gaudichaud, 1825, p. 101; 1826, p. 133; D'Urville, 1825, p. 36; Hooker, 1847, p. 341; Birger, 1907, p. 278; Wright, 1911, p. 327; Skottsberg, 1913, p. 24; Rechinger, 1934, p. 47; Moore and Sladen, 1965, p. 32.

Stems up to *c.* 30 cm., erect or ascending, slender. Leaves with lamina *c.* 1·5–4·0×0·4–1·0 cm., hastate, with prominent basal lobes, variable in outline, usually entire, acid-tasting; petiole much shorter than to longer than lamina. Inflorescence branched, leafless or with few linear to linear-lanceolate, ± sessile leaves subtending lower branches. Pedicels usually shorter than valves. Valves *c.* 1·0–1·5×*c.* 1 mm., rarely much longer than nut, entire or sparsely crenulate, rather thick, readily separating from nut. Nut *c.* 1·5 mm.

Shingle and open soil, particularly eroding peat areas and degraded *Poa flabellata* tussocks; abundant.

West Falkland, East Falkland. Introduced; widely distributed throughout temperate regions of the world. Probably introduced in most of the Southern Hemisphere.

Specimens. **WF**: TC06 *Snyder 4.xii.1852* (CU); TD40 *Moore*†; TD51 *Sladen JB122/7* (BM); TC83 *Cunningham 31.i.1868* (K); TC88 *Sladen Fal12/49* (BM), *Moore 831* (LTR); s. loc. *Vallentin 55* (K), *R. Vallentin in 1901–02* (MANCH), *Nichol 55* (BM). **EF**: VC28 *Sladen JB111/13* (BIRM); VC37 *Hamilton JH15, JH64* (BM), *Hill xi.1902* (K), *Davies AF6* (K); s. loc. *Darwin 252* (K), *Hooker 73* (K), *Proges in 1920* (BM).

4. *R. angiocarpus Murb. 1891, *Acta Univ. lund.*, **27**, Pt. 5, p. 46.

R. acetosella L. ssp. *angiocarpus* (Murb.) Murb. 1899, *Acta Univ. lund.*, Avd. 2, **11**, p. 13; Rechinger, 1934, p. 48.

Similar to *R. acetosella* but differs in its thin valves which adhere to the nut, and in the shorter nut (*c.* 1 mm.), which is as wide as or wider than long.

Occupies the same habitats as *R. acetosella*, with which it has been frequently confused, so that distributional data are very scanty.

Probably West Falkland, East Falkland. Introduced; native of central and western Europe, Mediterranean region, North Africa, probably elsewhere.

Specimens. **EF**: VC47 *Birger in 1904* (S).

PORTULACACEAE

1. *Calandrinia* Humb.

Annual herbs. Leaves alternate, simple; stipules absent. Flowers hermaphrodite. Sepals 2, connate at base, persistent. Petals 5, free. Stamens 6. Ovary superior, 1-celled; style with three stigmatic lobes. Fruit a capsule with three valves opening from apex; seeds many.

1. *C. feltonii* Skottsb. 1913, *K. svenska VetenskAkad. Handl.*, **50**, No. 3, p. 25.

Hauman, 1925, p. 433; Suárez, 1953, p. 19.

Subglabrous. Stems many, up to 35 cm., prostrate, lax. Basal and lower cauline leaves with lamina 1–3 × 0·5–1·0 cm., linear-spathulate to subspathulate, acute or obtuse, entire, often sparsely ciliate, rather fleshy, narrowing to winged petiole 2–3 mm. wide; upper leaves smaller, obovate-spathulate, ± obtuse. Flowers in leafy racemes, solitary in axils of upper leaves; peduncle 1–2 cm., up to *c.* 5 cm. in fruit, suberect. Sepals *c.* 8 × 4 mm., ovate-lanceolate, acute to acuminate, sparsely ciliate-fimbriate, especially near base; petals 8–11 mm., equal, magenta or white. Capsule 8–10 mm., equalling or shorter than sepals, ovoid, subacuminate; seeds 1·5–2·0 mm., orbicular, strongly compressed, with acute margin, smooth with shallow reticulate grooves, shining black. $2n = 24$. Self-compatible and usually self-pollinated.

West Falkland. Endemic.

Typus. West Falkland: West Point Island, garden of Manager's house. *Felton* (S).

This species is cultivated in the garden at West Point Island from material originally collected on the mainland adjacent (Roy Cove). It was said to occur at the base of stone runs and on the north side of dry (*Empetrum* ?) ridges, but became severely restricted with the advent of sheep and does not appear to have been seen since the early part of this century. It is placed in Sect. *Axillares* Reiche, together with *C. ciliata* (Ruiz & Pav.) DC. which occurs in western North America and in Argentina south to Provincia Buenos Aires.

Specimens. **WF**: TD40 *Felton in 1910* (K), *Moore 915* (K, LP, LTR, S), *Sladen iii.1952* (BM); TC68 *Vallentin in 1909–11* (K); TC88 *Firmin 6* (K).

2. *Montia* L.

Glabrous annual to perennial herbs. Leaves opposite and decussate, simple; stipules absent. Flowers hermaphrodite. Sepals 2, persistent. Petals 5, united into short tube. Stamens 3–5, united to base of petals. Ovary superior, 1-celled; style with three stigmatic lobes. Fruit a capsule with three valves opening from apex; seeds 1–3.

Cauline leaves many, narrowing to short petiole-like base; flowers 2–3 mm. in diameter; stamens 3 .. .. **1. *fontana***

Cauline leaves 2, broadly connate; basal leaves long-petiolate; flowers 5–8 mm. in diameter; stamens 5 .. .. **2. *perfoliata***

1. *M. fontana* L. 1753, *Sp. Pl.*, p. 87. Blinks

Hooker, 1847, p. 278; Melvill, 1903, p. 6; Wright, 1911, p. 317.

M. linearifolia D'Urv. 1825, *Fl. Is. Mal.*, p. 53.
M. rivularis C.C. Gmel. 1805, *Fl. Bad.*, **1**, p. 301; Skottsberg, 1913, p. 25.

Stems 2–7 cm. in drier habitats, up to 20 cm. or more in water, erect to decumbent, slender, branched. Leaves 4–20 × 1·0–3·5 mm., narrowly spathulate to obovate, entire. Flowers 2–3 mm. in diameter, in small terminal cymes often overtopped by non-flowering branches. Petals unequal, white. Stamens 3. Capsule 2–3 mm., globose, exceeding sepals; seeds usually 3, 1·0–1·5 mm., broadly reniform, shallowly reticulate, shining black. $2n = 20$*. Self-compatible and usually self-pollinated. Fl. XI–I.

Wet or seasonally moist areas beside streams, lakes, etc., usually on mud or wet pebbles, often in water with *Callitriche*; common. 0–*c.* 75 m.

West Falkland, East Falkland. Widespread in temperate regions throughout the world.

Typus. In Europe.

The Falkland Islands plants belong to ssp. *fontana*, distinguished by its shiny, smooth seed testa which lacks tubercles.

Specimens. **WF**: TC40 *Moore 779* (LTR); TD40 *Moore 921* (BIRM, CHR, K, LP, LTR, S), *Skottsberg**; TC58 *Skottsberg**; TC65 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin iii.1910* (K); TC87 *Sladen Fa102/49* (BM); TC99 *Skottsberg**, *Vallentin ii.1911* (MANCH); s. loc. *Nichol* (BM). **EF**: UC65 *Moore 620* (GH, K, LTR, P, S); UC66 *Moore 638* (C, LP, LTR, UC, US); UC76 *Moore 580* (K, LP, LTR); VD00 *Sladen JB120/3* (BM); VC47 *Skottsberg**; s. loc. *Hooker* (BM, K).

2. *M. perfoliata (Donn ex Willd.) Howell 1893, *Erythea*, **1**, p. 38.

Moore and Sladen, 1965, p. 32.

Flowering stems 10–30 cm., erect or ascending. Basal leaves with lamina 1·0–2·5 cm., elliptical to ovate-rhomboid, entire, rather fleshy, the petiole 3–10 cm.; cauline leaves 2, opposite, broadly connate to form concave, suborbicular involucre beneath the terminal, raceme-like inflorescence. Flowers 5–8 mm. in diameter; pedicels about twice as long as sepals. Petals ± equal, white. Stamens 5. Capsule 1·5–2·5 mm., subglobose, shorter than sepals; seed usually 1, *c.* 2 mm., subglobose, shining black.

Disturbed ground near settlements; rare.

West Falkland. Introduced; native of western North America but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC86 *Sladen Fa75/49* (BM).

CARYOPHYLLACEAE

1. *Stellaria* L.

Annual or perennial herbs. Leaves opposite, simple, entire; stipules absent. Flowers hermaphrodite. Sepals 5, free. Petals 5 or fewer, or absent, deeply bifid, free. Stamens 3–10. Ovary superior, 1-celled; styles 3. Fruit a capsule, opening by six valves; seeds many.

Flowers solitary; leaves linear-lanceolate; stamens 10; seeds 0·5–0·9 mm. .. .. **1. *debilis***

Flowers in axillary inflorescences; leaves ovate to elliptical; stamens 3–5(–10); seeds 0·8–1·4 mm. .. .. **2. *media***

1. *S. debilis* D'Urv. 1825, *Fl. Is. Mal.*, p. 52. "Native Chickweed"

Gaudichaud, 1826, p. 137; Hooker, 1847, p. 250; Wright, 1911, p. 316; Skottsberg, 1913, p. 27.

Glabrous perennial. Stems 4–15 cm., decumbent, slender, branched. Leaves (5–)8–20×1·5–3·0 mm., linear-lanceolate, acute. Flowers solitary in axils of upper leaves, pedunculate. Sepals 2·5–5·0×*c.* 1 mm., acute, entire, brownish green, persistent; petals shorter than sepals, white; stamens 10. Capsule 3–4 mm., longer than sepals, ovoid, glabrous; seeds 0·5–0·9 mm. Fl. XII–I.

Moist places beside streams, marshy ground; rare. 0–10 m.

East Falkland. Fuegia, Andean Patagonia north to lat. 46°40′S.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **EF**: UC65 *Skottsberg**; VC47 *Skottsberg**; s. loc. *Hooker 38 and s.n.* (BM, K).

2.** ***S. media (L.) Vill. 1789, *Hist. Pl. Dauph.*, **3**, p. 615. Chickweed

Hooker, 1847, p. 250; Birger, 1907, p. 295; Wright, 1911, p. 316; Vallentin and Cotton, 1921, pl. 12; Moore and Sladen, 1965, p. 32.

Alsine media L. 1753, *Sp. Pl.*, p. 272; D'Urville, 1825, p. 52; Gaudichaud, 1826, p. 137.

Annual. Stems up to 50 cm., decumbent or ascending, branched. Lower leaves 3–20 mm., ovate, acute or acuminate, long-petiolate; upper leaves usually larger, ovate or broadly elliptical, ± sessile. Flowers few or many in axillary inflorescences at or near branch apices; pedicels slender, erect or patent in fruit. Sepals 4–6 mm., ovate-lanceolate, acute to subobtuse, entire, usually glandular-hairy, with narrow membranous margins; petals shorter or slightly longer than sepals, white, sometimes absent; stamens 3–5(–10). Capsule slightly exceeding sepals, ovoid-oblong; seeds 0·8–1·4 mm., with rounded or conical tubercles.

Waste ground near settlements; fairly common.

West Falkland, East Falkland. Introduced; a common ruderal and weed of cultivation throughout most temperate regions of the world; probably introduced in the Southern Hemisphere.

The Falkland Islands plants belong to ssp. *media*, which is distinguished by the upper part of the stems being glabrous or having 1(2) lines of hairs.

Specimens. **WF**: TC06 *Snyder 22.xii.1852* (CU); s. loc. *Vallentin ix.1910* (K). **EF**: VC16 *Sladen JB102/10* (BM); VC47 *Brit. Grahamland Exped. 306b* (BM); s. loc. *Darwin iii.1833* (CGE).

2. *Cerastium* L.

Perennial herbs. Leaves opposite, simple, sessile; stipules absent. Flowers hermaphrodite. Sepals 4–5, free. Petals 4–5, bifid, free. Stamens 5(10). Ovary superior, 1-celled; styles 5. Fruit a capsule, opening by 10(20) short teeth; seeds many.

Petals at least 1·5 times as long as sepals .. .. **1. *arvense***
Petals usually not more than 1·5 times as long as sepals .. .. **2. *fontanum***

1. ***C. arvense*** L. 1753, *Sp. Pl.*, p. 438. Field Mouse-ear Chickweed

Hooker, 1847, p. 251; Melvill, 1903, p. 5; Wright, 1911, p. 317; Skottsberg, 1913, p. 27; Vallentin and Cotton, 1921, pl. 14.

C. lineare auct., non All.; Gaudichaud, 1825, p. 105; 1826, p. 137; D'Urville, 1825, p. 52.

Stems up to 20 cm., loosely matted to caespitose, the sterile shoots procumbent and rooting at lower nodes, the flowering shoots ascending, all ± hairy and glandular. Leaves 6–20×1–3 mm., linear- to elliptic-lanceolate, acuminate to obtuse, entire. Flowers 1–8 in lax, terminal dichasia. Sepals 5–8 mm., ovate- to oblong-lanceolate, acute, glandular-hairy, with scarious margins, often purplish towards apex; petals 7–12 mm., longer than sepals, obovate, bifid to *c.* one-quarter of length, white. Capsule slightly exceeding sepals; seeds *c.* 0·8 mm., tuberculate, dark reddish brown. $2n = 36$. Self-compatible and often self-pollinated. Fl. XI–II.

Many communities, particularly *Cortaderia* grassland; abundant. 0–*c.* 325 m.

West Falkland, East Falkland. Possibly introduced; throughout most temperate regions of the world.

Typus. Europe.

A very variable species. Falkland Islands plants generally seem to belong to ssp. *arvense* but some rather caespitose forms with imbricate leaves and with the flowering stems much exceeding the vegetative stems have been referred to ssp. *strictum* (Haenke) Gaudin.

Specimens. **WF**: TC32 *Moore 680* (C, K, LTR, US); TD40 *Moore 899* (GH, LTR, P, UC); TC41 *Moore 686* (CHR, LTR); TC50 *F. J. Smith 5* (BM); TC68 *Vallentin in 1909–11* (K); TC79 *Moore 823* (BIRM, K, LTR); TC99 *Vallentin in 1909–11* (K), *ii.1911* (MANCH); s. loc. *Snyder 4.iii.1853* (CU), *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol* (BM). **EF**: UC65 *Corner 338* (LTR); UC76 *Moore 575* (LTR); VC08 *Sladen JB116/2* (BM); VC28 *Lesson* (K); VC37 *Booth 11* (LTR), *Hill xi.1902* (K); VC46 *Moore 560* (K, LP, LTR, S), *Killingbeck 100* (BIRM); VC47 *Booth 69* (LTR), *Greene 34* (BIRM, K), *Davies AF26* (K), *Vallentin* (BM); s. loc. *Hamilton JH28* (BM), *Abbott* (K), *Hooker in 1842* (BM, K), *Darwin iii.1834* (CGE), *Bennett 18.ii.1917* (BM).

2. *C. fontanum Baumg. 1816, *Enum. Stirp. Transs.*, **1**, p. 425. Common Mouse-ear Chickweed

C. viscosum L. 1753, *Sp. Pl.*, p. 437; Gaudichaud, 1825, p. 105.
C. vulgatum L. 1755, *Fl. Suec.*, ed. 2, p. 158; D'Urville, 1825, p. 52; Gaudichaud, 1826, p. 137; Hooker, 1847, p. 251; Melvill, 1903, p. 5; Wright, 1911, p. 316.
C. holosteoides Fr. 1828, *Nov. Fl. Suec.*, ed. 2, p. 126; Moore and Sladen, 1965, p. 32.

Usually rather laxly caespitose. Flowering stems up to 20 cm., ascending to erect, the vegetative shoots shorter, procumbent, basal. Leaves 8–20 × 1·5–8·0 mm., elliptic- to ovate-lanceolate, sometimes oblanceolate on vegetative shoots, acute to subobtuse, densely hairy, dark greyish green. Flowers 3–9 in terminal dichasia, which become laxer in fruit. Sepals 5–8 mm., ovate-lanceolate, acute, hairy, with scarious margins; petals *c.* 5–6 mm., not or scarcely longer than petals, rather deeply bifid, white. Capsule about equalling sepals, curved; seeds *c.* 0·8 mm., tuberculate, reddish brown. Self-compatible and often self-pollinated.

Waste ground around settlements, shingle and sand beaches; fairly common.

West Falkland, East Falkland. Introduced; native of Europe but a common weed of temperate regions throughout the world.

The Falkland Islands plants belong to ssp. *triviale* (Link) Jalas, the most widespread form in Europe.

Specimens. **WF**: TC68 *Vallentin in 1909–11* (K); TC84 *Sladen JB121/7* (BM); TC88 *Moore 832* (LTR). **EF**: VC28 *Sladen JB111/1* (BM); VC37 *Booth 27* (LTR); VC46 *Moore 551* (LTR); VC47 *Brit. Grahamland Exped. 297* (BM), *Bennett 9.xii.1917 & 21.xii.1937* (BM); s. loc. *Lechler ix.1850* (K), *Hooker* (BM, K), *Darwin iii.1833* (K).

3. *Sagina* L.

Perennial herbs. Leaves opposite, simple, sessile, connate at base; stipules absent. Sepals 4(5), free. Petals 4(5), free, often minute or absent. Stamens as many as sepals and opposite them. Ovary superior, 1-celled; styles 4(5), alternating with sepals. Fruit a capsule opening to the base by 4(5) valves; seeds many.

1. *S. procumbens L. 1753, *Sp. Pl.*, p. 128. Procumbent Pearlwort

Gaudichaud, 1825, p. 105; 1826, p. 137; D'Urville, 1825, p. 51; Hooker, 1847, p. 247; Melvill, 1903, p. 5; Wright, 1911, p. 316; Skottsberg, 1913, p. 27.

Tufted, with short, non-flowering main stem bearing a dense central leaf-rosette and numerous slender lateral stems up to 20 cm. which ascend from a rooted procumbent base, usually glabrous, rarely minutely ciliate. Leaves 4–15 × *c.* 1 mm., linear-subulate, abruptly mucronate at apex, glabrous. Flowers solitary, terminal; peduncles 4–15 mm., slender, glabrous. Sepals 1–2 mm., ovate, obtuse and cucullate, usually patent, spreading in fruit; petals absent or minute. Capsule *c.* 2·5 mm., longer than sepals; seeds *c.* 0·3 mm., triangular-reniform, papillose, reddish brown. Self-compatible and self-pollinated. Fl. X–IV, perhaps longer. (Fig. 7d)

Waste ground, especially around settlements, but also in disturbed ground in camp, open shingle and sand above high-water mark; common. 0–*c.* 70 m.

West Falkland, East Falkland. Introduced; native of Europe but common in temperate regions throughout the world.

The Falkland Islands plants belong to ssp. *procumbens*.

Specimens. **WF**: TC32 *Moore 805* (GH, LTR, S); TD51 *Sladen JB122/21* (BM); TC68 *Vallentin 109B* (BM, K); TD80 *Vallentin 9.iii.1911* (K, MANCH); TC89 *Moore 825* (K, LTR); TC99 *Vallentin ii.1911* (K, MANCH); UD11 *Sladen Fa67/49* (BM); s. loc. *Nichol* (BM). **EF**: VC16 *Sladen JB102/12* (BM); VC28 *Sladen JB111/2* (BM); VC37 *Booth 17* (LTR), *Hamilton JH34* (BM); VC46 *Moore 550* (K, LP, LTR); VC57 *Sladen Fa2/51* (BM); s. loc. *Chartres* (K), *King* (K), *Hooker 84* (BM, K), *Cunningham ii.1867* (K), *Havers in 1860* (BM).

4. *Colobanthus* Bartl.

Glabrous, perennial herbs, usually with strong tap-root. Leaves opposite, simple, sessile, connate at base; stipules absent. Sepals 4 or 5, free, persistent. Petals absent. Stamens as many as sepals and alternating with them. Ovary superior, 1-celled; styles as many as sepals. Fruit a capsule opening by as many valves as there are sepals; seeds many.

Leaves usually longer than branches, usually more than 10 mm., usually spreading, herbaceous; peduncles usually much-exceeding leaves; sepals herbaceous, with membranous margins, obtuse, sometimes mucronate .. .. **1. *quitensis***

Leaves usually shorter than branches, usually less than 7 mm., imbricate, coriaceous; peduncles equalling or shorter than leaves; sepals stiff and shiny, acuminate .. .. .. **2. *subulatus***

1. *C. quitensis* (Kunth) Bartl. 1831, in Presl, *Reliq. Haenk.*, **2**, p. 13.

C. maclovianus Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 708.
C. crassifolius (D'Urv.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 1, p. 248; Wright, 1911, p. 316; Skottsberg, 1913, p. 28.
Sagina crassifolia D'Urv. 1825, *Fl. Is. Mal.*, p. 51; Gaudichaud, 1826, p. 137.
S. quitensis Kunth 1823, in Humb. Bonpl. & Kunth, *Nov. Gen. Sp.*, **6**, p. 19.

Stems simple or branched to form mats or loosely compacted cushions several centimetres in diameter; branches 0·5–2·0(–5·0) cm., bearing 1–many leafy shoots distally. Leaves (4–)7–25 × 0·5–1·5 mm., linear to linear-triangular, gradually or abruptly contracting to shortly mucronate apex, membranous and weakly sheathing at base, often weakly channelled on upper surface, entire, with thin membranous margin, herbaceous or rarely subcoriaceous, usually spreading. Flowers borne singly at apices of branches; peduncles equalling or usually much-exceeding leaves. Sepals 4 or 5, 2·5–4·0 × 1·0–1·5 mm., ovate or triangular-ovate, obtuse or sometimes acute, often shortly mucronate and cucullate at apex, with membranous margin, herbaceous. Capsule subequalling or somewhat exceeding sepals, the valves obtuse; seeds *c.* 0·5 mm., triangular-reniform, smooth, pale reddish brown with darker narrow keel. $2n = c.$ 80. Self-compatible and usually self-pollinated. Fl. X–XII. (Fig. 7a, b)

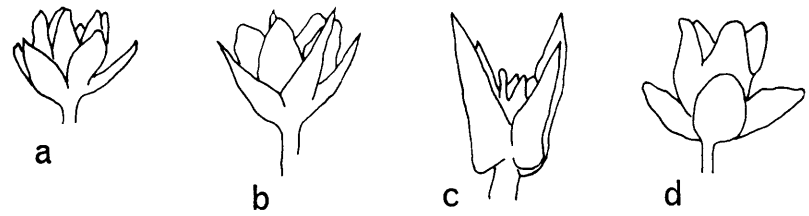


FIGURE 7

Mature capsules and sepals of *Colobanthus* and *Sagina*.
a. *Colobanthus quitensis*, 5-merous form. b. *C. quitensis*, 4-merous form.
c. *C. subulatus*. d. *Sagina procumbens*.
All ×9.

Damp sand, gravel or peat, mud, often in rock crevices on seashore above high-water mark, usually by sea but often in seepage areas and by ponds inland; common. 0–152 m.

West Falkland, East Falkland. Fuegia, east Patagonia, west Patagonia, Andean Patagonia, north along the Andes to lat. 0°, Mexico, South Georgia, South Shetland Islands, South Orkney Islands, Antarctic Peninsula.

Typus. Ecuador: "Crescit in ripa arenosa Rio Blanco, inter Guachucal et Tulcal Quitensium, alt. 1580–1600 hex." *Humboldt and Bonpland* (P).

This species is usually readily distinguished from the following by its long grass-like leaves and prominent peduncles but in exposed habitats it assumes a very caespitose habit and can then be differentiated by its at most weakly channelled leaves and obtuse, sometimes mucronate, sepals.

Specimens. **WF**: TC31 *Moore 722* (K, LTR, P, US); TC42 *Moore 814* (CHR, LTR, UC); TD40 *Moore 922* (K, LP, LTR, S); TC58 *Skottsberg**; TC65 *Skottsberg**; TC66 *Skottsberg**; TC99 *Vallentin i.1911* (K, MANCH); UC27 *Skottsberg**; s. loc. *R. Vallentin in 1901–02* (MANCH). **EF**: UC58 *Moore 659* (BIRM, C, GH, K, LTR); UC65 *Skottsberg**; UC76 *Moore 576* (LTR); VC09 *Sladen Fa51/49* (BM); VC28 *Skottsberg**; VC37 *Booth 54* (LTR); VC46 *Moore 552* (K, LP, LTR, S); VC47 *Booth 16* (LTR), *Skottsberg**; VC57 *Sladen Fa3/51* (BM); s. loc. *Hooker* (K), *Cunningham ii.1867* (K).

2. *C. subulatus* (D'Urv.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 247.

Wright, 1911, p. 316; Skottsberg, 1913, p. 28.

Sagina subulata D'Urv. 1825, *Fl. Is. Mal.*, p. 51; Gaudichaud, 1826, p. 137.

Forming compact cushions 5–25 cm. in diameter; branches (2–)5–11 cm., with many side branches, leafy along all or most of length. Leaves 4–7 × *c.* 0·5–1·0 mm., subulate to narrowly triangular, gradually acuminate, with conspicuously thickened, white, entire margins giving channelled appearance, with midrib prominent beneath, with shiny white basal sheath, shiny and coriaceous, strict or rarely spreading. Flowers borne singly at apices of branches; peduncles shorter than, rarely equalling, leaves. Sepals 4, 3·0–4·5 × 0·5–1·5 mm., narrowly triangular to triangular-ovate or ovate, acuminate and often somewhat cucullate at apex, margin usually thickened, coriaceous and shiny. Capsule *c.* half to two-thirds as long as sepals, the valves obtuse; seeds *c.* 0·5 mm., subreniform, with minute sharp tubercles on keel, pale reddish brown. $2n = c.$ 80. Self-compatible and usually self-pollinated. Fl. X–XII. (Fig. 7c)

Rock crevices, among *Bolax* hummocks, occasionally in open places in *Empetrum* heath; common. 0–610 m.

West Falkland, East Falkland. Fuegia, southern Andean and west Patagonia, South Georgia.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

In the wet habitats, such as seepage areas, where the species occasionally occurs, it assumes a rather lax appearance and may be confused with *Azorella lycopodioides*, which is distinguished by its 3-fid leaves.

Specimens. **WF**: TC31 *Moore 763* (C, LTR, UC), *Moore 724* (CHR, K, LTR, P, US); TC41 *Moore 691* (C, K, LTR); TD40 *Moore 902* (GH, K, LP, LTR); TC68 *Vallentin vi.1910* (K, MANCH), *Nichol iii.1899* (BM); TC99 *Vallentin iii.1911* (K, MANCH). **EF**: UC76 *Moore 597* (BIRM, GH, K, LP, LTR, S); VC28 *Lesson* (K); VC46 *Taylor 204* (BIRM); VC47 *Sladen Fa25/50* (BM), *Hill xi.1902* (K); s. loc. Hooker (BM, K), *Davies BF54* (K), *Antarct. Exped. 1901–04* (BM).

5. *Spergula* L.

Annual herb. Leaves opposite and decussate, simple, bearing conspicuous clusters of leaves on short lateral branches in their axils; stipules present. Sepals 5, free. Petals 5, entire, white, free. Stamens 5–10. Ovary superior, 1-celled; styles 5. Fruit a capsule, opening almost to base by five valves; seeds many.

1. *S. arvensis L. 1753, *Sp. Pl.*, p. 440. Corn Spurrey

Moore and Sladen, 1965, p. 32.

Stems 8–30 cm., weak, ascending, branched near base, glandular-hairy particularly above. Leaves 1–3 cm., linear, obtuse, rather fleshy, channelled beneath, glandular-hairy; stipules *c.* 1–2 mm., scarious, fimbriate, free. Flowers borne in loose, forked, terminal, dichasial panicles; pedicels 0·5–2·0 cm., with small ± scarious basal bracts. Sepals 2–4 × 1·0–1·5 mm., ovate, obtuse, with narrow scarious margins, glandular-hairy, often purplish tinged. Petals obovate, slightly exceeding the sepals, white. Capsule *c.* 5 mm., somewhat exceeding the petals, ovoid to subglobose; seeds 1·0–1·3 mm. in diameter, smooth, with narrow marginal wing, greyish black.

Waste ground near settlements; uncommon.

West Falkland, East Falkland. Introduced; occurs throughout Europe and is widely introduced into cultivated parts of most temperate regions.

Specimens. **WF**: TC88 *Sladen Fa106/49* (BM); s. loc. *Vallentin in 1909–11* (K). **EF**: UC65 *Moore 633* (K, LP, LTR, S).

6. *Spergularia* (Pers.) Presl and J. Presl

Perennial herb. Leaves opposite and decussate, simple; stipules present. Sepals 5, free. Petals 5, entire, white or pink, free. Stamens 10. Ovary superior, 1-celled; styles 3. Fruit a capsule, opening by three valves; seeds many.

1. *S. media* (L.) Presl 1826, *Fl. Sic.*, p. 161. Sand Spurrey

Skottsberg, 1913, p. 28; Vallentin and Cotton, 1921, pl. 13.

Arenaria media L. 1762, *Sp. Pl.*, ed. 2, p. 601; Hooker, 1847, p. 250; Wright, 1911, p. 316.

Stems 1–20 cm., erect or ascending, sometimes decumbent, flattened, glabrous, arising from vertical, woody stock 1–2 mm. in diameter. Leaves 10–30 × 1–2 mm., linear, acuminate or mucronate-obtuse, fleshy, glabrous; stipules 1–3 mm., broadly triangular, fimbriate, scarious, connate to *c.* half their length to surround the node. Flowers borne in lax dichasium; pedicels 2–8 mm. Sepals 3·5–5·0 mm., ovate, obtuse, glabrous, green, often purplish tinged, with scarious margins; petals shorter than to equalling or slightly exceeding sepals, ovate, pink, white towards base. Capsule 5–6 mm., somewhat exceeding sepals, ovoid-conical; seeds 0·6–1·0 mm., yellowish to dark brown, smooth, usually with narrow, entire wing. $2n = 36$. Self-compatible and facultatively self-pollinated. Fl. XI–I.

Mud and sand beside sea, sometimes in coastal rock crevices; local. 0–9 m.

West Falkland, East Falkland. In suitable coastal and inland habitats in temperate regions throughout the world.

Typus. Europe.

Specimens. **WF**: TC06 *Skottsberg**; TD40 *Sladen JB123/10* (BM), *Skottsberg**; TC88 *Sladen Fal13/49* (BM); TC89 *Moore 826* (GH, LTR, S); TC99 *Vallentin iii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC32 *Skottsberg**; UC65 *Moore 634* (K, LP, LTR); VD00 *Sladen JB120/1* (BM); s. loc. *Hooker* (BM, K), *Bennett 1.xi.1937* (BM).

7. *Agrostemma* L.

Annual herbs. Leaves opposite, slightly connate, simple; stipules absent. Calyx a 10-ribbed tube, with five teeth much exceeding petals. Petals 5, long-clawed, free. Stamens 10. Ovary superior, 1-celled; styles 5. Fruit a capsule opening by five teeth; seeds many.

1.** ***A. githago L. 1753, *Sp. Pl.*, p. 435. Corn Cockle

Birger, 1907, p. 295.

Plant covered with long, appressed, greyish hairs; stems 30–100 cm., erect, simple or sparingly branched. Leaves 5–12 cm., linear-lanceolate, acute, entire. Flowers 3–5 cm. in diameter, solitary, terminal. Calyx 3–7 cm., the teeth linear and longer than the ovoid or oblong tube; petals shorter than calyx, obovate, with ± distinct claw, purplish. Capsule exceeding calyx-tube, ovoid; seeds *c.* 3 mm. in diameter, prominently acute-tuberculate, black.

Cultivated ground near settlements; rare.

East Falkland. Introduced; native of eastern Europe but a naturalized weed of cultivation in temperate regions throughout the world.

Specimens. **EF**: VC37 *Gibbs 20.i.1945* (K).

8. *Silene* L.

Dioecious, perennial herbs. Leaves opposite, simple; stipules absent. Calyx tubular, with five teeth shorter than petals. Petals 5, long-clawed, free. Stamens 10. Ovary superior, 1-celled; styles 5. Fruit a capsule opening by ten teeth; seeds many.

1.** ***S. dioica (L.) Clairv. 1811, *Man. Herb.*, p. 415. Red Campion

Moore and Sladen, 1965, p. 32.

Plant softly hairy or sometimes viscid; flowering stems up to 70 cm., erect, the vegetative stems decumbent. Leaves 4–10 cm., broadly ovate, acute to acuminate, the basal with long-winged petiole, the cauline sessile. Flowers 1·5–2·5 cm. in diameter, in terminal dichasia; pedicels 0·5–1·5 cm. Calyx 10–15 mm., the teeth triangular, acute; petals conspicuous, long-clawed, with broadly obovate, deeply bifid limb, rose-pink. Capsule 10–15 mm., globose to broadly ovoid, the teeth recurved; seeds reniform, tuberculate, black.

Cultivated or disturbed ground near settlements; rare.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa.

Specimens. **WF**: TD40 *Sladen 29.v.1949†*. **EF**: VC37 *Gibbs 20.ii.1945* (K).

CHENOPODIACEAE

1. *Chenopodium* L.

Annual or short-lived perennial herbs. Leaves alternate, simple; stipules absent. Perianth of 4–5 equal segments. Stamens (4)5, free, opposite the perianth-segments. Ovary superior, 1-celled; stigmas 2. Fruit an achene; seed large, invested in persistent, thin, membranous pericarp.

1. ***C. macrospermum*** Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 341. "Goosefoot"

Wright, 1911, p. 327; Skottsberg, 1913, p. 25; Vallentin and Cotton, 1921, pl. 50; Aellen, 1929, p. 42.

Plant glabrous, fleshy; stems 7–20 cm., procumbent to ascending or erect, often branched, flattened and channelled. Leaves with lamina 1–3 × 0·7–2·5 cm., ovate to rhomboid or broadly triangular, obtuse, cuneate at base, subentire to sinuate or coarsely and irregularly serrate; petiole 0·5–1·5 cm., usually winged. Flowers in small cymes (glomerules) crowded into a usually branched, leafy inflorescence. Perianth 1–2 mm., green, the segments broadly ovate, obtuse or acute, fused to halfway or more, or only at base in lateral flowers. Seeds 1·2–2·0 mm. in diameter, orbicular, compressed, shallowly reticulate, shiny, reddish brown, borne vertically. $2n = 36$. Self-compatible. Fl. XII–I.

Sand and shingle beaches at or about high-water mark; locally common. 0–1 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, north along the Andes to *c.* lat. 20°S., Paraguay, Mexico, California.

Typus. East Falkland: Berkeley Sound, iii.1833. *Darwin* (CGE!).

Aellen (1929) referred Falkland Islands and Fuegian material to ssp. *crassicaule* (Moq.) Aellen (correctly ssp. *macrospermum*) but gave no indication of the characters differentiating it from ssp. *halophilum* (Phil.) Aellen, to which is referred all other material.

Specimens. **WF**: TD40 *Skottsberg**; TC88 *Moore 837* (LTR, US), *Hamilton 52* (BM); TD90 *Vallentin ii. & iii.1911* (K, MANCH); s. loc. *Sladen Fa112/49* (BM), *Blake in 1925–26* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); UC32 *Skottsberg**; UC65 *Moore 629* (K, LP, LTR, S); VC09 *Skottsberg**; s. loc. *Darwin iii.1834* (CGE, K), *Hooker* (BM, K).

2. *Suaeda* Forsk. ex Scop.

Gynodioecious, glabrous shrubs. Leaves alternate; stipules absent. Perianth of 5(6) equal segments. Stamens 5, free, opposite the perianth-segments. Ovary superior, 1-celled; stigmas 4–5. Fruit an achene; seeds large.

1. ***S. argentinensis*** Soriano 1942, *Revta argent. Agron.*, **9**, p. 348. "Shrubby Seablite"

S. fruticosa auct., non Forsk.; Moore and Sladen, 1965, p. 30.

Stems 17–90 cm., up to 6 mm. in diameter, erect, much-branched, very leafy. Leaves 4–11 × 1·2–2·5 mm., linear to somewhat oblanceolate, obtuse, entire with broad scarious margin, sessile, rather fleshy, dark green. Flowers *c.* 6 mm. in diameter, solitary and sessile in axils of upper leaves; bracts 1·5–2·0 mm., subligulate-lanceolate. Perianth-segments *c.* 3·0 × 2·5 mm., ovate-cochleariform, 3-nerved, ± membranous and pinkish, with incurved apex. Seed 2·0–2·5 mm., round-reniform, compressed, smooth, black, vertical.

Sandy shores above high-water mark and open, clay, coastal cliffs; rare. 0–4·5 m.

West Falkland. East Patagonia north to lat. 38°40'S.

Typus. Argentina: Buenos Aires; Bahía Blanca, vii.1942. *Zaffanella 48.*

Specimens. **WF**: TD80 *Pole-Evans 21.iii.1965* (LTR), *Young 9* (LTR), *Sladen s.n.* (BM).

An undetermined species of *Atriplex* L. was recorded in cultivated ground near Port Stanley by Birger (1907, p. 294). No such specimen can be traced at either Stockholm or Uppsala, where his material was deposited, and the record is perhaps based solely on a field observation. The genus has not otherwise been reported from the Falkland Islands.

RANUNCULACEAE

1. *Caltha* L.

Glabrous, perennial herbs with thick, fleshy rhizome. Leaves alternate, simple or lobed; lamina with erect or incurved appendages from base, which may be fused with lamina to appear as outgrowths from its upper surface; stipules absent. Flowers actinomorphic, hermaphrodite, hypogynous, with all parts spirally arranged, solitary, on short, thick peduncles. Perianth-segments 5–8, yellow. Stamens 8–many, free. Carpels 2–many, free. Fruit a head of three or more 5- to 6-seeded follicles.

The Falkland Islands species, together with all others occurring in the Southern Hemisphere, belong to the section *Psychrophila* DC., as defined by Hill (1918, p. 421) to include all species with leaf-appendages.

Leaves ovate or triangular-ovate, simple, with appendages infolded from base; stamens 30 or more .. .. **1. *sagittata***

Leaves obovate to elliptical, simple or 3-fid, with appendages arising from lamina on either side of midrib; stamens 8–10 .. .. **2. *appendiculata***

1. *C. sagittata* Cav. 1799, *Icon. Descr.*, **5**, p. 8.

Gaudichaud, 1825, p. 105; 1826, p. 136; D'Urville, 1825, p. 49; Hooker, 1847, p. 228; Melvill, 1903, p. 5; Birger, 1907, p. 294; Wright, 1911, p. 314; Skottsberg, 1913, p. 29; Hill, 1918, p. 430; Vallentin and Cotton, 1921, pl. 6; Lourteig, 1952, p. 426.

Rhizome horizontal to ascending, up to 15(–25) mm. in diameter, often divided distally, covered with leaf-sheaths, bearing leaves towards the apex. Leaves with lamina (0·7–)1·2–5·0(–9·0)×1–3(–5) cm., ovate to ovate-triangular, obtuse or retuse, cordate at base, irregularly undulate-serrate; appendages as basal folds, triangular to triangular-ovate, up to half as long as lamina, rarely more; petiole (0·5–)1–15 (–20)×*c.* 0·3 cm., with prominent amplexicaul, triangular-ovate, scarious, basal sheaths. Flowering peduncles 0·5–2·0 cm., longer in fruit. Perianth-segments 5–8, 5–15×2–8 mm., ovate to oblong, obtuse, subequal. Stamens 30–80; carpels 50–85, rarely fewer. Follicles 5–10×*c.* 3 mm., ± oblong, compressed, with straight or somewhat curved, terminal beak *c.* 1·5 mm.; seeds 5, *c.* 2 mm., ovoid-ellipsoid, smooth, black. $2n = 48$. Self-compatible. Fl. X–XI.

Wet peat, sand, shingle and mud beside sea and fresh water; common. 0–610 m.

West Falkland, East Falkland. Fuegia, Andean and west Patagonia, north along the Andes to lat. 31°S. and again at lat. 16°S.

Typus. West Falkland: Port Egmont. *Née* (MA, P).

This species varies considerably in size, the largest forms indicated above being found beside or in streams, often associated with *Eleocharis melanostachys* and *Epilobium cunninghamii*. (Plate Vd)

Specimens. **WF**: TC65 *Skottsberg**; TC69 *Vallentin iii.1910* (K, MANCH); TC78 *Vallentin xii.1909* (K), *i.1911* (MANCH); TC87 *Vallentin ii.1910* (K); TC89 *Vallentin iii.1911* (K); TC96 *Vallentin 67* (BM); TC99 *Vallentin iii.1911* (K); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Vallentin 104* (BM). **EF**: UC73 *Skottsberg**; VC36 *Skottsberg**; VC37 *Booth 62* (LTR); VC46 *Holdgate 621* (BIRM); VC47 *Moore 1253* (LP, LTR), *Cunningham 23.i.1868* (K), *Hill xi.1902* (K), *Skottsberg**; s. loc. *Hooker* (BM, K), *Bennett 3.xi.1937* (BM), *9.xii.1917* (BM).

2. *C. appendiculata* Pers. 1806, *Syn. Pl.*, **2**, p. 107.

Gaudichaud, 1825, p. 105; 1826, p. 136; D'Urville, 1825, p. 49; Hooker, 1847, p. 228; Birger, 1907, p. 281; Wright, 1911, p. 315; Skottsberg, 1913, p. 28; Hill, 1918, p. 431; Lourteig, 1952, p. 422.

Rhizome ascending to erect, up to 8 mm. in diameter, often divided distally, covered with leaf-sheaths, bearing leaves towards apex. Leaves with lamina 6–9(–15)×2–7 mm., obovate to oblong or elliptical, simple or 3-fid, retuse or rarely obtuse, cuneate at base, irregularly undulate or crenate; appendages arising from upper surface of lamina near the base on either side of midrib, up to as long as the lamina, obovate to oblong, often absent in upper leaves; petiole 0·4–2·0×*c.* 0·1 cm., with prominent, amplexicaul, ovate to triangular-ovate, scarious, basal sheaths. Flowering peduncles up to *c.* 3 mm., longer in fruit, Perianth-segments 5, 5–8(–10)×1·5–3·0 mm., oblong to linear-lanceolate or lanceolate, acute or obtuse. subequal. Stamens 8–10(–12); carpels 3–5(–8). Follicles 4–6×*c.* 3 mm., ovate to ovate-triangular, com-

pressed, with curved terminal beak *c.* 1 mm.; seeds 3–4, 1·0–1·3 mm., ovoid-ellipsoid, with raised margin, smooth, black. $2n = 48$. Self-compatible. Fl. X–XI.

Wet ground beside fresh water, normally present in *Astelia pumila* association.

West Falkland, East Falkland. Fuegia, Andean and west Patagonia, north to lat. 36°S. in Chile.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

Specimens. **WF**: TC42 *Moore 797* (LTR, S); TC50 *Smith 54* (BM); TC51 *Moore 789* (K, LP, LTR). **EF**: UC77 *Corner 350* (LTR); VC16 *Sladen JB108/2* (BM); VC28 *Gaudichaud* (K); VC47 *Sladen Fa24/50* (BM), *Booth 61* (LTR), *Hamilton 46* (BM), *Hill xi.1902* (K); s. loc. *Hooker 66* (BM, K).

2. *Ranunculus* L.

Annual or perennial herbs, sometimes rhizomatous. Leaves alternate, simple or variously divided; stipules absent. Flowers actinomorphic, hermaphrodite, hypogynous, solitary or in cymose panicles. Perianth of two whorls; outer segments (sepals) 3–5(–6), free, green, yellowish or brown; inner segments (petals) 3 or 5(–7), with nectariferous pores or scales near base, yellow or rarely whitish. Stamens 5–6 or many, free. Carpels 5–10 or many, free. Fruit a head of achenes, each with the style persisting as a glabrous beak.

1. Sepals and petals equal in number 2
   Sepals and petals differing in number 7
2. Sepals and petals 3(4) .. .. **1. *pseudotrullifolius***
   Sepals and petals 5(6) 3
3. Lamina obovate, 3- to 5-lobed at apex, cuneate at base .. .. **2. *trullifolius***
   Lamina triangular-ovate to suborbicular in outline, variously divided, cordate at base .. 4
4. Petals 7 mm. or more .. .. **8. *repens***
   Petals 6 mm. or less 5
5. Plant glabrous; lamina usually biternate .. .. **5. *biternatus***
   Plant pubescent; lamina 3- to 4-fid, the segments often divided.. 6
6. Petals, nectaries and achenes pubescent .. .. **7. *sericocephalus***
   Petals and nectaries glabrous; achenes glabrous or subpubescent .. .. **6. *maclovianus***
7. Lamina entire or slightly lobed; sepals 3 .. .. **3. *hydrophilus***
   Lamina 3-partite; sepals 4–5.. .. .. **4. *acaulis***

Species **1–3** vary considerably in stature, depending upon habitat, the most luxuriant, long-petiolate forms occurring in water.

1. *R. pseudotrullifolius* Skottsb. 1913, *K. svenska VetenskAkad. Handl.*, **50**, No. 3, p. 32.

Lourteig, 1952, p. 469.

R. dusenii Lourteig 1952, *Darwiniana*, **9**, p. 468.

R. caespitosus Dusén 1900, *Wiss. Ergebn. schwed. Exped. Magellansländ*, **3**, p. 185; Birger, 1907, p. 294; Skottsberg, 1913, p. 30.

Glabrous perennial; stems up to 20 cm., prostrate, branched, rooting at nodes, bearing rosettes of leaves and often flowers at most nodes. Leaves with lamina 0·5–3·5 × 0·4–3·5 cm., linear to ovate, oblong or obovate, cuneate to truncate or rarely shallowly cordate at base, entire, simple or scarcely to deeply 3-lobed, the lateral lobes usually shorter and sometimes divided; lobes with small apical glands; petiole 0–14(–24) cm., often narrowly winged, widening at base into amplexicaul, ovate, scarious sheath. Flowers axillary, solitary or in 2- to 3-flowered cymes, sessile or with peduncle up to 1 cm. Sepals 3(4), 2–5 × 1–3 mm., ovate or suborbicular, obtuse, green. Petals 3(4), 2–5 × 1–3 mm., linear to oblanceolate or subspathulate, obtuse. Stamens 5–13; carpels many. Achenes 2·0–3·5 mm., asymmetrically ovoid to obovoid, somewhat compressed; beak *c.* 1 mm., slender, curved. $2n = 48$. Self-compatible and sometimes self-pollinated. Fl. XI–II. (Fig. 8f)

In fresh water or on damp ground, sometimes submerged, usually where vegetation cover is sparse; uncommon. 2–*c.* 5 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 50°30'S., Iles de Kerguelen.

Typus. East Falkland: Rabbit Cove. *Skottsberg* (S).

This species varies greatly in response to habitat conditions. The very caespitose forms were formerly tentatively recognized as *R. dusenii* (*R. caespitosus*), but cultivation experiments (Moore, unpublished) have shown them to be no more than a reversible, environmentally induced response to dry conditions.

Specimens. **WF**: TD40 *Moore 910* (K, LTR), *Skottsberg 71* (K); TC78 *Vallentin* (K); TD80 *Skottsberg**; TC87 *Sladen Fa101/49* (BM). **EF**: UC32 *Skottsberg 930* (K); VC37 *Skottsberg**; VC47 *Skottsberg**.

2. *R. trullifolius* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 226.

Wright, 1911, p. 314; Skottsberg, 1913, p. 34; Vallentin and Cotton, 1921, pl. 4; Lourteig, 1952, p. 495; Moore and Sladen, 1965, p. 31.

Perennial; stems up to 30 cm., prostrate, occasionally branched, glabrous, rooting at nodes, bearing rosettes of leaves and often flowers at most nodes. Leaves with lamina (2–)5–20×(2–)3–10 mm., obovate to oblong, rarely suborbicular, cuneate at base, with usually 3–5 unequal lobes at apex, rarely simple, often purplish tinged; margin entire or weakly undulate, often sparsely ciliate; petiole 0·5–12(–14) cm., usually winged, enlarged at base into amplexicaul, ovate, scarious sheath. Flowers solitary; peduncles up to 5 cm., erect. Sepals 5, 3–5×1–2 mm., ovate to oblong or obovate, obtuse, green or golden-brown tinged, glabrous, reflexed. Petals 5, 3·5–6·0×1·0–1·5(–2) mm., asymmetrically obovate to oblong-spathulate, obtuse. Stamens *c.* 12; carpels 10–*c.* 15. Achenes 2–3×1·5–2·0 mm., asymmetrically ovoid to subglobose, somewhat compressed, narrowly marginate; beak up to *c.* 1 mm., stout, curved. $2n = 32$. Self-compatible. Fl. XII–II. (Fig. 8g)

Shallow pools or open mud and wet sand beside streams and ponds; common. 3–305 m.

West Falkland, East Falkland. Andean Patagonia north to lat. 41°S., Chiloe, Andes *c.* lat. 30–35°S.

Typus. East Falkland: St. Salvador Bay, 1843. *Hooker* (K!)

Specimens. **WF**: TC42 *Moore 796* (LTR), *Moore 817* (K, LTR); TC68 *Vallentin 8.i.1911* (K); TC87 *Sladen Fa101/49* (BIRM, BM). **EF**: UC68 *Moore 673* (CHR, K, LTR, UC); UC74 *Skottsberg**; UC76 *Moore 573* (K, LTR, US); VC18 *Hooker 31* (K); VC36 *Skottsberg 116* (K); VC47 *Moore 525* (BIRM, GH, K, LP, LTR, P, S), *Booth 26* (LTR); s. loc. *Hooker* (BM).

3. *R. hydrophilus* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 105.

D'Urville, 1825, p. 48; Gaudichaud, 1826, p. 136, 475; Hooker, 1847, p. 226; Wright, 1911, p. 314; Skottsberg, 1913, p. 31; Vallentin and Cotton, 1921, pl. 3; Lourteig, 1952, p. 520; Moore and Sladen, 1965, p. 30.

Glabrous perennial (? annual sometimes); stems up to 10 cm., prostrate, occasionally branched, rooting at nodes, bearing rosettes of leaves and often flowers at most nodes. Leaves with lamina 3–10×2–8 mm., suborbicular to ovate or elliptical, obtuse to subacute, cuneate at base, entire or weakly undulate to crenate, rarely weakly serrate-crenate; petiole 0·6–4·0(–6) cm., usually narrowly winged, enlarged at base into ovate, scarious sheath. Flowers solitary; peduncles 0·2–0·9 cm., ascending or erect, shorter than petioles. Sepals 3, 1·2–2·0×0·5–1·5 mm., ovate, obtuse or subacute, cucullate, greenish gold tinged with pink, glabrous, reflexed. Petals 3–7, 1·2–2·0×*c.* 0·5–1·0 mm., oblong to oblanceolate or spathulate, obtuse. Stamens 5–8(–10); carpels 10–*c.* 20. Achenes *c.* 1·5×1·0 mm., asymmetrically ovoid, slightly compressed; beak *c.* 0·1 mm. $2n = 32$*. Fl. XII–I. (Fig. 8c)

In shallow pools or on mud and wet sand, sometimes in *Sphagnum* hummocks or wet *Juncus scheuzerioides* turf; not common.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 37°S., Chiloe, southern Chile (*c.* lat. 39°50'S.).

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC69 *Vallentin iii.1910* (K, MANCH); TC78 *Blake in 1925–26* (MANCH); TC88 *Sladen Fa91/49* (BM); TC89 *Vallentin in 1909–11* (K, MANCH); TC99 *Vallentin 26.xii.1910* (K, MANCH), *in 1909–11* (K). **EF**: UC43 *Skottsberg**; UC65 *Skottsberg**; UC76 *Moore 572* (BIRM, CHR, GH, K, LP, LTR, P, S); VC28 *Gaudichaud* (K); VC47 *Hill xi.1902* (K); s. loc. *Hooker 36* (K).

4. *R. acaulis* Banks & Sol. ex DC. 1817, *Reg. Veg. Syst. Nat.*, **1**, p. 270.

Skottsberg, 1913, p. 29; Lourteig, 1952, p. 542.

R. biternatus auct., non Sm.; Vallentin and Cotton, 1921, pl. 1, figs. 1, 2.

R. skottsbergii Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 704.

Glabrous perennial with prostrate, usually underground stems up to 20 cm. or more, rooting at nodes which bear flowering rosettes of leaves. Leaves with lamina 4–7×4–9 mm., triangular-ovate to suborbicular in outline, 3-foliolate to deeply 3-fid, cordate at base; segments obovate to oblong-elliptical, entire or unequally 2- to 3-lobed or toothed; petiole up to 3 cm., narrowly winged, enlarged at base into ovate, scarious sheath. Flowers solitary; peduncle 0·5–2·0 cm., erect. Sepals 5, 2·5–3·0×1·5–2·5 mm., ovate to suborbicular or obovate, obtuse, membranous, yellowish brown. Petals (5–)6–8, 3·0–5·5×1·0–2·5 mm., irregularly obovate to oblong or spathulate, obtuse. Stamens *c.* 14–18; carpels *c.* 13–20. Achenes 2–3× *c.* 2 mm., asymmetrically ovoid; beak *c.* 1 mm., straight. $2n = 48$. Fl. XI–II. (Fig. 8a)

On damp coastal sand and gravel above high-water mark; rare. *c.* 3 m.

West Falkland, East Falkland. Southern Chile *c.* lat. 39–42°S., New Zealand, Stewart, Chatham and Auckland Islands.

Typus. New Zealand; near Opuragi, 1769–70. *Banks and Solander* (BM!).

This species is most likely to be confused with *R. biternatus*, from which it differs in having underground stems, leaves at most 3-foliolate, and a generally greater number of petals.

Specimens. **WF**: TD40 *Moore 916* (BIRM, C, CHR, GH, K, LP, LTR, P, S, SGO, UC, US), *Skottsberg**; TC65 *Skottsberg 97* (K); TC79 *Moore 822* (K, LTR, P, S, UC), *Firmin 43* (K); TC99 *Vallentin ii.1911* (K, MANCH), *xii.1910* (K, MANCH).

5. *R. biternatus* Sm. 1814, in Rees, *Cyclop.*, **29**, No. 48.

Hooker, 1847, p. 224; Melvill, 1903, p. 5; Birger, 1907, p. 285; Wright, 1911, p. 314; Skottsberg, 1913, p. 29; Vallentin and Cotton, 1921, pl. 1, figs. 3–11; Lourteig, 1952, p. 497.

R. exiguus D'Urv. 1825, *Fl. Is. Mal.*, p. 48; Gaudichaud, 1826, p. 136.

Glabrous perennial; stems up to 40 cm. or more, prostrate, sometimes branched, rooting at the nodes from which arise one or more leaves and sometimes flowers. Leaves with lamina 3–25×4–20 mm., triangular-ovate to reniform in outline, 3-fid to -foliolate or biternate, cordate at base; ultimate segments 2- to 5-lobed or dentate; petiole up to 8 cm., enlarged at base into ovate-oblong, scarious sheath. Flowers solitary, axillary, rarely in 2-flowered cymes; peduncle 1–3 cm., usually erect. Sepals 5, 3·5–4·0× 1·5–2·5 mm., ovate to obovate, obtuse, brownish green, reflexed. Petals 5, *c.* 4×1–2 mm., oblong to obovate, spathulate or linear-spathulate, obtuse. Stamens 7–12(–15); carpels 10–many. Achenes 2–3× *c.* 2 mm., asymmetrically ovoid to subglobose, weakly marginate, often reddish; beak *c.* 1 mm., somewhat curved. $2n = 48$. Self-compatible, frequently self-pollinated. Fl. XI–I. (Fig. 8b)

Moist places beside sea and inland; common. 0–610 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat 50°S., west Patagonia, southern Chile (lat. 41°30′S.), South Georgia, Iles Crozet, Iles de Kerguelen, Ile Amsterdam, Macquarie Island.

Typus. Chile: Straits of Magellan, 1767–68. *Commerson* (LINN. Herb. Smith).

This species varies most conspicuously in the degree of leaf-dissection and in the shape of the ultimate segments. These differences cannot be correlated with habitat or geographical factors and remain largely constant in cultivation, suggesting that they reflect the inbreeding habit of the species.

Specimens. **WF**: TC31 *Moore 757* (K, LTR, US); TC32 *Moore 806* (K, LTR, P); TC34 *Skottsberg**; TD40 *Moore 898* (K, LTR, UC), *Moore 919* (BIRM, LTR); TC66 *Skottsberg**; TC68 *Vallentin i–iii.1910* (K, MANCH); TC99 *Vallentin vii. 1911* (K), *ii.1912* (MANCH); s. loc. *Firmin xi.1896* (K), *R. Vallentin in 1901–02* (MANCH), *Nichol in 1899* (BM), *Vallentin* (BM). **EF**: UC32 *Skottsberg**; UC65 *Moore 618* (LTR), *Skottsberg**; UC76 *Moore 579* (LTR, S); UC77 *Moore 591* (C, GH, K, LTR); VC09 *Sladen Fa54, 56/49* (BM); VC28 *Lesson* (K); VC36 *Skottsberg**; VC37 *Moore 500* (LTR), *Cunningham i.1868* (K); VC47 *Moore 541* (K, LP, LTR), *Sladen Fa23/50* (BM), *Skottsberg 102* (BM); VC48 *Sladen Fa7/49* (BM), *Holdgate 615* (BIRM); s. loc. *Hooker* (BM, K).

6. *R. maclovianus* D'Urv. 1825, *Fl. Is. Mal.*, p. 48.

Gaudichaud, 1826, p. 136; Hooker, 1847, p. 225; Birger, 1907, p. 284; Wright, 1911, p. 314; Skottsberg, 1913, p. 32; Vallentin and Cotton, 1921, pl. 2; Lourteig, 1952, p. 502.

R. parviflorus ? auct., non L.; Gaudichaud, 1825, p. 5.

Perennial, white- or yellowish-pilose; stems 0·5–*c.* 2·0 cm., erect or ascending, sometimes divided, bearing dense basal rosette of leaves. Leaves with lamina 3–25×5–25 mm., suborbicular to somewhat reniform in outline, usually deeply 3-fid, cordate at base; segments irregularly 2- to 3(–5) -dentate or -lobed, sometimes entire when young, obtuse to acute; petiole 0·8–7·0 cm., enlarged at base into ovate, dark

brownish, scarious sheath. Flowers solitary or in 2- to 3-flowered cymes; peduncles up to 3 cm., erect. Sepals 5, 2–3 × *c.* 1 mm., unequal, ovate to ovate-lanceolate, obtuse to acute, membranous, brownish, pilose, reflexed. Petals 5, 3·0–3·5 × 1·0–1·5 mm., spathulate, the limb ovate to suborbicular, obtuse, glabrous or sometimes pilose on back. Stamens 7–11; carpels many. Achenes 2·0–2·5 × 1·0–1·5 mm., asymmetrically ovoid to oblong-ovoid, somewhat compressed, marginate and often narrowly winged on one side, glabrous or sparsely pilose on keel; beak *c.* 0·75 mm., triangular, slightly curved. $2n = 48$. Self-compatible. Fl. XI–XII. (Fig. 8d)

Moist places, especially in *Cortaderia* association, but also on open coastal slopes; fairly common. 0–183 m.

West Falkland, East Falkland. Fuegia, southern Chile (*c.* lat. 40°S.).

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville 91* (P).

Specimens. **WF**: TC32 *Moore 809* (K, LTR); TC68 *Vallentin in 1909–11* (K); TC88 *Vallentin xi.1910–iii.1911* (K, MANCH); TC99 *Vallentin ii.–iii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH), *Vallentin* (BM), *Nichol* (BM). **EF**: UC65 *Moore 632* (K, LTR, S), *Moore 616* (LP, LTR), *Skottsberg**; VC28 *Skottsberg**; VC47 *Skottsberg**; s. loc. *Hooker* (BM, K).

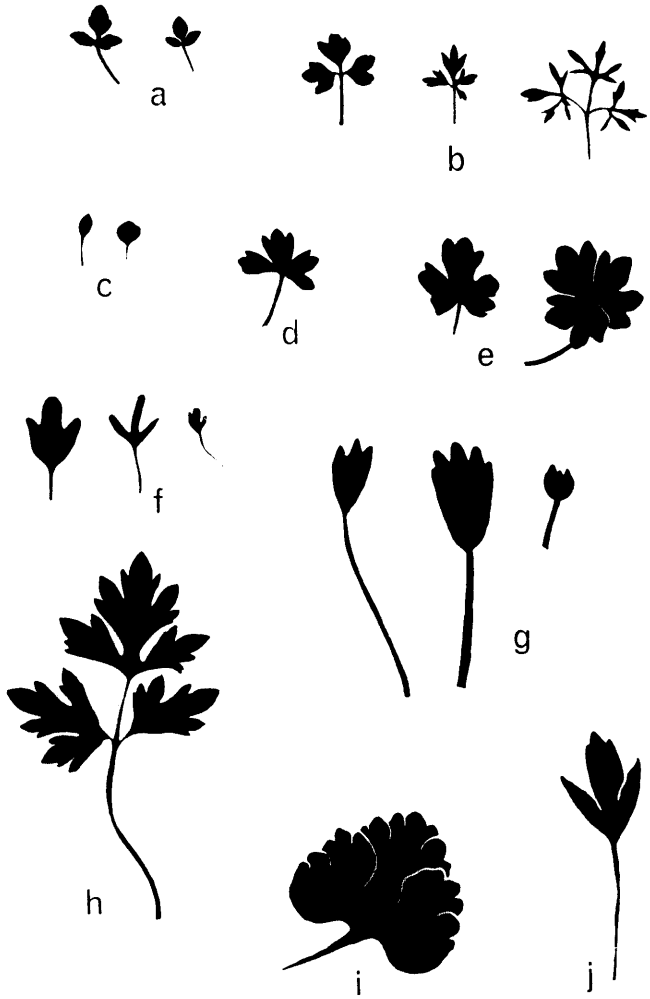


FIGURE 8

Leaf outlines of *Ranunculus* and *Hamadryas*.

a. *Ranunculus acaulis.* b. *R. biternatus.*
c. *R. hydrophilus.* d. *R. maclovianus.*
e. *R. sericocephalus.* f. *R. pseudotrullifolius.*
g. *R. trullifolius.* h. *R. repens.*
i. *Hamadryas argentea*, glabrous form. j. *H. argentea*, typical form.

All × $\frac{6}{7}$.

7. *R. sericocephalus* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 225.

Birger, 1907, p. 291; Wright, 1911, p. 314; Skottsberg, 1913, p. 33; Lourteig, 1952, p. 500.

Similar to *R. maclovianus* but usually smaller and more densely pilose in all parts, the leaves often hispid; flowers always solitary; peduncles up to 1 mm.; petals densely pilose on back; achenes densely pilose on keel and dorsal part, marginate but not winged. $2n = 48$. Self-compatible, at least facultatively self-pollinated. Fl. XI–XII. (Fig. 8e)

Usually in dry *Blechnum penna-marina* or *Empetrum* heath near coast but sometimes on wet pebbles or gravel beside inland fresh water; fairly common. 0–610 m.

West Falkland, East Falkland. Fuegia, northern shores of the Straits of Magellan.

Typus. East Falkland: Berkeley Sound, 1843. *Hooker* (K!).

It is possible that this species should not be differentiated from *R. maclovianus*. The often smaller size and denser indumentum may reflect the preference for drier habitats of *R. sericocephalus* but it retains its indumentum characteristics even in moist habitats and, since Hooker observed the two species growing together, they are retained as separate species here.

Specimens. **WF**: TC32 *Moore 808* (C, LTR, US); TD40 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin 27.xi.1910* (BM, MANCH); TC87 *Sladen Fa90/49* (BM); TC88 *Vallentin iii.1911* (K). **EF**: UC74 *Skottsberg**; UC77 *Moore 590* (BIRM, GH, K, LP, LTR, S); VC36 *Skottsberg**; VC47 *Hamilton 36* (BM), *Hill xi.1902* (K); s. loc. *Hooker* (BM, K).

8. *R. repens L. 1753, *Sp. Pl.*, p. 554. Creeping Buttercup

Moore and Sladen, 1965, p. 32.

Glabrous or somewhat pubescent perennial with prostrate overground leafy stems rooting at the nodes, and with erect leafy flowering stems. Leaves with lamina *c.* 25–50 × 30–50 mm. or more, triangular-ovate in outline, 3-fid to 3-foliolate, cordate at base; segments usually deeply cut into three dentate lobes, the middle segment long-stipitate; petiole up to 15 cm., enlarged at base into amplexicaul sheath. Flowers solitary or in cymose panicles; peduncles hairy. Sepals 5, 6·5–8·0 × 3·0–4·5 mm., ovate, acute, hairy, green, not reflexed. Petals 5–6, 7–13 × 7–14 mm., obovate to suborbicular, bright yellow. Stamens many; carpels many. Achenes *c.* 3 × 2 mm., subglobose, compressed, marginate, glabrous; beak *c.* 1·5 mm., stout, curved. (Fig. 8h)

Waste ground near settlements and in artificial pastures; locally common.

West Falkland,? East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions throughout the world.

Specimens. **WF**: TC88 *Sladen Fa115/49* (BM).

3. *Hamadryas* Comm. ex Juss.

Dioecious, perennial herbs. Leaves basal, lobed; stipules absent. Flowers actinomorphic, hypogynous, solitary or in few-flowered cymes. Sepals 5–6, free. Petals 10–15, with nectaries near base, free. Stamens many, free. Carpels many, free. Fruit a head of achenes, with the style persisting as a beak.

1. *H. argentea* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 227.

Wright, 1911, p. 314; Skottsberg, 1913, p. 35; Vallentin and Cotton, 1921, pl. 5; Lourteig, 1952, p. 437.

Short, stout, vertical or ascending rhizome covered with dried leaf-bases, bearing 1–5(–7) leaves at apex. Leaves with lamina 9–30(–50) × 9–30(–40) mm., ovate-reniform to obovate in outline, 3-lobed to 3-fid, cuneate at base, densely silver-sericeous on both surfaces, rarely glabrous; segments entire or, especially the terminal one, 3-dentate to 3-lobed, and these lobes sometimes lobed or crenate, acute or obtuse; petiole *c.* 1–14 cm., silver-sericeous, hairy or glabrous, enlarged at base into ovate, brown, scarious sheath. Flowers 2–4; peduncle up to *c.* 20 cm., erect; pedicels 3–15 mm. Sepals 6·0–8·5 × 2·5–3·5 mm., somewhat unequal, oblong to obovate, acute or subobtuse, greenish brown or dull bronze; petals (10–)15, in male flowers 8–13 × 1·0–1·5 mm., linear-lanceolate to linear-spathulate, acute, yellowish brown to reddish, dorsally pilose, rarely glabrous; similar in female flowers but smaller, *c.* 8·0 × 1·5 mm., and elliptic-spathulate. Achenes *c.* 1·5 × 1·0 mm., asymmetrically ovoid or ovoid-fusiform; beak *c.* 1 mm., curved. $2n = c.\ 92$. Fl. XI–XII. Both sexes produce nectar and are probably cross-fertilized by Diptera. (Fig. 8i, j)

Open soil or with grasses, e.g. *Hierochloë redolens*, on coastal slopes; on open soil or with *Bolax* cushions at higher elevations; not common. 6–615 m.

West Falkland, East Falkland. Endemic.

Typus. Falkland Islands: among grass. *Sulivan* (K!).

This species is typically covered with silvery-white or golden hairs. One collection, from a moist rock crevice at Port Stephens, is completely glabrous, although otherwise identical with material from elsewhere. Glabrous and sericeous plants maintained their differences after 3 years' cultivation in the greenhouse.

Specimens. **WF**: TC31 *Moore 732* (K, LP, LTR); TC66 *Skottsberg**; TC68 *Vallentin 18.xi.1909* (MANCH), *s.n.* (BM); TC78 *Vallentin 10.x.1910* (K, MANCH); TC88 *Moore 891* (BIRM, GH, K, LP, LTR, S), *Skottsberg**; TC99 *Vallentin i.1911* (MANCH); UC27 *Skottsberg**; s. loc. *Firmin 51* (K), *Nichol in 1899* (BM). **EF**: VC47 *Hill xi.1902* (K); s. loc. *Hooker* (BM, K), *Hennis in 1914* (BM).

DROSERACEAE

1. *Drosera* L.

Perennial, insectivorous herbs. Leaves all basal, simple; upper surface and margin of lamina covered with long, red, gland-tipped, motile hairs, which entrap and digest insects; stipules absent. Flowers actinomorphic, hermaphrodite. Sepals 5, united at base. Petals 5, free. Stamens 5, free. Ovary superior, 1-celled; styles 3–5, deeply bifid, clavate, somewhat laciniate. Fruit a loculicidal capsule, opening to base by 3–5 lanceolate valves; seeds many, with fleshy endosperm.

1. ***D. uniflora*** Willd. 1809, *Enum. Pl. Hort. Berol.*, p. 340. "Sundew"

Gaudichaud, 1825, p. 105; 1826, p. 137; D'Urville, 1825, p. 51; Hooker, 1847, p. 245; Melvill, 1903, p. 6; Diels, 1906, p. 64; Wright, 1911, p. 318; Skottsberg, 1913, p. 37; Vallentin and Cotton, 1921, pl. 18.

D. maclovianus Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 705.

Stock short, vertical, covered with remains of dead leaves. Leaves spreading horizontally, sometimes ascending or suberect; lamina *c.* 3–5×5–6 mm., orbicular or slightly wider than long, with densely glandular-fimbriate margin, tapering to petiole; petiole *c.* 5–8×*c.* 1 mm., glabrous, widening to basal scarious sheath with sparsely glandular fimbriate margin. Flowers solitary, rarely 2 or 3; peduncle 6–11 mm., erect. Sepals 3–4×*c.* 3 mm., unequal, obovate-spathulate, obtuse, rarely emarginate, dark purplish; petals *c.* 6×2–3 mm., exceeding sepals, obovate to subspathulate, obtuse, white. Capsule *c.* 2–3 mm., ovoid-globose, smooth; seeds *c.* 0·8 mm., obovoid, prominently reticulate, black and shiny. Self-compatible. Fl. I–II.

Wet open peat and gravel, *Sphagnum* bogs, *Astelia* association; common. 0–640 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 47°S., Chiloe, southern Chile (*c.* lat. 40°S.).

Typus. "ad fretum Magellanicum", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC51 *Moore 788* (C, CHR, GH, LTR); TC88 *Vallentin iii.1910* (K, MANCH), *Skottsberg**; s. loc. *Firmin 50* (K). **EF**: UC76 *Moore 599* (K, LP, LTR, S); VC28 *Gaudichaud* (K), *Skottsberg**; VC37 *Sladen Fa16/50* (BM), *Holdgate 645* (BIRM), *Vallentin iii.1911* (MANCH); VC47 *Booth 46* (LTR), *Lamb 3.ii.1946* (BM), *Cunningham 17.i.1868* (K), *Hamilton JH50* (BM), *Smith 55* (BM), *Vallentin in 1909–11* (K), *Davies BF14* (K), *Skottsberg**; s. loc. *Ingram in 1938* (BM).

CRUCIFERAE

Flowers actinomorphic, hermaphrodite. Sepals 4, free, in two decussate pairs, the inner pair often with saccate bases. Petals 4, free, clawed, alternating with sepals. Stamens 6, an outer pair with short filaments and two inner pairs with long filaments, but in **8**, *Coronopus*, the outer 1–2 pairs may be absent. Ovary superior, of two united carpels, with two cells separated by a membranous false septum. Fruit a siliqua or silicula (Fig. 9).

Tribe SISYMBREAE

1. *Sisymbrium* L.

Annual or biennial herbs. Leaves alternate, pinnatifid; stipules absent. Style distinct; stigma ± 2-lobed. Fruit a siliqua; seeds in one row in each loculus.

1.** ***S. officinale (L.) Scop. 1772, *Fl. Carn.*, ed. 2, **2**, p. 26. Hedge Mustard

Moore and Sladen, 1965, p. 32.

Usually annual, with slender tap-root; stem 10–60 cm. or more, erect, branched above, usually with appressed, stiff hairs. Basal leaves in rosette; lamina 5–8 cm., ± ovate in outline, deeply pinnatifid, with large terminal lobe and 4–5 pairs of smaller lateral lobes, all ± dentate; stem-leaves lobed. Flowers in corymbose panicle; pedicels 1–2 mm. Sepals *c.* 1–3 mm.; petals 2–4 mm., exceeding sepals, yellow. Siliqua

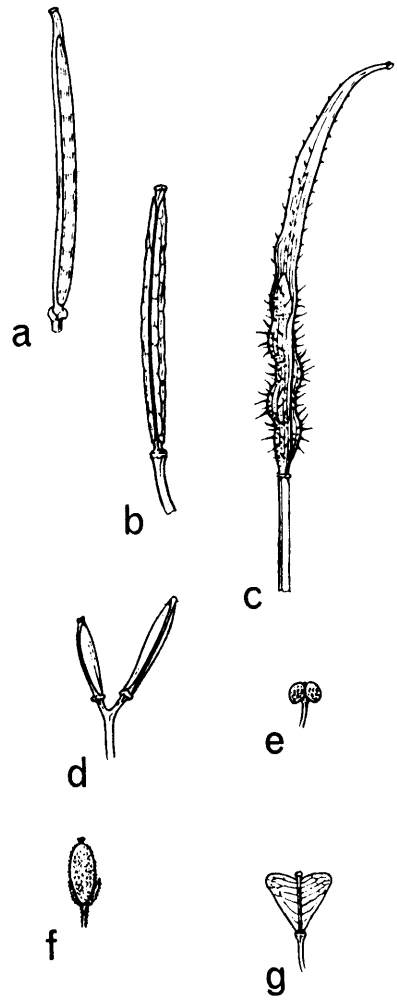


FIGURE 9

Fruits of Cruciferae.

a. *Cardamine glacialis.* b. *Arabis macloviana.*
c. *Sinapis alba.* d. *Draba funiculosa.*
e. *Coronopus didymus.* f. *Draba magellanica.*
g. *Capsella bursa-pastoris.*

a–d, siliquae; e–g, siliculae.
All × $\frac{7}{6}$.

c. 10–15 × 1 mm., conical-cylindrical, straight, narrowing to style *c.* 0·5–1·0 mm., closely appressed to the stem; seeds *c.* 1 mm. in diameter, ovoid, yellowish brown, *c.* 6 in each loculus.

Waste ground near settlements; occasional.

East Falkland. Introduced; native throughout Europe but widely introduced elsewhere.

Specimens. **EF**: VC37 *Sladen JB106/2* (BM).

Tribe HESPERIDEAE

2. *Erysimum* L.

Annual or biennial herbs. Leaves alternate, simple; stipules absent. Style short; stigma capitate, ± 2-lobed. Fruit a siliqua; seeds in one row in each loculus.

1.** ***E. cheiranthoides L. 1753, *Sp. Pl.*, p. 661. Treacle Mustard

Moore and Sladen, 1965, p. 32.

Usually annual, with short tap-root; stems 1 or more, up to 60 cm., with scattered stellate hairs. Basal leaves in rosette; lamina up to 6 × 1 cm., oblong-lanceolate, acute, entire or sinuate-dentate; petiole short; cauline leaves narrower, ± dentate, sessile. Flowers in corymbose panicle; pedicels 4–8 mm., longer in fruit, slender, patent. Sepals 2–4 mm., stellate-hairy; petals 3–6 mm., pubescent on back, yellow. Siliqua 10–25 × *c.* 1 mm., tetragonous, erecto-patent, stellate-hairy, green; style 0–1·5 mm.; seeds 0·8–1·2 mm. in diameter, shallowly winged at the apex, pale brown.

Weed of cultivated ground; rare.

East Falkland. Introduced; native in most of Europe, northern Asia and North America.

Specimens. **EF**: VC08 *Sladen JB117/1* (BM).

Tribe ARABIDEAE

3. *Cardamine* L.

Perennial herbs. Leaves alternate, pinnate; stipules absent. Stigma sessile or subsessile, slightly 2-lobed. Fruit a strongly compressed siliqua, the valves coiling spirally from base to dehisce explosively; seeds in one row in each loculus.

1. ***C. glacialis*** (Forst. f.) DC. 1821, *Reg. Veg. Syst. Nat.*, **2**, p. 264. "Bitter Cress"

Schulz, 1903, p. 540; Skottsberg, 1913, p. 35.

C. hirsuta auct., non L.; D'Urville, 1825, p. 50; Gaudichaud, 1826, p. 137; Hooker, 1847, p. 232; Melvill, 1903, p. 5; Wright, 1911, p. 315; Vallentin and Cotton, 1921, pl. 8.

Sisymbrium glaciale Forst. f. 1789, *Comment. Gotting.*, Ser. 2, **9**, p. 36.

Stems 15–25(–35) cm., erect or ascending, branched from the base, glabrous, or pubescent near the base, often purplish towards apex, with 0–5 cauline leaves. Leaves with lamina 2–12 × 0·5–3·0 cm., oblong in outline, with 3–7 pairs of leaflets; leaflets of basal leaves 6–15 × 3–9 mm., suborbicular, crenate-dentate, subsessile; leaflets of cauline leaves oblong to ovate, entire or rarely crenate-dentate, the terminal leaflet often 3-lobed. Flowers solitary or in 2- to 15-flowered racemes; pedicels 3–4 mm., longer in fruit. Sepals 2 mm., broadly ovate, brownish green, often violet-tinged; petals *c.* 3–4 mm., obovate-cuneiform, with long claw, white, sometimes purplish. Siliqua 22–30 × 1–5 mm., obtuse, erect, green or with the valves violet; seeds *c.* 1·0 × 0·9 mm., ovoid, smooth, dark brown. $2n = c.\ 48$. Self-compatible and often, perhaps usually, self-pollinated. Fl. X–II. (Fig. 9a)

Moist places in most communities; f. common. 0–580 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Andean Patagonia, north along the Andes to *c.* lat. 30°S., ? Tristan da Cunha.

Typus. Tierra del Fuego, 20.xii.1774–3.i.1775. *J. R. & G. Forster* (BM!).

Specimens. **WF**: TC06 *Snyder 2.xii.1852* (CU); TC68 *Vallentin 70* (K); TC84 *Sladen JB121/6* (BM); TC88 *Moore 867* (LTR, US); TD80 *Vallentin iii.1911* (MANCH); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol 1* (BM), *Vallentin 2* (BM). **EF**: UC65 *Corner 336* (LTR), *Moore 621* (C, CHR, GH, K, LTR, S); UC66 *Corner 332* (LTR); UC68 *Moore 670* (LTR); UC77 *Moore 584* (K, LP, LTR); VC28 *Sladen Fal1/49* (BM); VC47 *Hamilton JH26* (BM), *Hill xi.1902* (K), *Bennett 9.xi.1933* (BM); VC48 *Strange xii.1964* (LTR); s. loc. *Hooker* (BM).

4. *Arabis* L.

Glabrous, perennial herbs. Leaves alternate, simple; stipules absent. Inner sepals often slightly saccate at base. Style short; stigma capitate, entire. Fruit a siliqua; seeds in two rows in each loculus.

1. ***A. macloviana*** (D'Urv.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 231. "Falkland Rock Cress"

Wright, 1911, p. 315; Skottsberg, 1913, p. 36; Vallentin and Cotton, 1921, pl. 7.
Erysimum maclovianum (D'Urv.) Gay ex Gaudich. 1826, in *Freyc. Voy.*, p. 136.
Brassica magellanica auct., non Pers.; Gaudichaud, 1825, p. 105.
B. macloviana D'Urv. 1825, *Fl. Is. Mal.*, p. 49.

Stems one or more, up to 45 cm., erect, sometimes branched from the base. Basal leaves in rosette, lamina 32–40×6–11 mm., oblong- to elliptic-lanceolate, acute to obtuse, with cuneate base narrowing to petiole, irregularly serrate-dentate to subentire; cauline leaves narrower, sessile. Flowers in dense corymb 5–20 cm.; pedicels *c.* 4–6 mm. Sepals *c.* 4–6 mm., obtuse, glabrous or pubescent, pale to yellowish green, often purple-tinged; petals 6–8×*c.* 3 mm., obovate-spathulate, obtuse, white; stamens subequal, slightly exceeding style; stigma yellow. Siliqua 17–25×2·0–2·5 mm., linear, subtetragonous, erect, glabrous; seeds *c.* 1·5–2·0 mm., oblong-ovoid, punctate, purplish brown. Self-compatible, self-pollinated. Fl. XI–I. (Fig. 9b)

Among rocks above high-water mark, coastal cliffs and *Empetrum* heath on coast; rare. 4–30 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis, 20.xi–18.xii.1822. *D'Urville* (P).

This species was reported as relatively common in Hooker's time and its present rarity is probably the direct result of sheep-grazing.

Specimens. **WF**: TC66 *Skottsberg**; TC68 *Vallentin viii.1911* (K), *i.1910* (MANCH); TC78 *Vallentin in 1909–11* (K, MANCH), *Skottsberg**; TC83 *Cunningham 31.i.1868* (K); TC88 *Skottsberg**; TC99 *Vallentin 12.ii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); UC74 *Skottsberg**; VC08 *Sladen JB115/1* (BM); VC28 *Lesson* (K); s. loc. *Darwin 2.iii.1833* (CGE, K), *Hooker 28* (K), *Wright* (K).

Tribe ALYSSEAE

5. *Draba* L.

Perennial herbs. Leaves alternate, simple; stipules absent. Inner sepals sometimes slightly saccate at base. Style short or absent; stigma capitate, entire or indistinctly 2-lobed. Fruit a siliqua or silicula; seeds in two rows in each loculus.

Flowering stems usually leafy; leaves with many stellate and few simple hairs; fruit an oblong silicula .. .. **2. *magellanica***
Flowering stems leafless; leaves glabrous or with simple hairs only; fruit a linear siliqua **1. *funiculosa***

1. ***D. funiculosa*** Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 238. Whitlow Grass

Wright, 1911, p. 315; Skottsberg, 1913, p. 36; Vallentin and Cotton, 1921, pl. 8; Schulz, 1927, p. 71.

Caespitose, usually glabrous; stem *c.* 0·5–10·0×0·4 cm., erect or ascending, simple or sparingly branched, somewhat woody, covered with remains of dead leaves. Leaves usually imbricate in basal clusters; lamina 6–12×1·0–2·5 mm., linear-lanceolate to linear-subspathulate, obtuse to subacute, narrowing to petiole, entire or dentate with prominent stiff cilia, rather coriaceous, glabrous or with rigid hairs; petiole winged, with somewhat sheathing base. Flowering stems 1–4 cm., slender, erect, leafless, with terminal (2–)3- to 7-flowered raceme; pedicels 0·5–1·0 mm. Sepals 1–2×*c.* 0·5–1·0 mm., subequal, ovate to oblong, obtuse or acute, sparsely branched- to stellate-pubescent, with scarious margin; petals *c.* 3 mm.,

shortly spathulate, obtuse or emarginate, white; stigma sessile, slightly 2-lobed. Siliqua 7–10×1·0–1·8 mm., linear, obtuse, compressed, erecto-patent, glabrous; seeds *c.* 1 mm., ovoid, glabrous, orange-brown, with slender funiculus *c.* 1·5 mm. $2n = 16$. Self-compatible, usually self-pollinated. Fl. (IX–)X–XI. (Fig. 9d)

Dry, well-drained, coastal slopes, particularly in *Empetrum* heath; uncommon. 3–10 m.

West Falkland, East Falkland. Andean Patagonia north to *c.* lat. 50°40′S., east Patagonia (*c.* lat. 52°18′S.).

Typus. East Falkland. *Hooker* (K!).

Specimens. **WF**: TC32 *Moore 744* (K, LTR, US); TC66 *Skottsberg**; TC68 *Vallentin xi.1909* (K); TC78 *Vallentin x.1909* (K); s. loc. *Vallentin* (BM), *Nichol* (BM). **EF**: UC65 *Moore 631* (K, LP, LTR, S); VC18 *Skottsberg**; VC47 *Hill xi.1902* (K); s. loc. *Hooker 74* (K), *Abbott in 1860* (K), *Hennis in 1914* (BM).

2. ***D. magellanica*** Lam. 1786, *Encycl. Méth. Bot.*, **2**, p. 328.

Schulz, 1927, p. 292.

D. falklandica Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 238; Wright, 1911, p. 315; Skottsberg, 1913, p. 36; Vallentin and Cotton, 1921, pl. 10; Marquand, 1923, p. 370.

Caespitose plant, densely covered with stipitate-stellate hairs, a few longer simple or branched hairs also present; stem *c.* 1·0×0·4 cm., erect, woody, usually with few erect branches, covered with remains of dead leaves. Leaves in dense basal clusters; lamina 6–12×*c.* 2 mm., obovate to obovate-spathulate, acute or obtuse, narrowing to petiole, entire; petiole winged, widening near base. Flowering stems 2·5–7·0 cm., simple or sparingly branched, erect, with 1–4 sessile leaves, rarely leafless, with dense terminal, often subglobose, (3–)6- to 12-flowered raceme; pedicels *c.* 2 mm. Sepals *c.* 2·0×1·5 mm., subequal, ovate to oblong-elliptical, obtuse; petals 3–4 mm., spathulate, usually emarginate, white; style 0·5–1·0 mm.; stigma flattened, sometimes slightly 2-lobed. Silicula 6–9×2·5–4·0 mm., oblong-ellipsoid, subobtuse, tapering to style, compressed, suberect; seeds *c.* 1 mm., ovoid, glabrous, orange-brown, with very short funiculus. $2n = 48$*. Self-compatible, usually self-pollinated. (Fig. 9f)

Coastal localities without definite details of habitat; rare.

West Falkland, ? East Falkland. Fuegia, east Patagonia (*c.* lat. 52°18′S.), Andean Patagonia and north along the Andes to *c.* lat. 33°S.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

The Falkland Islands plant is referred to var. *falklandica* (Hook. f.) Schulz, to which the above description applies. This differs from the typical form principally in the generally dwarfer habit and fewer-flowered inflorescence, but this is a doubtful distinction.

Specimens. **WF**: TC78 *Vallentin 21.x.1910* (K, MANCH); s. loc. *Robinson* (K), *Hennis* (BM).

Tribe LEPIDEAE

6. *Cochlearia* L.

Biennial or perennial, glabrous herbs. Leaves alternate, simple; stipules absent. Sepals not saccate. Style short; stigma capitate. Fruit a silicula; seeds in two rows in each loculus.

1.** ***C. officinalis L. 1753, *Sp. Pl.*, p. 647. "English Scurvy Grass"

Wright, 1911, p. 315; Skottsberg, 1913, p. 35; Vallentin and Cotton, 1921, pl. 9.

Stems one or more, up to 25 cm., procumbent to ascending, produced from long tap-root. Basal leaves in loose rosette; lamina 5–21×5–20 mm., orbicular to reniform, obtuse, cordate at base, entire or undulate to coarsely dentate, usually fleshy; petiole long; cauline leaves similar but sessile and often amplexicaul. Flowers in short raceme. Sepals 1–3 mm., ovate, obtuse; petals 3–7 mm., obovate to subspathulate, usually emarginate, white, rarely lilac. Silicula 3–7×2·5–6·0 mm., ovoid to globose, rounded at base, narrowed to apical style 0·3–1·0 mm.; seeds 1·5–2·0 mm., ovoid, papillose, reddish brown. Self-compatible, usually self-pollinated.

Wet coastal cliffs and sandy beaches; rare.

West Falkland. Introduced; native on coasts of north-west Europe.

The leaves are rich in vitamin C and pleasantly sharp-tasting so that the plant was formerly eaten by sailors to combat scurvy. Skottsberg (1913) suggested that the species may therefore have been introduced deliberately into the old French garden at Port Egmont.

Specimens. **WF**: TD80 *Skottsberg**; TC99 *Vallentin x.1910, ii.1911* (K, MANCH).

7. *Capsella* Medicus

Annual or perennial herbs. Leaves alternate, simple to pinnatifid; stipules absent. Sepals not saccate. Style distinct; stigma capitate. Fruit a silicula; seeds in two rows in each loculus.

1.** ***C. bursa-pastoris (L.) Medicus 1792, *Pflanzengatt.*, p. 85. Shepherd's Purse

Birger, 1907, p. 295; Moore and Sladen, 1965, p. 32.

Thlaspi bursa-pastoris L. 1753, *Sp. Pl.*, p. 647; D'Urville, 1825, p. 50; Gaudichaud, 1826, p. 137.

Plant glabrous or sparsely hairy; stem 3–40 cm. Basal leaves in a rosette; lamina up to *c.* 9×4 cm., oblanceolate in outline, entire to deeply pinnatifid, the base narrowing to petiole; petiole up to *c.* 5 cm., winged; cauline leaves sagittate-amplexicaul, the margins varying as above. Flowers in lax, terminal corymb; pedicels up to 15 mm. in fruit. Sepals *c.* 1–2 mm., ovate, often pubescent; petals 2–3 mm., obovate, white. Silicula 6–9×4–9 mm., triangular-obcordate, slightly emarginate at apex, compressed, the valves keeled; seeds 0·8–1·0 mm., oblong to oblong-ovoid, pale brown. Self-compatible, usually self-pollinated. (Fig. 9g)

Cultivated and waste ground around settlements; common.

West Falkland, East Falkland. Introduced; a cosmopolitan ruderal.

Specimens. **WF**: TD51 *Hamilton JH55* (BM), *Sladen JB122/5* (BM); TC83 *Sladen 22.v.1949*†; TC86 *Sladen 16.xii.1949*†. **EF**: VC08 *Sladen 13.v.1949*†; VC16 *Sladen JH102/6* (BM).

8. *Coronopus* Haller

Annual or biennial herbs. Leaves alternate, deeply pinnatisect; stipules absent. Sepals not saccate. Petals small, sometimes absent. Fertile stamens 2(–4). Stigma sessile, somewhat 2-lobed. Fruit a silicula, indehiscent or breaking into two, 1-seeded, achene-like nutlets.

1.** ***C. didymus (L.) Sm. 1800, *Fl. Brit.*, **2**, p. 691. Lesser Swine-cress

Skottsberg, 1913, p. 35; Moore and Sladen, 1965, p. 32.

Senebiera didyma (L.) Pers. 1806, *Syn. Pl.*, **2**, p. 185; Birger, 1907, p. 294.

Stems 2–25 cm., procumbent or ascending, branched, leafy, pubescent. Basal and lower stem leaves with lamina 10–25×5–10 mm., oblong to oblong-ovate in outline, deeply pinnatisect; segments (1–)2–5 pairs, oblanceolate, acute, usually pinnatifid with acute lobes having 1–3 short, stiff hairs at apex; petiole half as long to as long as lamina. Flowers in racemes which are terminal on stem and also opposite the leaves lower down the stem; pedicels 1·0–1·5 mm., longer in fruit. Sepals 0·5–1·0 mm., ovate, cucullate, acute; petals, when present, shorter than sepals, white. Silicula 0·8–1·75×1·0–2·5 mm., emarginate above and below and constricted at the septum, reticulate-pitted; seeds *c.* 1·5 mm., reniform-ovoid, glabrous, pale brown. Self-compatible, usually self-pollinated. (Fig. 9e)

Waste and cultivated ground around settlements, coastal shingle, stream margins, open areas in many communities; common.

West Falkland, East Falkland. Introduced; a widespread ruderal throughout temperate regions of the world but possibly native only in South America.

Specimens. **WF**: TC05 *Snyder 12.iii.1853* (CU); TC31 *Moore 725* (CHR, LTR); TC55 *Skottsberg**; TD51 *Sladen JB122/4* (BM); TC83 *Sladen 22.v.1949*†; TC84 *Sladen JB121/4* (BM); TC86 *Sladen Fa76/49* (BM); TC99 *Vallentin iii.1911* (MANCH); UD11 *Smith i.1937* (BM); s. loc. *Vallentin in 1909–11* (K), *Blake in 1925–26* (MANCH). **EF**: UC32 *Skottsberg**; UC58 *Moore 664* (K, LP, LTR, S); UC89 *Sladen JB114/1* (BM); VC09 *Sladen 52/49* (BM); VC37 *Sladen 29.iv.1949* (BM); VC47 *Birger*†.

Tribe BRASSICEAE

9. *Sinapis* L.

Annual herb. Leaves alternate, pinnate or pinnatifid; stipules absent. Sepals not saccate. Stigma sessile, somewhat 2-lobed. Fruit a siliqua, with a long beak; seeds in one row in each loculus.

*1. ***S. alba*** L. 1753, *Sp. Pl.*, p. 668. White Mustard

Birger, 1907, p. 278.

Stems 25–*c.* 50 cm., erect, simple or branched, with stiff, deflexed hairs, rarely glabrous. Leaves with lamina obovate in outline, lyrate-pinnate or lyrate-pinnatifid, hispid, the terminal lobe longer than laterals. Sepals 3·5–5·0×0·7–1·0 mm., linear-lanceolate, obtuse; petals 10–15 mm., obovate to spathulate, yellow. Siliqua 25–40×3–4 mm., patent; beak strongly compressed, sometimes curved, as long as or longer than the valves; seeds 1–4 in each loculus, 1·5–2·0 mm., subglobose, yellowish brown. Self-compatible. (Fig. 9c)

Weed of cultivated ground; occasional.

East Falkland. Introduced; grown as green fodder crop and occasionally naturalized. Reported once, perhaps now extinct.

10. *Raphanus* L.

Annual or biennial, hispid herbs. Leaves alternate, lyrate-pinnatifid; stipules absent. Sepals not saccate. Style long, slender; stigma capitate, somewhat 2-lobed. Fruit a transversely jointed siliqua, the lowest joint short, slender, seedless, stalk-like, the upper joint ± cylindrical and indehiscent, with narrow terminal beak.

*1. ***R. sativus*** L. 1753, *Sp. Pl.*, p. 669. Radish

Moore and Sladen, 1965, p. 32.

Tap-root tuberous, white or brightly coloured; stem up to 50 cm., erect, simple or branched. Sepals 7–9×1·0–1·2 mm., ± oblong to linear-lanceolate, obtuse; petals 13–18 mm., obovate to spathulate, white, lilac or violet, usually with darker veins. Siliqua 20–90×8–15 mm., often irregularly constricted between the seeds, the wall rather spongy; seeds *c.* 3 mm. in diameter, globose, usually black.

A cultivated plant occasionally reported as a casual weed of field crops.

Specimens. **EF**: VC16 *Sladen JB102/5* (BM).

CRASSULACEAE

1. *Crassula* L.

Glabrous, perennial herbs. Leaves opposite, simple, connate at base; stipules absent. Flowers actinomorphic, hermaphrodite. Sepals 4, connate towards base. Petals 4, free. Stamens 4, alternating with petals. Carpels 4, somewhat connate at base, each with basal nectariferous scale. Fruit a bunch of follicles.

1. ***C. moschata*** Forst. f. 1789, *Comment. Gotting.*, Ser. 2, **9**, p. 26.

Skottsberg, 1913, p. 37.

Tillaea moschata (Forst. f.) DC. 1828, *Prodr.*, **3**, p. 382; Wright, 1911, p. 319; Vallentin and Cotton, 1921, pl. 21.
Bulliarda moschata (Forst. f.) D'Urv. 1825, *Fl. Is. Mal.*, p. 53; Gaudichaud, 1826, p. 138; Hooker, 1847, p. 278.

Small, succulent herbs forming extensive patches; stems up to 30 cm. or more, prostrate, rooting at nodes, with erect or ascending leafy branches up to 15 cm. or more, green or reddish. Leaves 4–6(–8)× 1–2 mm., obovate to oblanceolate-spathulate, obtuse or subacute, entire, rather thick and fleshy, often purplish towards base. Flowers solitary in leaf-axils; peduncles 1·5–3·0 mm. Calyx-lobes 1·25–2·0×

c. 1·0–1·5 mm., unequal, ovate, obtuse, green or often purple-tinged; petals 2·0–2·5×*c.* 1·5 mm., exceeding calyx, oblong, obtuse, white, often tinged with pink; scales *c.* 0·75×0·5 mm., oblong-obovate, truncate, purplish red. Follicles 1·5–2·0 mm., suboblong, with curved apical beak *c.* 0·5–1·0 mm.; seeds 6–8 per follicle, *c.* 0·6 mm., ovoid-ellipsoid, smooth, yellowish brown. Self-compatible, protandrous. Fl. XII–II. (Plate IVd)

Moist sandy and rocky shores at or above high-water mark; very common. 0–61 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to *c.* lat. 46°S., Andean Patagonia (*c.* lat. 41°S.), southern Chile (*c.* lat. 40°S.), Iles de Kerguelen, Iles Crozet, Marion Island, New Zealand, Macquarie, Stewart and Chatham Islands.

Typus. Tierra del Fuego: Isla de los Estados; "in rupibus praecipitibus Insularum Novi Anni", 20.xii.1774–3.i.1775. *J. R. & G. Forster* (BM!).

Specimens. **WF**: TD40 *Moore 912* (GH, K, LP, LTR, S); TC50 *Moore 784* (C, K, LTR); TC68 *Vallentin in 1909–11* (BM); TC99 *Vallentin in 1909–11* (K, MANCH); s. loc. *Nichol in 1899* (BM). **EF**: UC58 *Moore 660* (LP, LTR, UC, US); VC46 *Moore 548* (BIRM, C, K, LTR, P, US); VC47 *Moore 539* (CHR, GH, K, LP, LTR, S), *Cunningham 23.i.1868* (K), *Skottsberg 31.xii.1901* (BM), *Sladen Fa28/50* (BM); VC48 *Bennett 6.xii.1933* (BM); s. loc. *Hooker* (BM, K), *Wright* (K), *Antarct. Exped. in 1901–04* (BM).

2. *Sedum* L.

Glabrous, evergreen, perennial herbs. Leaves alternate, simple, succulent; stipules absent. Flowers actinomorphic, hermaphrodite, in small cyme. Sepals 5, connate at base. Petals 5, free. Stamens 10. Carpels 5, free or slightly adnate at base, each with basal nectariferous scale. Fruit a group of follicles.

1.** ***S. acre L. 1753, *Sp. Pl.*, p. 432. Biting Stonecrop, Wall-pepper

Moore, 1967*a*, p. 24.

Laxly caespitose plant with hot, acrid taste; flowering stems 5–12 cm. and with short, non-flowering shoots. Leaves 3–6×*c.* 2–3 mm., ovoid-trigonous, obtuse, entire, shortly spurred at base, sessile, rather closely imbricate at least on non-flowering shoots. Flowers pedicellate or subsessile; cymes with usually spreading branches. Sepals 2·0–3·5×1·5–2·5 mm., ovate-lanceolate, obtuse; petals 5–8×1·5–2·0 mm., lanceolate, acute to acuminate, bright yellow; scales very small, ± oblong, entire, whitish. Follicles 3·0–3·5×1·0–1·5 mm., narrowly conical, with slender apical beak 1·0–1·5 mm.; seeds several per follicle.

Disturbed and rather dry rocky ground near settlements; rare.

East Falkland. Introduced; native of Eurasia and North Africa; naturalized in North America.

Specimens. **EF**: VC47 *Longton 1047* (BIRM, LTR).

SAXIFRAGACEAE

1. *Saxifraga* L.

Perennial herbs. Leaves alternate; stipules absent. Flowers actinomorphic, hermaphrodite. Sepals 5, connate at base. Petals 5, free. Stamens 10. Ovary semi-inferior and fused to cup-shaped receptacle, 1-celled; styles 2, with flattened capitate stigmas. Fruit a capsule; seeds numerous, with copious endosperm.

1. ***S. magellanica*** Poir. 1805, in Lam., *Encycl. Méth. Bot.*, **6**, p. 686.

Wright, 1911, p. 318; Engler and Irmscher, 1919, p. 378.

S. cordilleranum Presl 1831, *Reliq. Haenk.*, **2**, p. 55; Skottsberg, 1913, p. 37.

Compact, caespitose, usually rather densely short-glandular-hairy; vegetative stems up to *c.* 6 cm., erect or ascending, branched, somewhat woody and thickly clothed with dead leaves towards base, covered with densely imbricate and congested leaves above; flowering shoots up to 5 cm. Leaves with lamina 6–9×1·5–2·5 mm., oblanceolate- to spathulate-oblong, 3(–5)-lobed to 3(–5)-fid, rarely simple,

narrowing at base to short, wide petiole; leaves on flowering stems few, ovate or ovate-lanceolate, obtuse, sessile. Flowers 1–2, rarely more, in lax terminal cyme; pedicels *c.* 2–4 mm. Sepals 2–3 × *c.* 1·5 mm., ovate, obtuse, dark green, often purple-tinged; petals 3·5–5·0 × 1·5–3·0 mm., oblanceolate to obovate, obtuse, usually emarginate, white or slightly cream-coloured. Capsule 3–4 mm., ovoid; seeds *c.* 0·8 mm., ellipsoid, finely reticulate, narrowly winged on keel, black. $2n = 76$*.

East Falkland. Fuegia, throughout Andean Patagonia and north along the Andes to *c.* lat. 5°N.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

Engler and Irmscher (1919, p. 379) brought all the southern South American material to ssp. *poiretii* Engler and Irmscher (correctly ssp. *magellanica*), differing principally from the north Andean ssp. *peruviana* in having petals less than 3 mm. This distinction cannot be maintained on the material now available.

The species has only been recorded once from the Falkland Islands. It is readily overlooked and may be more frequent.

Specimens. **EF**: UC65 *Vallentin 115* (K).

ROSACEAE

1. *Rubus* L.

Perennial herbs. Leaves alternate, simple or compound; stipules present. Flowers actinomorphic, hermaphrodite. Sepals 5, free. Petals 5, free, alternating with sepals. Stamens numerous. Carpels numerous, free, on convex receptacle. Fruit a group of numerous, 1-seeded drupelets.

1. ***R. geoides*** Sm. 1789, *Pl. Icon. Ined.*, Fasc. 1, pl. 19. Native Strawberry

Gaudichaud, 1825, p. 106; 1826, p. 138; D'Urville, 1825, p. 54; Hooker, 1847, p. 263; Melvill, 1903, p. 5; Wright, 1911, p. 317; Skottsberg, 1913, p. 38; Vallentin and Cotton, 1921, pl. 16.

Stems up to 70 cm. or more, slender, creeping, somewhat woody, branched, rooting at several nodes, with leaves borne on main stems or on short lateral branches. Leaves with lamina 1·5–4·0 × 1·0–2·5 cm., oblong or oblong- to orbicular-ovate, obtuse and often slightly emarginate, cordate at base, simple or rarely with a pair of unequal leaflets at base, irregularly serrate-dentate, often somewhat lobed, sometimes deeply so, especially towards base, appressed hairy on veins beneath; petioles 1–4 cm., slender, ascending, softly hirsute, with linear-lanceolate, brown, scarious stipule *c.* 0·5 cm., completely or largely adnate to base. Flowers solitary, axillary; pedicels *c.* 1–2 cm., appressed-hairy. Sepals *c.* 5 × 3 mm., ovate-triangular, acute or somewhat acuminate, sparsely hirsute; petals 5–7 × 4–5 mm., obovate, obtuse, usually emarginate, white or cream-coloured. Fruit 1·3–2·0(–2·5) cm. in diameter, orange or red; drupelets glabrous. $2n = 28$. Self-compatible, sometimes self-pollinated. Fl. XI–XII.

Moist and shady areas between rocks, under overhanging banks, especially by the sea, under *Hebe* and *Chiliotrichum* stands; fairly common. 0–415 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to *c.* lat. 49°S., Andean Patagonia (*c.* lat. 48°S.), Andes at lat. 36°48′S., Juan Fernandez.

Typus. Tierra del Fuego, i.1769. *Banks and Solander* (BM!).

Specimens. **WF**: TC42 *Moore 812* (K, LP, LTR); TD51 *Blake in 1925–26* (MANCH); TC68 *Vallentin* (BM, K); TD90 *Vallentin ii.1911* (MANCH); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol* (BM). **EF**: UC14 *Cunningham 29.i.1868* (K); UC76 *Corner 335* (LTR); VC09 *Sladen Fa49/49* (BM); VC28 *Lesson* (K), *Gaudichaud* (K); VC37 *Booth 72* (LTR), *Cunningham* (K), *Moore 515* (LTR), *Holdgate 643* (BIRM); VC47 *Davies AF33* (K), *Smith 37* (BM), *Hill xi.1902* (K), *Bennett 9.xii.1917* (BM); s. loc. *Hooker* (BM, K), *Abbott in 1860* (K), *Wright* (K).

2. *Acaena* L.

Perennial herbs, often somewhat woody at base. Leaves alternate, pinnate; stipules present, adnate to petiole. Flowers actinomorphic, hermaphrodite, rarely monoecious, sometimes cleistogamous, in globose to cylindrical cymose or racemose inflorescences, with or without basal bracts. Sepals 3–7, free. Petals absent. Stamens 3–5, rarely more. Carpels 1–2, united; stigmas plumose, prominent. Receptacle deeply

concave, enclosing the carpels, becoming hard and dry in fruit. Fruit of 1–2 achenes enclosed in the persistent receptacle (cupule) and shed with it; cupule with 2–4 or numerous spines, rarely the spines rudimentary.

1. Main stems usually with long internodes, not covered by leaf-bases; stipules with free, herbaceous apex; cupule with 2–4 spines on upper margin 2
   Main stems with short internodes, covered by imbricate leaf-bases; stipules with apex not or scarcely free, scarious; cupule with numerous spines over whole surface, or spines rudimentary .. 4
2. Fruiting inflorescence less than 10 mm. in diameter (including spines); spines usually less than 4 mm. .. .. **2. *microcephala***
   Fruiting inflorescence 10 mm. or more in diameter (including spines); spines usually 5 mm. or more 3
3. Cupule with 2(–3) spines, ascending-strigose; anthers white or yellowish before anthesis .. .. **1. *ovalifolia***
   Cupule with 3–4 spines, glabrous, pubescent or pilose; anthers purple or blackish before anthesis, rarely yellow and purple-tinged .. .. **3. *magellanica***
4. Leaflets pinnatisect; spines rudimentary .. .. **4. *lucida***
   Leaflets lobed; spines many .. .. **5. *pumila***

Section ANCISTRUM (Forst. & Forst. f.) DC.

1. *A. ovalifolia* Ruiz & Pav. 1798, *Fl. Peruv. Chil.*, **1**, p. 67.

Bitter, 1911, p. 240; Skottsberg, 1913, p. 39; Grondona, 1964, p. 228.

Forming large clumps; stems up to 50 cm. or more, prostrate or ascending, often rooting at nodes; branches erect or ascending, sericeous. Leaves with lamina 1·5–6·0×1·0–3·5 cm., oblong to elliptic-oblong in outline, with 2–4 pairs of leaflets; leaflets 7–25×4–15 mm., oblong to elliptic- or obovate-oblong, subacute or obtuse, cuneate or truncate at base, sessile except for terminal leaflet which has petiolule 1–4 mm., acutely or acuminately serrate-dentate, pilose to sericeous beneath, especially on veins, sparsely so on veins or glabrous on upper surface, dark olive-green on upper surface, darker beneath; petiole 0·5–4·0 cm., pilose; stipules scarious, with prominent, acute, sparsely sericeous, herbaceous, free apex *c.* 5 mm. Peduncles 3–8 cm., sericeous, with terminal globose inflorescence 5–15 mm. in diameter, up to 40 mm. when fruiting; bracts 2–3 mm., linear to linear-lanceolate or oblong, acute, entire or laciniate, pilose. Sepals 4–5, *c.* 1·5×0·5 mm., oblong-oblanceolate, acute or subacute, pubescent to shortly sericeous; stamens 2(–3); anthers wider than long, purplish, at same level as stigma; stigma 1·0–1·3 mm., about as long as style, oblong-elliptical, shortly laciniate. Cupule 2·5–3·5 mm., obconical, with rigid, ascending, white hairs; spines 2(–3), 10–14 mm., acicular, glabrous, with prominent barbs (glochids) at apex. $2n = 42$*. Self-compatible, usually self-pollinated. Fl. XII. (Figs. 10b, 11b, d)

Moist areas among rocks and beside streams; rare. *c.* 30 m.

West Falkland. Fuegia, Andean Patagonia, west Patagonia, Chiloe, southern Chile, north along the Andes to *c.* lat. 12°S., in mountains near Buenos Aires (Argentina), Juan Fernandez.

Typus. Peru: "Habitat in Peruviae locis umbrosis et humidis prope Pillas, Acobamba, Palca et Huassahuassa vicas."

Specimens. **WF**: TD40 *Moore 900* (K, LTR), *Skottsberg**.

2. *A. microcephala* Schlecht. 1856, *Linnaea*, **28**, p. 463.

Bitter, 1911, p. 54; Grondona, 1964, p. 223; Moore, 1967*a*, p. 22.

Stems up to *c.* 15 cm., prostrate, rooting at nodes; branches prostrate or ascending, rarely erect, appressed-pilose. Leaves with lamina 0·8–2·0×0·6–1·0 cm., oblong to elliptic-oblong, with 2–4 pairs of leaflets; leaflets 3–5×1·5–3·0 mm., elliptical to obovate, acute to obtuse, sometimes emarginate, cuneate to truncate at base, acutely serrate-dentate, closely silvery sericeous-pilose, sessile or usually shortly petiolulate; petiole 0·4–8·0 cm., densely sericeous-pilose; stipules scarious, with acute, sparsely pilose or glabrous, scarious to subherbaceous, free apex *c.* 2 mm. Peduncles 0·5–2·0 cm., sericeous-pilose, with terminal globose inflorescence *c.* 4 mm. in diameter; bracts 1·2–1·5×*c.* 1 mm., oblong-spathulate, usually

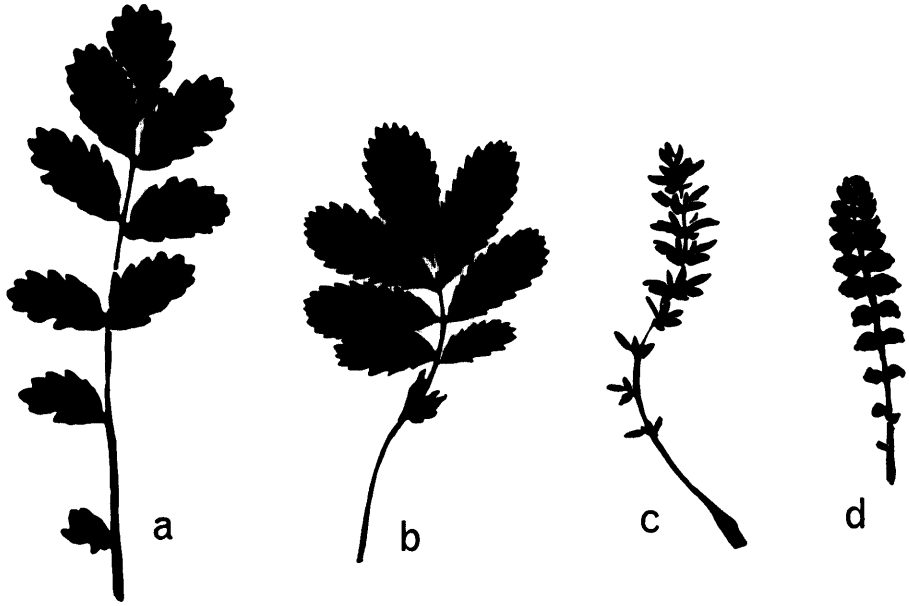


FIGURE 10
Leaf outlines of *Acaena*.
a. *A. magellanica.* b. *A. ovalifolia.*
c. *A. lucida.* d. *A. pumila.*
All ×1.

emarginate, sparsely pilose. Sepals 4–5, *c.* 1·0×0·5–0·7 mm., elliptical to ovate, glabrous or sparsely pilose on margin, purplish on inner surface; stamens 2(–3); anthers wider than long, purplish, held somewhat above stigma; stigma *c.* 0·8 mm., broadly ovate to spherical, deeply laciniate, reddish purple, sessile or subsessile. Cupule *c.* 1 mm., obovoid, glabrous; spines 4, *c.* 0·5 mm., acicular, glabrous, with barbs (glochids) at apex. Fl. XI–I.

Wet peat and gravel; rare. 610–670 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, north along the Andes to *c.* lat. 40°S.

Typus. Chile: Cordillera Ranco, xii.1854. *Lechler 2951.*

Specimens. WF: TC88 *Vallentin 19.iii.1911* (K, MANCH). EF: UC77 *Moore 600* (K, LP, LTR), *Corner 353* (LTR).

3. *A. magellanica* (Lam.) Vahl 1804, *Enum. Pl.*, **1**, p. 297. Prickly Burr

Hooker, 1847, p. 267; Skottsberg, 1913, p. 38; Grondona, 1964, p. 240.

Acaena laevigata (Lam.) Aiton 1810, *Hort. Kew*, ed. 2, **1**, p. 67; Hooker, 1847, p. 266; Wright, 1911, p. 317.

Ancistrum adscendens (Vahl) Poir. 1810, in Lam., *Encycl. Méth. Bot.*, Suppl. 1, p. 347; Gaudichaud, 1825, p. 106; 1826, p. 138; D'Urville, 1825, p. 54.

Acaena adscendens Vahl 1804, *Enum. Pl.*, **1**, p. 297; Hooker, 1847, p. 268; Melvill, 1903, p. 5; Wright, 1911, p. 317; Skottsberg, 1913, p. 38; Vallentin and Cotton, 1921, pl. 17.

Ancistrum magellanicum Lam. 1791, *Tabl. Encycl.*, **1**, p. 76.

Forming large clumps; stems up to 40 cm. or more, prostrate or ascending, rooting; branches prostrate, ascending or erect, glabrous to sericeous. Leaves with lamina 2–8×1·3–2·5 cm., ± oblong in outline, with 5–8 pairs of leaflets; leaflets 7–20×4–12 mm., oblong- to elliptic-obovate, obtuse, cuneate to truncate at base, shallowly to deeply acute- or obtuse-serrate or serrate-dentate, glabrous to sericeous, especially beneath, usually glaucous beneath, sessile or shortly petiolulate; petiole 0·6–6·0 cm., glabrous to sericeous; stipules scarious, or herbaceous with prominent, acute, entire or divided, glabrous to sericeous, green apex 2–7 mm. Peduncles 7–14 cm., glabrous to pilose or sericeous, with terminal globose inflorescence 5–25 mm. in diameter, up to 30 mm. when fruiting, rarely with additional smaller inflorescences on short lateral peduncles below the apex; bracts 1–2 mm., linear to oblong or oblong-lanceolate, fimbriate, sparsely to densely sericeous-pilose. Sepals 4–5(–6), 1·5–1·8×0·6–1·0 mm., elliptical to elliptic-oblong, obtuse, usually sparsely sericeous-pilose, green, sometimes purple-tinged; stamens 2–4(–5); anthers

longer than wide, purple; stigma 0·75–1·0 mm., oblong, about as long as style. Cupule 2–7 mm., obconical to cylindrical, glabrous or sericeous-pubescent, especially near apex; spines 3–4, (1–)5–10 mm., unequal, acicular, glabrous, with barbs (glochids) at apex. $2n = 84$. Self-compatible. Fl. XI–XII. (Figs. 10a, 11a, c)

Rocks, pebbles and sand near the sea, *Cortaderia* grassland, *Empetrum* heath, stream banks, apparently preferring moist areas; abundant. 0–215 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, north along the Andes to lat. 24°55'S., east Patagonia (*c.* lat. 49°S.), South Georgia, Iles de Kerguelen.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC06 *Skottsberg**, *Snyder 4.xii.1852* (CU); TC41 *Moore 694* (K, LTR, LP, S); TC55 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin xii.1909* (BM, K, MANCH); TC88 *Vallentin iii.1911* (K); TC99 *Vallentin* (K, MANCH); s. loc. *Vallentin* (BM). **EF**: UC76 *Moore 610a* (K, LP, LTR); VC18 *Sladen Fa36/49* (BM); VC28 *Skottsberg**, *R. Vallentin* (MANCH); VC46 *Holdgate 642* (BIRM), *Moore 555* (BIRM, K, LTR, S); VC47 *Booth 6* (LTR), *Hill xi.1902* (K); s. loc. *Abbott in 1860* (K), *Hooker* (BM, K), *Wright* (K).

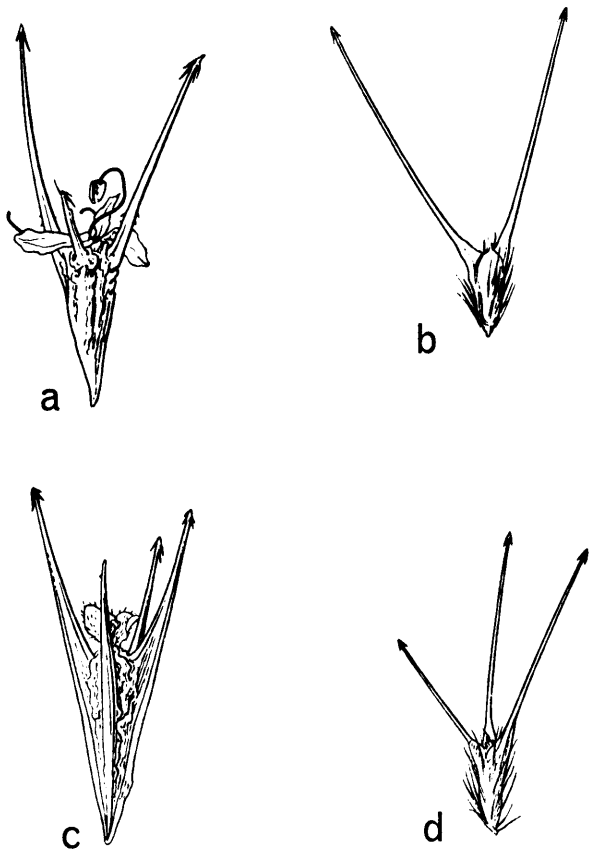


FIGURE 11

Cupules of *Acaena*.
a and c. *A. magellanica*.
b and d. *A. ovalifolia*.
All ×4.

Section PLEUROCEPHALA Citerne

4. *A. lucida* (Lam.) Vahl 1804, *Enum. Pl.*, **1**, p. 296. "Native Yarrow"

Hooker, 1847, p. 266; Bitter, 1911, p. 59; Skottsberg, 1913, p. 38; Vallentin and Cotton, 1921, pl. 18, figs. 1–3; Grondona, 1964, p. 267.

Ancistrum lucidum Lam. 1791, *Tabl. Encycl.*, **1**, p. 77; Gaudichaud, 1825, p. 106; 1826, p. 138; D'Urville, 1825, p. 55.

Stems up to 20 cm., decumbent or ascending, rarely suberect, much-branched, rooting; branches ascending or suberect, covered by overlapping leaf-bases. Leaves with lamina 1·0–3·8×0·3–1·0 cm.,

oblong to linear-oblong in outline, with 5–10 pairs of leaflets; leaflets 1·5–4·0×1–2 mm., oblong to elliptical or ovate-elliptical, entire or 2- to 3-pinnatisect, acute, cuneate at base, sessile, pilose to sericeous, especially on margins and below; petiole 0·8–2·0 mm., sericeous or pilose; stipules scarious, laciniate, sometimes with free, herbaceous or scarious apex *c.* 1 mm. Peduncles 1·5–10·0 cm., pilose, with terminal globose cylindrical inflorescence 5–10 mm. in diameter, often with additional flowers or smaller inflorescences lower on peduncle; bracts 2–4 mm., oblong to ovate-orbicular, acute, obtuse or lobed at apex, pilose. Sepals 4–5, *c.* 1 mm., elliptical to ovate, acute to obtuse, pilose, green; stamens 2(–3); anthers wider than long, purple; stigma *c.* 0·8 mm., ± orbicular, irregularly laciniate; style *c.* 0·4 mm. Cupule 2–4 mm., ovoid or ellipsoid, glabrous or usually sparsely pilose, more densely near apex; spines rudimentary, *c.* 0·1 mm. towards apex. $2n = 42$. Self-compatible. Fl. XI–XII. (Fig. 10c)

Well-drained and open soil, especially on eroding *Empetrum* over sand and gravel, usually by the sea; abundant.

West Falkland, East Falkland. Andean Patagonia north to *c.* lat. 50°S.

Typus. "Ex insulis Falklandicis." (P).

Specimens. **WF**: TC32 *Moore 679* (BIRM, C, K, LTR, US); TC50 *Moore 775* (CHR, K, LTR); TC58 *Skottsberg**; TC65 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin* (K, MANCH); TC88 *Moore 834* (K, LTR); TD80 *Vallentin ii. & xi.1911* (K, MANCH); TC99 *Vallentin i.1911* (K); s. loc. *Nichol* (BM), *Vallentin* (BM). **EF**: UC32 *Skottsberg**; UC65 *Moore 627* (LTR), *Skottsberg**; VC18 *Sladen Fa35/49* (BM); VC28 *Sladen JB111/4* (BM), *Gaudichaud* (K), *Lesson* (K); VC47 *Booth 25* (LTR), *Hill xi.1902* (K), *Moore 534* (GH, K, LP, LTR, P, S), *Skottsberg**; s. loc. *Hooker* (BM, K), *Wright* (K).

Section PLEUROSTACHYA Citerne

5. ***A. pumila*** Vahl 1804, *Enum. Pl.*, **1**, p. 298.

Hooker, 1847, p. 264; Duse, 1905, p. 360; Bitter, 1911, p. 39; Grondona, 1964, p. 317; Moore, 1967*a*, p. 22.

Stems *c.* 4 cm., prostrate, rooting; branches few, very short, prostrate or ascending, covered by overlapping leaf-bases. Leaves with lamina 1·2–2·2×0·4–0·8 cm., oblong or linear-oblong in outline, with 8–12 pairs of leaflets; leaflets 2·5–4·0×2·0–3·5 mm., broadly and asymmetrically ovate to subovate, obtuse, cuneate to truncate at base, sessile, obtusely serrate-dentate towards apex, with revolute margin, comose at tips of teeth, glabrous elsewhere, dark green or purplish and shiny above, glaucous beneath; petiole 0·2–0·5 cm., glabrous; stipules scarious, reddish purple. Peduncles 0·2–0·5 cm., pilose; inflorescence a spike with few, remote, shortly stipitate flowers; bracts *c.* 3 mm., oblong, entire or irregularly lobed, glabrous. Sepals 4, *c.* 1·0×0·5 mm., oblong or elliptic-oblong, obtuse, glabrous, purplish; stamens 2(–4); anthers rather wider than long, purple; stigma 0·4–0·5 mm., ± orbicular, subsessile. Cupule *c.* 2 mm., ellipsoid, glabrous, shortly stipitate; spines many, *c.* 0·5–0·8 mm., with prominent barbs (glochids) at apex, over whole surface of cupule. Fl. XI. (Fig. 10d)

Wet peaty mountain ledges; rare. 640 m.

East Falkland. Fuegia, west Patagonia north to lat. 49°10′S., southern Chile (*c.* lat. 39°S.).

Typus. "Ad Fretum Magellanicum", xii.1767–i.1768. *Commerson* (P).

Specimens. **EF**: UC77 *Corner 352* (LTR).

LEGUMINOSAE

1. *Ulex* L.

Densely spiny shrubs; spines green, branched. Leaves alternate, 3-foliolate on young plants, reduced to spines on mature plants; stipules absent. Flowers zygomorphic, hermaphrodite. Calyx bipartite, with lower lip minutely 3-toothed and the upper minutely 2-toothed. Petals 5, the upper (standard) erect, conspicuous, the lower pair (keel) ± connate by their lower margins. Stamens 10, monadelphous. Ovary superior, 1-celled; style curved; stigma capitate. Fruit a 2-valved pod, dehiscing explosively; seeds many.

1.** ***U. europaea L. 1753, *Sp. Pl.*, p. 741. Gorse, Whin, Furze

Melvill, 1903, p. 5; Birger, 1907, p. 279; Skottsberg, 1913, p. 78.

Main branches up to 200 cm. or more, erect or ascending, rather sparsely hairy; spines 1·5–2·5 cm., rigid, deeply furrowed. Flowers *c.* 15 mm., yellow; pedicels 3–5 mm., densely pubescent; bracteoles 3–5 mm. Calyx two-thirds as long as corolla, pilose, with connivent teeth; lateral petals rather longer than keel; keel pubescent. Pod *c.* 15 mm., oblong, with grey or brown hairs, black; seeds *c.* 2 mm., smooth, shining, dark brown.

West Falkland, East Falkland. Introduced before 1848 (Dallimore, 1919) for use as cattle-fencing and planted widely, especially in *Cortaderia* grassland. Native of western Europe but widely introduced in temperate regions of both hemispheres.

2. *Trifolium* L.

Annual or perennial herbs. Leaves alternate, palmately or pinnately 3-foliolate; stipules present, adnate to petiole. Flowers zygomorphic, hermaphrodite. Calyx campanulate, with five subequal teeth. Petals 5, the upper (standard) erect, the lower pair (keel) ± connate by their lower margins. Stamens 10, diadelphous. Ovary superior, 1-celled; style straight or curved; stigma capitate or subcapitate. Fruit an oblong to subglobose, indehiscent pod, opening by two valves or by the top falling off, ± enclosed in the calyx; seeds 1–10.

Several species have been introduced for agronomic purposes.

1. Flowers yellow, up to 7 mm. 2
   Flowers white, pink or purple, if yellow then more than 10 mm. 4
2. Flowers 2–4 mm.; heads up to 25-flowered; standard folded over pod .. .. **3. *dubium***
   Flowers 5–7 mm.; head *c.* 40-flowered; standard not folded 3
3. Stipules half-ovate; pod three or more times as long as style .. .. **4. *campestre***
   Stipules linear-oblong; pod *c.* twice as long as style .. .. **5. *aureum***
4. Stems creeping and rooting at nodes; heads all axillary 5
   Stems not rooting at nodes; at least some heads terminal 6
5. Upper part of calyx inflated in fruit; lateral veins thickened towards margins of leaflets; flowers pinkish or purplish; stipules long-acuminate .. .. **2. *fragiferum***
   Calyx not inflated in fruit; lateral veins not thickened; flowers usually white or pinkish; stipules shortly subulate .. .. **1. *repens***
6. All heads terminal; plant pubescent .. .. **7. *pratense***
   Some heads axillary; plant ± glabrous .. .. **6. *hybridum***

1.** ***T. repens L. 1753, *Sp. Pl.*, p. 767. White or Dutch Clover

D'Urville, 1825, p. 55; Gaudichaud, 1826, p. 138; Birger, 1907, p. 294; Davies, 1939, p. 62–63.

Perennial, glabrous; stems up to 50 cm., creeping, rooted at nodes. Leaves palmately 3-foliolate; leaflets 10–30 mm., obcordate or obovate, with thin ± straight lateral veins; petioles up to 14 cm., erect; stipules ovate to oblong, shortly subulate. Inflorescence many-flowered, 15–25 mm. in diameter, globose; peduncle up to 30 cm. Flowers white or pink; pedicels up to 3(–6) mm. Calyx-tube white with green veins; teeth narrowly triangular, about half as long as tube; standard 8–10 mm., folded over pod. Pod 4–5 mm., oblong; seeds (1–)3–6.

Waste places and cultivated ground near settlements, frequent in sown or improved pastures; fairly common.

West Falkland, East Falkland. Introduced; native of Eurasia.

Specimens. **WF**: TC86 *Sladen 16.xii.1949*†; TC88 *Sladen 17.xii.1949*†. **EF**: UC89 *Sladen 12.v.1949*†.

2.** ***T. fragiferum L. 1753, *Sp. Pl.*, p. 772. Strawberry Clover

Davies, 1939, p. 77.

Similar to *T. repens*, but leaflets with lateral veins markedly thickened and curved backwards towards leaf-margin; stipules long-acuminate; flowers pinkish to purplish, subsessile; upper lip of calyx strongly inflated; standard 5–6 mm.; pod 3 mm., oblong; seeds (1)2.

Sown or improved pastures and hayfields.
East Falkland. Introduced; native of Eurasia.

Specimens. **EF**: VC47 *Davies AF41* (K).

*3. ***T. dubium*** Sibth. 1794, *Fl. Oxon.*, p. 231. Lesser Yellow Trefoil, Suckling Clover

Moore and Sladen, 1965, p. 32.

T. minus Sm. 1802, in Relhan, *Fl. Cantabr.*, Ed. 2, p. 290; Birger, 1907, p. 278; Davies, 1939, p. 62–63.
Medicago minima auct., non (L.) Bartal; Marquand, 1923, p. 370.

Annual, rather hairy; stems up to 25 cm., procumbent or ascending. Leaves pinnately 3-foliolate; leaflets up to 11 mm., obcordate or obovate; petioles short; stipules broadly ovate, acuminate. Inflorescence (4–)10- to 26-flowered, 5–7 mm. in diameter, axillary; peduncles exceeding leaves. Flowers *c.* 3 mm., yellow, turning dark brown; pedicels shorter than calyx-tube; standard narrow, folded over pod. Pod 2·5–3·0 mm., ovoid, usually 1-seeded.

Waste places and cultivated ground near settlements; fairly common. Frequent in sown or improved pastures.

West Falkland, East Falkland. Introduced; native of Europe.

Specimens. **WF**: TD40 *Sladen 29.v.1949*†; TD51 *Sladen 28.v.1949*†; TC66 *Vallentin ii.1911* (K); TC83 *Sladen 21.xii.1949*†; UD11 *Sladen Fa66/49* (BM). **EF**: VC16 *Sladen JB102/4* (BM); VC47 *Davies AF40* (K), *Gibbs in 1944* (K).

*4. ***T. campestre*** Schreb. 1804, in Sturm, *Deutschl. Fl.*, Bd. 4, Abt. 1, Ht. 16. Hop Trefoil

T. procumbens L., nom. ambig.; Davies, 1939, p. 81.

Annual, rather hairy; stems up to *c.* 40 cm., erect or ascending. Leaves pinnately 3-foliolate; leaflets 8–10 mm., obovate or rarely obcordate; petioles up to 10 mm.; stipules half-ovate, acute. Inflorescence many-flowered, (7–)10–15 mm. in diameter, axillary; peduncles exceeding leaves. Flowers 4–5 mm., yellow, turning light brown; pedicels *c.* half as long as calyx-tube; standard not folded. Pod 2·0–2·5 mm., ovoid, several times as long as style, usually 1-seeded.

Sown or improved pastures.
East Falkland. Introduced; native of Eurasia.

Specimens. **EF**: VC47 *Gibbs* (K).

*5. ***T. aureum*** Poll. 1777, *Hist. Pl. Palat.*, **2**, p. 344.

Moore and Sladen, 1965, p. 32.

T. agrarium L., nom. ambig.; Birger, 1907, p. 278.

Similar to *T. campestre* but usually larger; stipules linear-oblong, acuminate; pod oblong, *c.* twice as long as style, usually 2-seeded.

Waste places, sown or improved pastures; not common.
East Falkland. Introduced; native of Eurasia.

Specimens. **EF**: VC47 *Hamilton JH14* (BM).

*6. ***T. hybridum*** L. 1753, *Sp. Pl.*, p. 766. Alsike Clover

Birger, 1907, p. 295; Davies, 1939, p. 81.

Perennial, almost glabrous; stems up to 60 cm., erect or decumbent. Leaves palmately 3-foliolate; leaflets *c.* 20–35 mm., obovate to elliptical; petioles up to *c.* 10 cm.; stipules ovate to oblong, long-acuminate. Inflorescence many-flowered, up to *c.* 25 mm. in diameter, globose, axillary; peduncles up to 15 cm. Flowers pink or whitish; pedicels up to three times as long as calyx-tube. Calyx-tube whitish; teeth subulate, nearly twice as long as tube; standard 7–8 mm., folded over pod. Pod 3–4 mm., oblong, (1–)2-seeded.

Cultivated ground, sown or improved pastures; not common.
East Falkland. Introduced; native of Europe.

Specimens. **EF**: VC47 *Davies AF42* (K).

*7. ***T. pratense*** L. 1753, *Sp. Pl.*, p. 768. Red Clover

Davies, 1939, p. 81.

Perennial, ± pubescent; stems up to 60 cm., erect or decumbent. Leaves pinnately 3-foliolate; leaflets 10–30 mm., obovate to elliptical; petioles up to *c.* 20 cm.; stipules ovate to oblong, acute and setaceous at apex. Inflorescence many-flowered, up to *c.* 30 mm. in diameter, globose to ovoid, terminal, sessile, subtended by a pair of short-petiolate leaves. Flowers pinkish purple, sessile. Calyx-tube narrow; teeth unequal, the longest *c.* twice as long as tube. Pod *c.* 2×2 mm., obovoid, with blunt projections at one side, 1-seeded.

Sown or improved pastures and hayfields.

Introduced; native of Eurasia.

Medicago L.

Similar to *Trifolium* but differing in the reniform, falcate or spirally curved, indehiscent pod which is longer than the calyx.

Three species of this genus have been listed by Davies (1939) as having been introduced, probably to test their agronomic potential, and they are likely to occur in cultivated or disturbed ground near settlements.

M. arabica (L.) Huds. 1762, *Fl. Angl.*, p. 288, Spotted Medick, has yellow flowers and is readily distinguished by its dark-blotched leaflets and spirally curved, spiny pod.

M. lupulina L. 1753, *Sp. Pl.*, p. 779, Black Medick, has yellow flowers and a spineless, reniform pod which is coiled in one almost complete turn.

M. sativa L. 1753, *Sp. Pl.*, p. 778, Lucerne, Alfalfa, is an erect perennial with purple flowers and has a spineless pod which is falcate or coiled in a spiral of 1–3 turns.

3. *Vicia* L.

Climbing or scrambling, perennial herbs. Leaves alternate, pinnate, ending in branched tendril; stipules present. Flowers zygomorphic, hermaphrodite, in axillary racemes. Calyx campanulate, with five unequal teeth, the lower tooth longer than the others. Petals 5, the upper (standard) erect, the lower pair (keel) ± connate by their lower margins. Stamens 10, diadelphous. Ovary superior, 1-celled; style pubescent; stigma terminal. Fruit a ± oblong, compressed pod, dehiscing by two valves; seeds 2–6.

*1. ***V. cracca*** L. 1753, *Sp. Pl.*, p. 735. Tufted Vetch

Moore and Sladen, 1965, p. 32.

Stems 60–200 cm., glabrous or appressed-pubescent. Leaflets 6–15 pairs, 5–30×1–6 mm., linear to ovate-oblong, acute or mucronate; stipules half-sagittate, entire. Racemes 10- to 30-flowered; peduncles 2–10 cm. Flowers 10–12 mm., violet or bluish violet, shortly pedicellate. Calyx-teeth very unequal, the upper minute; tube short. Pod 10–20 mm., glabrous.

Cultivated ground; rare.

East Falkland. Introduced; native of Eurasia.

Specimens. **EF**: VC47 *Davies BF16* (K), *Sladen Fa19/50* (BM).

OXALIDACEAE

1. *Oxalis* L.

Perennial herbs, with fleshy stock producing bulbils. Leaves alternate, palmate; stipules absent. Flowers actinomorphic, hermaphrodite, tristylous. Sepals 5, free. Petals 5, free, contorted. Stamens 10, obdiplo-

stemonous, connate at base. Ovary superior, 5-celled; styles 5, separate; stigmas capitate. Fruit a loculicidal capsule; seeds many, projected to some distance by splitting of elastic integument; endosperm copious, fleshy.

1. *O. enneaphylla* Cav. 1799, *Icon. Descr.*, **5**, p. 7. Scurvy Grass, Vinaigrette

Gaudichaud, 1825, p. 105; 1826, p. 137; D'Urville, 1825, p. 50; Hooker, 1847, p. 253; Melvill, 1903, p. 5; Wright, 1911, p. 317; Skottsberg, 1913, p. 39; Vallentin and Cotton, 1921, pl. 15; Knuth, 1930, p. 238.

O. pumila D'Urv. 1825, *Fl. Is. Mal.*, p. 50; Gaudichaud, 1826, p. 137; Knuth, 1930, p. 237.

Stems rhizomatous, up to *c.* 10 cm., horizontal or ascending, simple or branched, covered in thin, dark brown, linear-lanceolate, glabrous to brownish hirsute scales up to 1·5 cm., usually also with clusters of fleshy, pinkish, bulbiliferous scales, bearing leaves and flowers towards apex. Leaves with lamina 1·0–3·5 cm. in diameter, orbicular in outline, radially palmate, with 4–20 leaflets; leaflets 4–13×3–14 mm., oblanceolate to obovate, usually prominently 2-lobed at apex, cuneate at base, entire, glabrous to densely hirsute, somewhat glaucous to dark green, often purplish at margins; petiole 3–20 cm., 3–6 times as long as lamina, slender, ± erect, glabrous to hirsute. Flowers solitary; peduncles up to 25 cm., usually exceeding leaves, bearing two opposite bracteoles in upper quarter, glabrous or pubescent, especially above bracteoles. Sepals 6–12×2–4 mm., ovate to oblong-ovate, acute to subobtuse or slightly bifid, sericeous-hirsute, pale green to pinkish, with scarious margins; petals 14–25×8–13 mm., obovate, obtuse and usually emarginate, cuneate at base, white or pinkish; outer stamens with large nectary at base of filament; styles sparsely sericeous, longer than, shorter than or intermediate in length between the two whorls of stamens. Capsule ± equalling the sepals, oblong-ellipsoid, sericeous; seeds 2·0–2·5 mm., ovoid-ellipsoid, transversely rugose, pale brown. Self-incompatible, trimorphically heterostylous; reproducing vegetatively by means of bulbils. Fl. XI–II.

Empetrum–Baccharis heath, open soil of coastal slopes and sandy areas; abundant. 0–120 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 48°50′S., Argentinian Andes (lat. 39°S.).

Typus. West Falkland: Port Egmont. *Née* (MA).

Small, densely tomentose forms have been distinguished as var. *pumila* (D'Urv.) Hook. f., but the characters are not consistently associated and such forms are certainly depauperate plants of xeric habitats.

Specimens. **WF**: TC06 *Snyder 1.xii.1852* (CU); TC31 *Moore 719* (K, LP, LTR, S); TC32 *Moore 764* (C, GH, LTR), *Moore 681* (LTR); TC41 *Moore 699* (LTR), *Moore 687* (LTR); TD40 *Skottsberg**; TC58 *Skottsberg**; TC59 *Skottsberg**; TD51 *Blake in 1925–26* (MANCH); TC66 *Skottsberg**; TC68 *Vallentin xii.1910* (MANCH); TC99 *Vallentin 6.i.1911* (K, MANCH); s. loc. *R. Vallentin in 1901–02* (MANCH), *Nichol 17, 18* (BM), *Vallentin* (BM). **EF**: VC28 *Lesson* (K), *Skottsberg**; VC37 *Smith 6* (BM); VC46 *Killingbeck 99* (BIRM), *Holdgate 623* (BIRM); VC47 *Booth 8* (LTR), *Hill xi.1902* (K), *Greene 28* (BIRM, K), *Cunningham i.1868* (K), *Skottsberg**, *Bennett 9.xi.1933* (BM); s. loc. *Wright* (K), *Hooker 69* (BM, K), *McCormick 23.xi.1842* (BM), *Abbott in 1860* (K), *Proges in 1920* (BM).

GERANIACEAE

1. *Geranium* L.

Annual or biennial herbs. Leaves alternate, palmately lobed or divided; stipules present. Flowers actinomorphic, hermaphrodite. Sepals 5, free. Petals 5, free. Stamens 10, obdiplostemonous, in two equal whorls. Ovary superior, 5-celled, with a long beak ending in five filiform stigmas. Fruit a 5-lobed, septicidal capsule; each lobe 1-seeded, rolling upwards at dehiscence and remaining attached by apex of beak.

1. *G. molle L. 1753, *Sp. Pl.*, p. 682. Dove's-foot Cranesbill

Birger, 1907, p. 294; Moore and Sladen, 1965, p. 34.

G. "*intermedium*"; Marquand, 1923, p. 370.

Annual, sparsely to densely pubescent, usually greyish green; stems 6–15 cm., decumbent or ascending, branched from the base. Basal leaves with lamina 1–2 cm. in diameter, orbicular or reniform in outline, divided for half to two-thirds of radius into 5–7 lobes; lobes obovate, shortly and obtusely to subacutely

3-fid, sericeous; petiole 2·5–5·0 cm., hirsute; upper leaves smaller and more deeply lobed, with shorter petioles, or sessile. Flowers in pairs on axillary peduncles 0·7–2·0 cm.; pedicels 4–15 mm. Sepals 4–5 × 2·0–2·5 mm., ovate, shortly mucronate, densely white-hirsute; petals 4–7 × 2·5–3·0 mm., oblong-oblanceolate, deeply emarginate or bifid at apex, pinkish purple. Capsule *c.* 2·5 × 3·5 mm., glabrous; beak *c.* 4 mm., pubescent. Seeds *c.* 1 mm., globose and slightly compressed, glabrous, pale brown. Self-compatible and often self-pollinated.

Waste places near settlements, e.g. paths, and open soil near coast; uncommon.

West Falkland, East Falkland. Introduced; native of Eurasia, widely introduced in temperate regions of both hemispheres.

Specimens. **WF**: TC89 *Vallentin ii.1911* (K, MANCH); TC99 *Vallentin iii & xi.1910* (K). **EF**: VC47 *Booth 39* (LTR).

****G. robertianum*** L. 1753, *Sp. Pl.*, p. 681, Herb Robert. Easily distinguished from the preceding by its larger, palmate leaves which are polygonal in outline, and by its petals which have an entire apex and which are abruptly contracted into a distinct claw.

Cultivated ground; rare.

West Falkland. Introduced; native of Europe.

Specimens. **WF**: TD40 *Sladen JB123/11* (BM).

2. *Erodium* L'Hérit.

Annual herbs. Leaves alternate, pinnate; stipules present. Flowers slightly zygomorphic, hermaphrodite. Sepals 5, free. Petals 5, free. Stamens 10, obdiplostemonous, those opposite the petals without anthers. Ovary superior, 5-celled, with a long beak ending in five filiform stigmas. Fruit a 5-lobed, septicidal capsule; each lobe 1-seeded, twisting spirally at dehiscence and remaining attached by apex of beak.

1.** ***E. cicutarium (L.) L'Hérit. 1789, in Aiton, *Hort. Kew*, Ed. 1, **2**, p. 414. Common Storksbill

Marquand, 1923, p. 370.

Stemless at first, later with stems up to 40 cm., branched from base, subglabrous to white-pilose, sometimes with glandular hairs. Leaves 2–20 cm.; leaflets 3–7 pairs, ± ovate in outline, 1- to 2-pinnatifid or -pinnatisect. Flowers 1–9 in umbel terminal on peduncle 1–7 cm. Sepals 3–7 mm., ovate, acute, larger in fruit; petals 4·5–9·0 × 1·5–3·5 mm., oblanceolate, obtuse, rosy-purple, rarely white, the two upper often with a blackish basal spot. Capsule 5·0–6·5 mm., ± hairy; beak 15–40 mm.

Waste places near settlements; uncommon.

West Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC83 *Vallentin 304* (K); s. loc. *Firmin 33* (K).

EUPHORBIACEAE

1. *Mercurialis* L.

Dioecious or monoecious, annual herbs. Leaves opposite, simple; stipules present. Flowers actinomorphic, unisexual. Sepals 3, united. Petals 0. Stamens 8–15. Ovary superior, 2-celled; styles 2, free. Fruit a capsule with two cells, each with one seed, dehiscing by two valves.

1.** ***M. annua L. 1753, *Sp. Pl.*, p. 1035. Annual Mercury

Moore and Sladen, 1965, p. 32.

Glabrous or sparsely hairy; stems 10–50 cm., often branched from the base. Leaves with lamina 1·5–5·0 × 0·7–2·3 cm., ovate to elliptic-lanceolate, acute, cuneate at base, with crenate-serrate margins; petiole 2–15 mm. Male flowers in clusters on long-pedunculate, axillary spikes; female flowers few, axillary, subsessile, often with 2–3 sterile filaments; calyx-lobes *c.* 0·8–1·0 mm., triangular-ovate, acute. Capsule 2–3 × 3–4 mm., hispid; seeds *c.* 2 mm., ovoid, rugulose.

Weed of cultivated ground; rare.
East Falkland. Introduced; native of Europe.
Specimens. **EF**: VC37 *Sladen JB106/3* (BM).

2. *Euphorbia* L.

Monoecious, annual herbs with milky latex, glabrous. Leaves alternate, simple; stipules absent. Flowers in small groups, including one female and several male, surrounded by an herbaceous involucre having 4–5 conspicuous marginal glands, to form a cyathium; inflorescence of several cyathia in compound umbellate cyme. Perianth absent. Male flower of a single stamen jointed to the pedicel. Female flowers solitary, pedicellate, surrounded by several male flowers; ovary 3-celled; styles 3, free; ovule solitary in each cell. Fruit a 3-valved capsule; seeds many.

1.** ***E. peplus L. 1753, *Sp. Pl.*, p. 456. Petty Spurge
Moore and Sladen, 1965, p. 32.

Stems up to 30 cm., simple or branched. Leaves with lamina 5–22×3–15 mm., ovate, suborbicular or obovate, obtuse, entire; petiole short. Umbel with three rays; rays up to five times dichotomous; involucral glands with two filiform horns. Capsule *c.* 2 mm., trigonous, smooth; valves with two, narrow, dorsal ridges; seeds 1·1–1·4 mm., ovoid, pitted, pale grey.
Cultivated ground near settlements; rare.
East Falkland. Introduced; native of Europe.
Specimens. **EF**: VC08 *Sladen JB117/2* (BM).

THYMELAEACEAE

1. *Drapetes* Banks ex Lam.

Perennial herbs, usually forming loose cushions. Leaves opposite and usually connate at base, simple; stipules absent. Flowers actinomorphic, hermaphrodite, in small terminal capitula enclosed by two involucral bracts. Calyx tubular, with four slightly spreading lobes. Petals 0. Stamens 4, inserted at mouth of calyx-tube, alternate with the lobes. Ovary superior, 1-celled; style long; stigma capitate, with long cylindrical papillae on surface and margins. Fruit a small drupe with a thin, fleshy pericarp; seed 1, closely enveloped by the endocarp.

1. ***D. muscosus*** Banks ex Lam. 1792, *J. Hist. nat. Paris*, **1**, p. 188.
D'Urville, 1825, p. 36; Gaudichaud, 1826, p. 133; Hooker, 1847, p. 343; Birger, 1907, p. 282; Wright, 1911, p. 328; Skottsberg, 1913, p. 41.

Forming rather lax, rarely more compact, cushions or mats 5–14 cm. in diameter and up to 7 cm. high; stems up to 6·0×0·15 cm., rather woody, prostrate or ascending, much-branched, rooting near base, densely covered with dead leaves or with prominent leaf-scars; branches procumbent to ascending or erect, covered with dead leaves in lower half to two-thirds. Leaves 2·5–5·5×1–2 mm., oblanceolate to elliptic-oblanceolate, obtuse, somewhat cucullate, entire, densely sericeous-pilose beneath, glabrous above, sessile, imbricate except on flowering branches. Involucral bracts *c.* 3×2 mm., ovate, obtuse to acute or acuminate, densely hairy, green with purplish centre. Inflorescence (3–)4- to 6-flowered, in fruit held above surface of cushion on elongated, usually black peduncle. Pedicels 0·5–0·75 mm. Perianth-tube *c.* 2·0×0·2 mm., glabrous below, hairy above, white, lilac in the upper part; lobes *c.* 1 mm., ± elliptic-ovate, densely hairy, lilac or purple; stigma purple; receptacle covered with long, stiff hairs which hide the developing fruit. Fruit *c.* 1·5×0·5 mm., ovoid, shrivelled, greyish brown. $2n = 20$. Protandrous. Fl. X–XI. (Fig. 12)
Dwarf shrub heath, feldmark; common but local. 0–705 m.
West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 47°52′S., west Patagonia north to *c.* lat. 47°50′S.
Typus. Straits of Magellan, xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC32 *Moore 684* (K, LTR, P, UC, US); TC51 *Davies BF53* (K); TC76 *Skottsberg**; TC79 *Moore 854* (CHR, K, LP, LTR); TC88 *Skottsberg**; TC99 *Vallentin xii.1911* (MANCH). **EF**: UC58 *Bennett 26.i.1937* (BM); UC76 *Corner 326* (BIRM); UC77 *Moore 607* (C, GH, K, LTR); VC28 *Skottsberg**; VC37 *Holdgate 636* (BIRM), *Moore 511* (BIRM, K, LP, LTR, S); VC47 *Hamilton JH40* (BM), *Skottsberg**; s. loc. *Hooker* (BM).

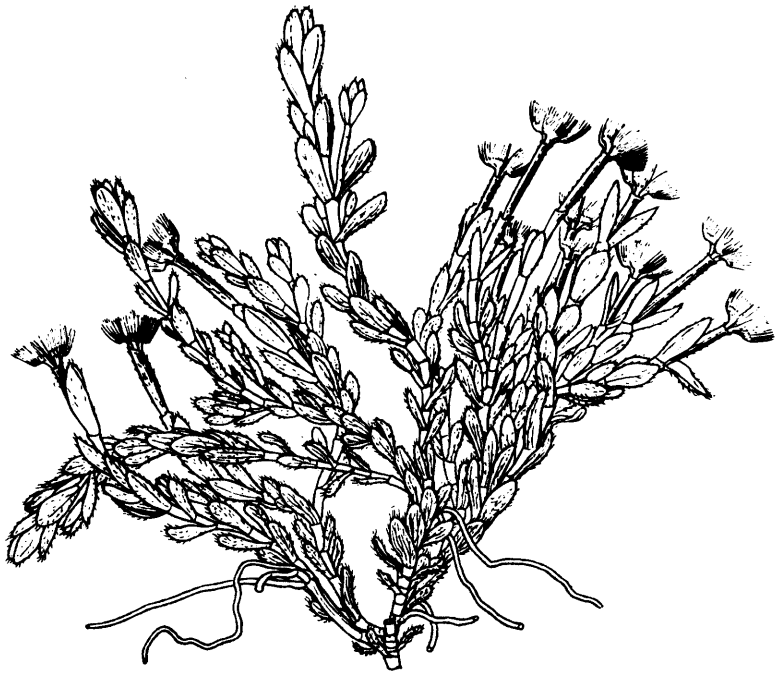


FIGURE 12
Drapetes muscosus; ×2.

VIOLACEAE

1. *Viola* L.

Perennial or annual herbs. Leaves alternate, simple; stipules present. Flowers zygomorphic, hermaphrodite, solitary. Sepals 5, free, prolonged into short appendages below the point of their insertion. Petals 5, free, the lower spurred. Stamens 5, connivent around the ovary; connectives with apical appendages. Ovary superior, 1-celled; style filiform or thickened distally and then often having stigmatic beak. Fruit a 3-valved, loculicidal capsule; seeds numerous, with an elaiosome.

1. Annual; stipules leaf-like, coarsely pinnatifid; flowers cream or with some blue-violet on upper and lateral petals (garden weed) .. .. **3. *arvensis***
   Perennial; stipules not leaf-like, entire to fimbriate; flowers yellow or blue and white 2
2. Plant prostrate, forming moss-like patches; leaves 3-lobed at apex; sepals up to 3 mm.; petals bluish and white .. .. **1. *tridentata***
   Plant erect; leaves entire at apex; sepals 5 mm. or more; petals yellow .. .. .. **2. *maculata***

1. *V. tridentata* Menz. ex DC. 1824, *Prodr.*, **1**, p. 300.

Hooker, 1847, p. 245; Wright, 1911, p. 316; Skottsberg, 1913, p. 40.

Glabrous perennial, forming low moss-like mats; stems up to 30 cm. or more, prostrate or procumbent, rooted at intervals, branched; branches ascending to erect, bearing densely imbricate leaves towards apices of ultimate branchlets. Leaves with lamina 2–7×1·5–4·0 mm., obovate, obtusely to acutely 3-lobed at apex, cuneate at base, entire, rather coriaceous; petioles 2–5 mm., broadly winged; stipules *c.* two-thirds as long as petiole, membranous, scarious, adnate except for small, free, apical point.

Peduncles 5–15 mm., erect, strongly curved just below flower. Sepals 2·0–2·5×1·0–1·3 mm., ovate-oblong, obtuse, green, usually at least partially purple-suffused; appendages *c.* 0·5 mm., rounded; petals 3·0–4·5 mm., the basal longer than the others, oblong to obovate, obtuse, white with purple veins; lateral petals not bearded; spur up to 0·5 mm. Style *c.* 1·6 mm., filiform, geniculate at base, tapering to simple, terminal, stigmatic opening. Capsule 3–4 mm., globose, glabrous, pale greyish brown; seeds *c.* 2 mm., ovoid, smooth, black. $2n = 40$. Self-compatible. Fl. I–II.

Shallow peaty soils, occasionally in *Bolax* cushions; rare. 180–610 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 47°52′S., west Patagonia north to *c.* lat. 47°S.

Typus. Tierra del Fuego: Isla de los Estados, "on the mountain tops", 26.i–12.ii.1787. *Menzies* (BM!).

Specimens. **WF**: TC88 *Moore 887* (BIRM, GH, K, LTR), *Skottsberg**, *R. Vallentin 17.iii.1910* (MANCH). **EF**: UC77 *Corner 355* (LTR), *Moore 593* (K, LP, LTR, S); VC27 *Hooker* (K), *Skottsberg**; VC37 *Skottsberg**; VC47 *Skottsberg**; s. loc. *Hooker* (BM).

2. ***V. maculata*** Cav. 1801, *Icon. Descr.*, **6**, p. 20.

D'Urville, 1825, p. 50; Gaudichaud, 1826, p. 137; Hooker, 1847, p. 244; Birger, 1907, p. 291; Wright, 1911, p. 316; Skottsberg, 1913, p. 40; Vallentin and Cotton, 1921, pl. 11; Sparre, 1949, p. 393.

V. pyroliifolia Poir. 1808, in Lam., *Encycl. Méth. Bot.*, **8**, p. 636; Gaudichaud, 1825, p. 105.

V. macloviana Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 705.

Perennial; stems up to *c.* 10 cm., prostrate or ascending, branched, bearing many scarious stipules, with leaves towards and flowers at apex. Leaves with lamina 1·6–4·0×1·0–2·5 cm., ovate to ovate-lanceolate, obtuse to subacute, cuneate to shallowly cordate at base, crenate to crenate-serrate, with small black marginal glands, sparsely pubescent especially on veins beneath, ciliate; petiole 0·5–4·0 cm., appressed-pubescent; stipules 0·5–*c.* 1·0 cm., lanceolate, long-acuminate, sparsely glandular-fimbriate to fimbriate-dentate, scarious, free. Peduncles 5–10 cm., erect, pubescent. Sepals 6–7×2·0–2·5 mm., lanceolate, acute, entire, subglabrous, green; appendages 0·5–1·0 mm., rounded, emarginate, pubescent, ciliate; petals 10–13 mm., the basal equalling or rather shorter than the others, obovate to oblanceolate, obtuse, or the basal emarginate, yellow with brownish veins; lateral petals bearded; spur 1–2 mm. Style *c.* 2 mm., clavate, slightly geniculate at base, winged at apex, with anterior stigmatic beak. Capsule 7–9 mm., ellipsoid, glabrous; seeds 1·8–2·0 mm., ovoid, smooth, black. Self-compatible. Fl. XI–I.

Dry, open, peaty soils, especially in *Empetrum* heath on coastal slopes, dry sandy areas; common. 3–250 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 40°30′S., east Patagonia north to *c.* lat. 44°S., Andes north to *c.* lat. 34°S.

Typus. Falkland Islands: West Falkland; Port Egmont. *Née* (MA).

In its broad sense *V. maculata* is a rather polymorphic species having the above distribution. Sparre (1949) referred Falkland Islands plants to var. *megaphylla* f. *typica*, which occurs also in Fuegia and Andean Patagonia north to *c.* lat. 46°S. If this infraspecific treatment is followed, the Falkland Islands plants should correctly be termed var. *maculata* f. *maculata*.

Specimens. **WF**: TC04 *Skottsberg**; TC06 *Snyder 3.xii.1852* (CU); TC58 *Skottsberg**; TC65 *Smith i.1937* (BM); TC66 *Skottsberg**; TC68 *Vallentin* (MANCH); UC99 *Booth 79* (LTR); s. loc. *Vallentin* (BM, K), *Blake in 1925–26* (MANCH), *Nichol 9* (BM). **EF**: UC65 *Moore 646* (LTR), *Moore 630* (K, LTR); VC09 *Sladen Fa20/49* (BM); VC28 *Lesson* (K), *Skottsberg**; VC47 *Hill xi.1902* (K), *Skottsberg**; s. loc. *Abbott in 1860* (K), *Hooker 76* (BM, K).

3.** ***V. arvensis Murray 1770, *Prodr. Stirp. Gotting*, p. 73. Field Pansy

Moore and Sladen, 1965, p. 32.

V. tricolor var. *arvensis* L. 1753, *Sp. Pl.*, p. 935; Birger, 1907, p. 294.

Annual; stem up to 40 cm., ± erect, branched, pubescent. Leaves 2–5 cm., very variable, oblong-spathulate, acute or obtuse, ± cuneate at base, crenate or crenate-serrate; stipules half to three-quarters as long as leaves, coarsely pinnatifid with terminal segment lanceolate and leaf-like. Sepals 5–12× 1–2 mm., lanceolate, acute; appendages *c.* 2–4 mm.; petals equalling or shorter than sepals, obovate to oblanceolate, cream, with upper and lateral petals sometimes bluish; spur 1–4 mm. Style *c.* 1·5 mm., geniculate near the base, with subglobose head having wide stigmatic opening. Capsule 5–10×4–6 mm., ellipsoid-oblong, glabrous; seeds *c.* 2 mm., ovoid, smooth, pale brown.

Cultivated or waste ground near settlements; rather common.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa, widely naturalized in cultivated areas of temperate regions.

Specimens. **WF**: TD40 *Sladen*†; TD51 *Sladen JB122/2* (BM); UD11 *Sladen Fa65/49* (BM). **EF**: VC08 *Sladen JB117/4* (BM); VC37 *Sladen Fa9/51* (BM).

MYRTACEAE

1. *Myrteola* Berg

Dwarf shrubs. Leaves opposite, simple; stipules absent. Flowers actinomorphic, hermaphrodite, solitary, with persistent small but leaf-like bracteoles. Calyx with four lobes. Petals 4, free. Stamens 8–12, free. Ovary inferior, 3-celled, surmounted by disc; styles slender, with capitate stigmas. Fruit a berry; seeds numerous.

1. ***M. nummularia*** (Poir.) Berg 1856, *Linnaea*, **27**, p. 397. Malvina Berry

Skottsberg, 1913, p. 41; Vallentin and Cotton, 1921, pl. 20; Kausel, 1942, p. 233.

Myrtus nummularia Poir. 1798, in Lam., *Encycl. Méth. Bot.*, **4**, p. 407; Gaudichaud, 1825, p. 106; 1826, p. 138; D'Urville, 1825, p. 54; Hooker, 1847, p. 276; Melvill, 1903, p. 6; Wright, 1911, p. 318.

Stems up to 40 cm. or more, *c.* 3–4 mm. in diameter, woody, prostrate, branched and intertwined to form often extensive patches, glabrous. Leaves with lamina 3–7 × 2–4 mm., elliptical to elliptic-orbicular, obtuse, cuneate at base, with entire, revolute margins, glabrous, coriaceous; petioles up to 1 mm. Flowers axillary, towards ends of branches; peduncles 1–5 mm. Calyx-lobes 1·0–1·8 × *c.* 1 mm., oblong to oblong-ovate, obtuse, often reddish, coriaceous, persistent in fruit; petals 3·0–4·5 × 1·5–2·5 mm., obovate to oblanceolate, obtuse, white or creamy; style *c.* 1·8 mm.; stigma at same level as anthers. Fruit 4–5 mm., ellipsoid, pinkish to red; seeds *c.* 1·5 mm., reniform, somewhat compressed laterally, smooth, white. $2n = 44$. Self-compatible, facultatively self-pollinated. Fl. XI–I(–II).

Dwarf shrub heath, particularly in damper places, *Cortaderia–Baccharis* association, *Astelia* association, *Sphagnum* bogs; common. 6–701 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to *c.* lat. 47°S., southern Chile (lat. 39°S.).

Typus. ? Straits of Magellan. *Commerson.*

This species is most closely related to *M. oxycoccoides* (Benth.) Berg, which occurs from Peru to central Colombia and Venezuela, and the two may be conspecific.

Specimens. **WF**: TC32 *Moore 738* (LTR, US); TC68 *Vallentin 15.xi.1910* (MANCH); TC79 *Moore 840* (C, CHR, K, LTR); s. loc. *Vallentin in 1909–11* (K), *Snyder 24.xii.1852* (CU), *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); VC09 *Sladen Fa28/49* (BM); VC16 *Sladen 108/8* (BM); VC28 *Gaudichaud* (K), *Sladen JB110/2* (BM); VC37 *Moore 563* (LTR), *Killingbeck 103* (BIRM), *Holdgate 649* (BIRM), *Moore 508* (BIRM, GH, K, LP, LTR, S); VC47 *Booth 13* (LTR), *Greene 19* (BIRM, K), *Hamilton JH37* (BM), *Davies BF4* (K), *Bennett 12.i.1935* (BM); s. loc. *Cunningham ii.1867* (K), *Hooker 25* (K), *Abbott in 1860* (K), *Hill xi.1902* (K).

ONAGRACEAE

1. *Epilobium* L.

Perennial herbs. Leaves opposite, the upper usually alternate, simple; stipules absent. Flowers actinomorphic, hermaphrodite. Sepals 4, free. Petals 4, free. Stamens 8, in two whorls of 4. Ovary inferior, 4-celled; style slender, with capitate stigma. Fruit a long, slender, loculicidal capsule, dehiscing into four valves; seeds numerous, each with a basal plume of long hairs (coma).

1. ***E. cunninghamii*** Hausskn. 1879, *Öst. bot. Z.*, **29**, p. 118. "Native Willow Herb"

Samuelsson, 1923, p. 276; Skottsberg, 1929, p. 305.

E. hookerianum Skottsb. 1916, *K. svenska VetenskAkad. Handl.*, **56**, No. 5, p. 271.
E. valdiviense Hausskn. β *elatior* Hausskn. 1884, *Monogr. Epilob.*, p. 272; *Skottsberg*, 1913, p. 42.
E. tetragonum L. var. *antarcticum* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 270; Wright, 1911, p. 318.

Stem 10–30 cm., erect, branched, leafy, with raised, rather sparsely appressed-pubescent lines. Leaves 2–5 × 0·5–2·5 cm., ovate to oblong or oblong-lanceolate, acute, cuneate to subcordate at base, serrulate,

sparsely appressed-pubescent beneath when young, only ciliate when older, sessile or shortly petiolate. Flowers in leafy racemes terminal on main stem and branches, occasionally axillary and solitary. Peduncles 3–10 mm. Hypanthial tube *c.* 2 mm. Sepals 3–4 × *c.* 1 mm., lanceolate to ovate-lanceolate, acute, pubescent, usually sparsely so, green with pinkish margins; petals equalling or slightly exceeding sepals, oblong-spathulate, emarginate, pinkish; stigma 0·8 mm., held at or just below level of anthers. Capsule 2·0–3·5 cm., with sparsely pubescent raised line on each valve; seeds 1·0–1·5 × 0·5 mm., obovoid, dark olive-green; coma 2–3 mm. $2n = 36$. Self-compatible and normally self-pollinated. Fl. I.

In and on margins of fresh-water streams; rare. 6–30 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 49°S., west Patagonia (*c.* lat. 45°30′S.).

Typus. Chile: Punta Arenas, 28.ii.1868. *Cunningham* (K!).

Specimens. **WF**: TC84 *Vallentin 1.iii.1910* (K, MANCH). **EF**: UC45 *Skottsberg 122* (K); UC54 *Moore 612* (LTR); UC55 *Skottsberg**; UC66 *Moore 640* (GH, K LP, LTR, S, UC); VC36 *Wright* (K); s. loc. *Hooker* (K).

HALORAGACEAE

1. *Myriophyllum* L.

Perennial, aquatic or semi-aquatic herbs with rhizome in the substratum and leafy shoots at least partially submerged. Leaves in whorls, heteromorphic, pinnatisect and simple; stipules absent. Flowers actinomorphic, hermaphrodite, markedly protandrous, in bracteate, terminal spikes. Sepals 4, free. Petals 4, free. Stamens 8. Ovary inferior, 4-celled; stigmas sessile, papillose. Fruit a nut, separating into four 1-seeded nutlets (mericarps).

1. ***M. elatinoides*** Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 105. "Native Water-milfoil"

D'Urville, 1825, p. 54; Gaudichaud, 1826, p. 138, 480; Hooker, 1847, p. 271; Schindler, 1905, p. 91; Birger, 1907, p. 294; Wright, 1911, p. 318; Skottsberg, 1913, p. 42.

M. ternatum Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 106; D'Urville, 1825, p. 54; Gaudichaud, 1826, p. 138, 480.

Stems 10–50 cm. or more, rooting at the lower nodes, branched. Leaves (3)4 in a whorl; submerged leaves 10–20 mm., pinnatisect, with 6–15 capillary segments; uppermost (emergent) leaves 5–14 × 2–7 mm., oblong to elliptic-ovate, obtuse or subacute, entire, sessile, glabrous, often reddish; leaves in transitional zone with increasingly wide segments upwards to become simple but serrate at water surface. Flowers solitary in axils of upper leaves, sessile; bracteole 1, *c.* 1 mm., oblong-lanceolate, pale green with a few small purple teeth. Sepals *c.* 0·5 mm., ovate-triangular, remotely denticulate; petals *c.* 2·5 × 1·3 mm., lanceolate, acute, cucullate, purplish, green towards base, caducous; anthers *c.* 2 mm., *c.* five times as long as filaments; stigma *c.* 1·2 mm. in diameter. Fruit 1·2–1·3 × 1·5–1·8 mm.; mericarps oblong, smooth, dark olive-green or reddish, 1 or 2 often not developing. Fl. I–II.

Fresh-water ponds and slow-flowing streams, often on mud and sand exposed by summer drying-out of ponds; common. 0–*c.* 75 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 49°S., Andean Patagonia north to *c.* lat. 43°S., along the Andes to lat. 0°, Mexico, Macquarie Island, New Zealand, Tasmania.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

All plants examined showed hermaphrodite flowers; the very marked protandry probably accounts for the monoecism reported by Gaudichaud and D'Urville. The stigma does not develop to any extent until well after the dehiscence, and usually the loss, of the anthers.

Specimens. **WF**: TC65 *Skottsberg**; TC69 *Vallentin 65* (K); TC87 *Sladen Fa86/49* (BM); TC89 *Vallentin in 1909–11* (K); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC65 *Skottsberg**; UC76 *Moore 571* (BIRM, C, K, LTR, UC, US); VC28 *Skottsberg*, Gaudichaud* (K); VC37 *Booth 29* (LTR); VC47 *Moore 536* (GH, K, LP, LTR, S); s. loc. *Hooker* (BM, K), *Havers in 1860* (BM).

2. *Gunnera* L.

Dioecious, perennial herbs. Leaves basal, simple; stipules absent. Flowers in a racemose panicle. Sepals 2. Petals 0. Stamens 2. Ovary inferior, 1-celled; stigmas 2, subsessile. Fruit a 1-seeded drupe.

1. ***G. magellanica*** Lam. 1789, *Encycl. Méth. Bot.*, **3**, p. 61. Pig Vine

Hooker, 1847, p. 274; Melvill, 1903, p. 6; Schindler, 1905, p. 112; Birger, 1907, p. 289; Wright, 1911, p. 318; Skottsberg, 1913, p. 43; Vallentin and Cotton, 1921, pl. 19.

G. falklandica Hook. 1842, *Icon. Pl.*, **5**, pl. 489–90.

Misandra magellanica Comm. 1789, in Juss., *Gen. Pl. Par.*, p. 405; Gaudichaud, 1825, p. 106; 1826, p. 138; D'Urville, 1825, p. 56.

Stems 3–20 × 1–3 cm. or more, prostrate, branched, fleshy, rooting at nodes, with leaves and stolons produced at apex of stem and branches. Leaves with lamina 1·5–6·0 × 1·5–8·0 cm., orbicular to reniform, cordate at base, crenate-dentate with usually emarginate and mucronulate teeth, sparsely hairy but densely so on veins and margins; petiole 0·6–*c.* 15·0 × *c.* 0·5 cm., hairy. Inflorescence 1·5–5·0 cm.; peduncle 1·5–7·0 cm., hairy. Male flowers with pedicels 1–2 mm.; female flowers sessile. Sepals *c.* 0·5 mm., triangular-lanceolate, acute, brownish; anthers *c.* 1·5 × 1·0 mm., elliptical, about twice as long as filament; stigmas 2–3 mm., filiform. Drupe 3–5 mm. in diameter, subglobose, scarlet. $2n = 34$. Fl. XI.

All communities but most luxuriant in damp, sheltered places; abundant. 0–705 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 47°S.), Andean Patagonia, north along the Andes to *c.* lat. 1°N.

Typus. "Detroit de Magellan", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC06 *Snyder 3.xii.1852* (CU); TC68 *Vallentin 24.i.1909* (K, MANCH); TD80 *Vallentin ii.1911* (K, MANCH); TC99 *Vallentin ii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol 14* (BM), *Vallentin* (BM). **EF**: UC65 *Moore 1162* (LTR); VC09 *Sladen Fa50/49* (BM); VC28 *Lesson* (K), *Gaudichaud* (K); VC37 *Holdgate 647* (BIRM), *Sladen Fa9/50* (BM); VC46 *Killingbeck 91* (BIRM), *Holdgate 620* (BIRM); VC47 *Hill xi.1902* (K), *Booth 10* (LTR), *Greene 31* (BIRM, K), *Lechler ix.1850* (K); s. loc. *Hooker* (BM, K), *McCormick in 1842* (BM), *Cunningham ii.1867* (K), *Antarct. Exped. in 1901–04* (BM), *Ingram in 1938* (BM).

UMBELLIFERAE

Despite their vegetative diversity, the Falkland Islands members of this family can be identified by the inflorescence, which is a simple or compound umbel, and by the characteristic fruit. The inferior ovary is 2-celled and has two styles which may have an enlarged base (stylopodium). The fruit is dry, of two indehiscent mericarps united by their faces (commissure), and may be terete, or compressed dorsally (parallel to commissure) or laterally (at right-angles to commissure). Each mericarp has five ribs, one dorsal, two lateral (near the edges of the commissure) and two intermediate (between dorsal and lateral ribs), which may be obscure or prominent. At maturity the mericarps normally separate and are usually suspended from the tip of a slender prolongation of the axis (carpophore).

1. *Hydrocotyle* L.

Perennial, creeping herbs. Leaves alternate, simple; stipules present. Flowers actinomorphic, unisexual or hermaphrodite, in a simple umbel. Calyx minutely 5-lobed. Petals 5, free. Stamens 5, alternating with petals. Stylopodium depressed. Fruit strongly compressed laterally; commissure narrow; ribs obscure.

1. ***H. chamaemorus*** Cham. & Schlecht. 1826, *Linnaea*, **1**, p. 363. "Native Pennywort"

Peréz-Moreau, 1938, p. 459.

H. hirta auct., non R. Br.; Skottsberg, 1913, p. 43.

H. skottsbergii Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 710.

Stems up to 15 cm. or more, prostrate, slender, rooted at nodes, glabrous, with leaves borne singly at nodes. Leaves with lamina 0·7–3·0 × 0·5–2·0 cm., orbicular-reniform, cordate at base, shallowly 7- to 8-lobed, glabrous or sparsely hairy; lobes usually with three crenate, rarely serrate or crenulate teeth; petioles 1–15 cm., slender, sparsely deflexed-hairy but more densely so distally; stipules 1·5–2·0 × *c.* 1·5 mm., oblong-ovate, obtuse, entire, brown, scarious. Umbels 8- to 12-flowered, 2–4 mm. in diameter; peduncles 0·3–3·0 cm., slender, glabrous or very sparsely deflexed-hairy, solitary in leaf-axils. Pedicels

0·5–1·0 mm.; bracts 0·4–0·8 mm., triangular, acute to acuminate, scarious, with green midvein. Fruit *c.* 1×2 mm., subglobose, glabrous, yellowish brown. $2n = 72$. Self-compatible and probably usually self-pollinated. Fl. XII–I. (Fig. 13a)

Wet mud and among mosses by streams; rare. 3–15 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 41°S., east Patagonia (lat. 40°48′S.), southern Chile (*c.* lat. 37°S.).

Typus. Chile: prov. Concepción; "ad urbem Talcaguano legimus".

The Falkland Islands plants belong to var. *valdiviana* (Phil.) Reiche, which differs from var. *chamaemorus* in having umbels with 15 or fewer flowers and by the fruit being 2 mm. or less wide.

Specimens. **WF**: TC68 *Skottsberg 58* (K); TC89 *Vallentin ii & iii.1911* (K, MANCH); s. loc. *Hennis in 1914* (BM). **EF**: UC32 *Skottsberg**; UC43 *Skottsberg**; UC54 *Moore 613* (K, LP, LTR), *Skottsberg**; UC65 *Skottsberg**.

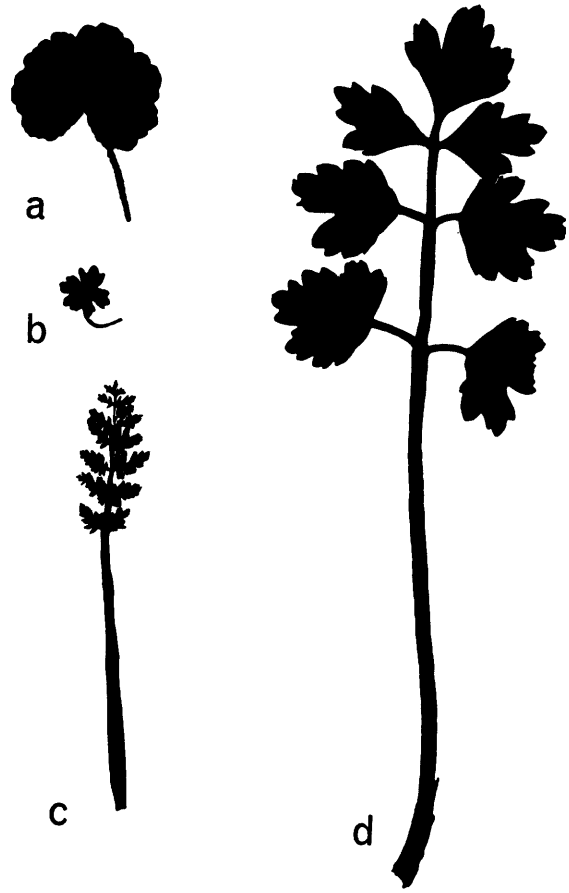


FIGURE 13

Leaf outlines of Umbelliferae.

a. *Hydrocotyle chamaemorus.* b. *Schizeilema ranunculus.*
c. *Oreomyrrhis hookeri.* d. *Apium australe.*

All × $\frac{7}{5}$.

2. *Azorella* Lam.

Perennial herbs, often forming dense cushions; hairs simple or absent. Leaves alternate, usually closely imbricate, simple or 3- to 5-fid; petioles sheathing, persistent on the branches; stipules absent. Flowers actinomorphic, hermaphrodite or unisexual, in a simple umbel; bracteoles present. Calyx 5-lobed. Petals

5, free. Stamens 5, alternating with the petals. Stylopodium usually conical. Fruit terete to compressed dorsally; commissure one-sixth to half as wide as mericarps; ribs prominent to obscure.

1. Plants forming hard cushions 10–50 cm. high 2
   Plants laxly caespitose, or forming firm cushions less than 10 cm. high 3
2. Leaves simple; umbels (4–)5- to 7-flowered .. .. **3. *caespitosa***
   Leaves deeply (3–)5-fid; umbels (1–)2- to 3-flowered .. .. **4. *selago***
3. Leaves simple; sheath conspicuously long-fimbriate or laciniate; umbels (4–)6- to 10(–12)-flowered .. .. **2. *filamentosa***
   Leaves deeply 3-fid; sheath sparsely fimbriate-serrate; umbels usually 2-flowered **1. *lycopodioides***

1. *A. lycopodioides* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 105.

D'Urville, 1825, p. 47; Gaudichaud, 1826, p. 136, 475; Hooker, 1847, p. 284; Melvill, 1903, p. 6; Birger, 1907, p. 281; Wright, 1911, p. 319; Skottsberg, 1913, p. 44.

Stems 3–30 cm., prostrate or ascending, much-branched, lax or intertwined to form firm cushions up to 10 cm. high, glabrous, covered with remains of leaves and sheaths. Leaves imbricate, often densely so, strict; lamina 3–12×2–7 mm., deeply 3-fid; lobes 4–7×0·6–1·0 mm., subulate, pungent, rigid, minutely denticulate, glabrous; petiole 3–5 mm., sheathing in basal half, with the free part fimbrio-dentate to fimbrio-laciniate. Umbels with usually two sessile flowers; peduncle *c.* 2 mm., usually shorter than terminal leaves; bracteoles 2, *c.* 3×2 mm., ovate, cymbiform, apiculate, fimbrio-dentate. Calyx-lobes *c.* 0·5 mm., ovate, acute, entire or crenate; petals *c.* 1 mm., oblong, pale straw-coloured; styles *c.* 0·5 mm., clavate; stylopodium conical. Fruit *c.* 1·5×2·0–2·5 mm., ± ovoid, with commissure half as wide as mericarps, glabrous, yellowish brown; ribs obscure. $2n = 16$. Fl. XI–XII(I). (Fig. 14b)

All communities but particularly dwarf shrub heath and *Bolax* association; abundant. 0–607 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 45°S., Chilean Andes (*c.* lat. 36°30′S.).

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

This species is very similar in habit and general appearance to *Colobanthus subulatus* but it can be readily distinguished by its trifid leaves.

Specimens. **WF**: TC31 *Moore 758* (C, K, LTR, US); TC32 *Moore 734* (BIRM, CHR, K, LTR, P, S); TC42 *Moore 813* (GH, K, LP, LTR, S); TD40 *Moore 907* (K, LP, LTR, S, US), *Moore 902* (LTR); TC68 *Vallentin in 1909–11* (K), *i.1910* (MANCH); TC79 *Moore 855* (C, K, LTR, P, UC, US); TC87 *Sladen 88/49* (BM); TC88 *Skottsberg**; s. loc. *Vallentin* (BM), *Nichol in 1899* (BM). **EF**: UC76 *Corner 337b* (LTR), *Corner 329* (BIRM); UC77 *Moore 605* (K, LTR, S, UC, US); VC28 *Gaudichaud* (K), *Sladen Fa9/49* (BM); VC46 *Killingbeck 695* (BIRM), *Holdgate 628* (BIRM); VC37 *Cunningham i.1868* (K), *Moore 507* (C, GH, K, LTR), *Moore 498* (K, LP, LTR), *Holdgate 653* (BIRM); VC47 *Booth 18* (LTR), *Hamilton JH42* (BM), *Taylor 228, 209, 206, 207* (BIRM), *Lechler 128* (K), *Greene 42* (BIRM, K), *Booth 70* (LTR), *Skottsberg**, *Smith 4* (BM); s. loc. *Hooker* (BM, K), *Havers in 1860* (BM), *Gaudichaud* (BM).

2. *A. filamentosa* Lam. 1783, *Encycl. Méth. Bot.*, **1**, p. 344.

Hooker, 1847, p. 283; Wright, 1911, p. 319; Skottsberg, 1913, p. 44; Vallentin and Cotton, 1921, pl. 21.

A. chamitis Pers. 1805, *Syn. Pl.*, **1**, p. 303; D'Urville, 1825, p. 46; Gaudichaud, 1826, p. 136.

Stems 1·5–10·0 cm., procumbent, ascending or suberect, much-branched, forming rather lax to quite dense clusters, glabrous, covered with remains of leaves and sheaths. Leaves imbricate, usually somewhat spreading; lamina 3–10×1–2 mm., simple, linear-lanceolate to elliptical, long-apiculate, narrowing gradually to petiole, with entire, slightly to strongly revolute margins, usually bluish green; petiole 4–6 mm., sheathing in lower half to one-third, narrowing to lamina, with the free part fimbriate-laciniate, the fimbriae very prominent, white, strigulose. Umbels (4–)6- to 10(–12)-flowered; peduncle 3–8 mm., usually shorter than terminal leaves; bracteoles (3–)4–5, 2·0–2·5×0·5–0·8 mm., ovate, apiculate, sparsely fimbriate-laciniate; pedicels 0·5–3·0 mm. Calyx-lobes 0·2–0·4 mm., ovate, obtuse, entire; petals *c.* 1 mm., obovate-spathulate, obtuse, yellowish brown; styles *c.* 0·5 mm., with small capitate stigma; stylopodium depressed-conical. Fruit 1·5–2·0×*c.* 1·5 mm., ovoid, compressed dorsally, with narrow commissure, glabrous, purplish brown; ribs prominent. $2n = 16$. Fl. XI–I(II). (Fig. 14a)

Empetrum heath, particularly dry, open soil, open sandy areas; fairly common. 0–*c.* 150 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 48°S.

Typus. "Terres magellaniques." *Commerson.*

Like the preceding species, this tends to be more caespitose and form firm cushions under drier conditions.

Specimens. **WF**: TC06 *Skottsberg**; TC32 *Moore 683* (K, LP, LTR); TC65 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin 99* (K); TC78 *Vallentin* (BM); TC99 *Vallentin ii.1911* (MANCH). **EF**: UD62 *Hamilton 1.xii.1935* (BM); VC09 *Sladen Fa25/49* (BM); VC28 *Skottsberg**; VC46 *Holdgate 628a* (BIRM); VC47 *Booth 70* (LTR), *Moore 927* (C, GH, K, LP, LTR, S, UC), *Davies i.1938* (K), *Booth 15* (LTR), *Hill xi.1902* (K); s. loc. *Hooker* (K).

3. *A. caespitosa* Cav. 1799, *Icon. Descr.*, **5**, p. 57.

Hooker, 1847, p. 282; Skottsberg, 1913, p. 43; Vallentin and Cotton, 1921, pl. 22.

Plant forming hard, dense cushions 10–50 cm. high or dense hummocky carpets up to *c.* 150 cm. in diameter; stems up to 1·5 cm. in diameter, ascending to erect, branched, close-set, woody, clothed with remains of leaves, exuding brownish "resin" when damaged. Leaves densely imbricate, usually spreading; lamina 6–9 × 1·0–2·5 mm., lanceolate or ovate-lanceolate, apiculate, narrowing slightly to petiole, distantly serrate-crenate, glabrous or rarely with long white fimbriae *c.* 3 mm. in marginal indentations, shining, green; petiole *c.* 4 mm., partly sheathing in basal one-third, wide, narrowing slightly to lamina, stiffly ciliate to white-fimbriate, fibrous. Umbels (4–)5- to 7(–8)-flowered; peduncle *c.* 1 mm., not exceeding terminal leaves; bracteoles usually 4, 5–6 × *c.* 1 mm., broadly acicular with many long white marginal fimbriae near base; pedicels 0–4 mm. Calyx-lobes *c.* 0·5 mm., ovate, obtuse, subcrenate-serrate; petals *c.* 2 mm., ovate, obtuse, pale brown; styles 1·5–2·0 mm., filiform, with small capitate stigma; stylopodium conical. Fruit 2·5–3·0 × *c.* 3 mm., shortly ovoid to subglobose, compressed dorsally, with the mericarps concave in the centre of the dorsal face, with narrow commissure, glabrous, dark greenish brown; dorsal and lateral ribs prominent. (Fig. 14e)

Soil and pebble screes, rock pavements and among eroding *Empetrum* heath; local. 120–370 m.

West Falkland. Fuegia, west Patagonia north to *c.* lat. 51°S., Andean Patagonia north to *c.* lat. 41°S.

Typus. West Falkland: Port Egmont. *Née* (MA).

This species is most likely to be confused with *Bolax gummifera*, from which it differs in its entire, pointed, shiny leaves; cushion forms of *Plantago barbata* are superficially similar but are usually densely hairy and have spathulate, rather dull leaves and a completely different fruit.

Specimens. **WF**: TC04 *Skottsberg**; TC06 *Skottsberg**; TC31 *Moore 756* (BIRM, C, CHR, GH, K, LP, LTR, S, UC); TD40 *Moore 908* (K, LP, LTR), *Moore 909* (K, LTR), *Skottsberg**; TC68 *Vallentin 9.i.1910* (K), *Vallentin 108* (BM, K), *iii.1910* (MANCH); s. loc. *Davies BF60* (K), *Sulivan* (K), *Blake in 1925–26* (MANCH).

4. *A. selago* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 284.

Skottsberg, 1913, p. 44.

Plant forming dense cushions 10–40 cm. high and up to 100 cm. in diameter; stems up to 0·7 cm. in diameter, ascending to erect, branched, close-set, clothed with remains of leaves. Leaves closely imbricate, appressed; lamina 3–4 × 5–6 mm., broadly and shortly obovate in outline, deeply 3- to 5-fid, contracted rather abruptly into petiole, convex on glabrous, lower surface, concave and with long stiff hairs on upper surface; lobes 1·5–2·0 × *c.* 1 mm., ovate-triangular, apiculate, spreading, entire; petiole *c.* 5 mm., narrowing to lamina, partly sheathing in basal one-third, often sparsely fimbrio-dentate in upper part, glabrous, fibrous. Umbels (1–)2- to 3-flowered; peduncle *c.* 2 mm., not exceeding terminal leaves; bracteoles 2–3, 2·5–3·5 × 0·8–1·5 mm., linear-lanceolate, acute, rigid, serrate near base; pedicels 1·0–2·5 mm. Calyx-lobes *c.* 0·7 mm., ovate-triangular, acute, entire; petals *c.* 1·5 mm., oblong, subacute; styles *c.* 1·5 mm., filiform, with small subcapitate stigmas. Fruit 1·5 × *c.* 1 mm., oblong-obovoid, strongly compressed dorsally, with narrow commissure, glabrous, reddish to yellowish brown; ribs prominent. Fl. XII–I. (Fig. 14c)

Feldmark; locally common. 580–607 m.

West Falkland, East Falkland. Fuegia, Iles de Kerguelen, Iles Crozet, Marion Island, Heard Island, Macquarie Island.

Typus. Tierra del Fuego: Isla Hermite. *Hooker* 8 (K!, lectotype).

The cushions often disintegrate inside so that the living parts form an outer crust.

Specimens. **WF**: TC88 *Moore 884* (BIRM, C, CHR, GH, K, LTR, P, UC), *Skottsberg 77* (K). **EF**: UC76 *Corner 328* (BIRM); UC77 *Moore 604* (K, LP, LTR, S, US).

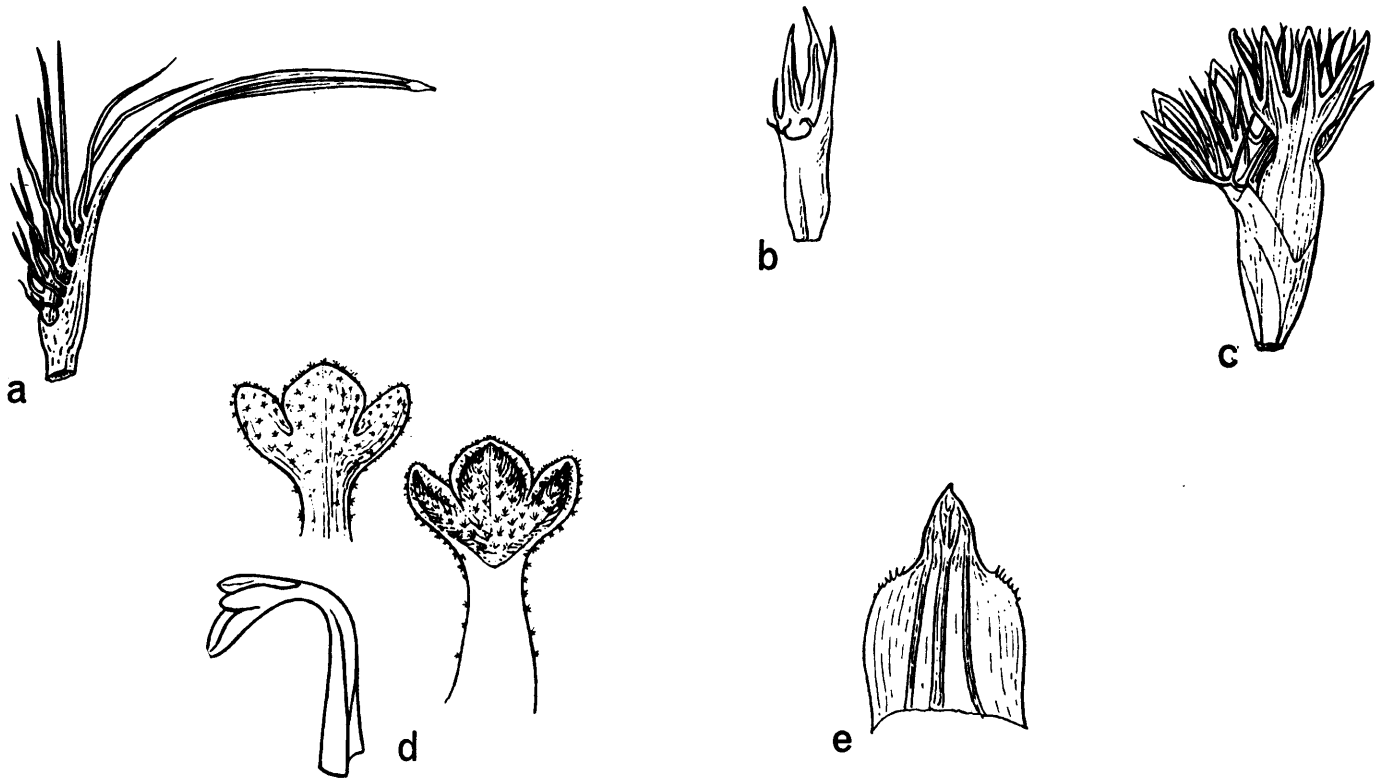


FIGURE 14

Leaves of *Azorella* and *Bolax*.

a. *A. filamentosa*. b. *A. lycopodioides*.
c. *A. selago*. d. *Bolax gummifera*.
e. *A. caespitosa*.

All ×6.

3. *Bolax* Comm.

Gynodioecious, perennial herbs forming dense cushions; hairs stellate. Leaves alternate, closely imbricate, 3-lobed to 3-fid; petioles sheathing, persistent on the branches; stipules absent. Flowers actinomorphic, in a simple umbel. Sepals 5, petaloid. Petals 5, free. Stamens 5, alternating with petals. Stylopodium conical. Fruit compressed dorsally; commissure narrow; ribs mostly prominent.

1. *B. gummifera* (Lam.) Spreng. 1818, *Spec. Umbellif.*, p. 10. Balsam-bog

Skottsberg, 1912*a*, p. 4; 1913, p. 44.

B. columnifer Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 710.
B. glebaria Comm. ex Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 104; D'Urville, 1825, p. 47; Gaudichaud, 1826, p. 136; Hooker, 1847, p. 285; Melvill, 1903, p. 6.
Azorella caespitosa auct., non Cav.; Wright, 1911, p. 319.
Hydrocotyle gummifera Lam. 1789, *Encycl. Méth. Bot.*, **3**, p. 156.

Cushions hard, often hemispherical and up to 130 cm. high, or forming deep carpet up to 300 cm. in diameter. Stems up to *c.* 1·0(–1·5) cm. in diameter, much-branched, close-set, densely covered with leaves which decay towards centre of cushion, usually penetrated by adventitious roots, exuding a white latex which becomes reddish brown on drying. Leaves with lamina 2–7×2–8 mm., cuneate at base, lobed in terminal half to one-third; lobes 1–4×0·5–3·0 mm., ovate to linear-lanceolate, obtuse to subacute, entire, the margins often somewhat involute, densely stellate-hairy, dark green on upper surface, paler beneath; petiole 5–20 mm., wide, narrowing slightly to lamina, sheathing in basal half, glabrous, whitish. Umbels 5- to 15-flowered, the peduncle not exceeding terminal leaves; pedicels 2–5 mm. Female flowers *c.* 3–4 mm. in diameter, the hermaphrodite ones often somewhat smaller. Perianth-segments

c. 1·2–1·4×0·5–0·6 mm., oblong to obovate, obtuse, somewhat laciniate and inflexed at apex, greenish white; styles *c.* 0·8 mm. Fruit 2·0–3·5×1·0–2·5 mm., rather oblong and ± tetragonous, with the mericarps slightly concave dorsally, usually at least sparsely stellate-hairy, dark brown; lateral and at least intermediate ribs prominent. Fl. X–XI. (Fig. 14d)

Dwarf shrub heath, especially in rocky areas, feldmark; abundant. 0–705 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 41°S., west Patagonia (*c.* lat. 44°30′S.).

Typus. Estrecho de Magellan, xii.1767–i.1768. *Commerson* (P).

Specimens. **WF**: TC06 *Snyder 24.xii.1852* (CU); TC32 *Moore 743* (C, K, LTR, UC, US); TC88 *Skottsberg**; TC99 *Vallentin in 1909–11* (K), *ii.1911* (MANCH); s. loc. *R. Vallentin in 1901–02* (MANCH). **EF**: UC77 *Moore 603* (K, LTR); VC28 *Lesson* (K), *Gaudichaud* (K); VC37 *Greene 83* (BIRM, K), *Killingbeck 107* (BIRM), *Booth 48* (LTR), *Moore 520* (GH, LP, LTR, S), *Holdgate 654* (BIRM), *Sladen Fa15/50* (BM); VC47 *Hamilton JH38* (BM), *Hill xi.1902* (K), *Taylor 210* (BIRM), *Bennett 12.i.1935* (BM), *Bennett 1* (BM); s. loc. *Hooker* (K), *Antarct. Exped. in 1901–04* (BM), *Cunningham ii.1869* (K), *Gaudichaud* (BM), *McCormick in 1842* (BM).

4. *Schizeilema* Domin

Glabrous, perennial herbs with creeping and rooting stems. Leaves alternate, 3- to 5-foliolate; stipules present, adnate to petiole. Flowers actinomorphic, hermaphrodite, in a compound or rarely simple umbel; bracts and bracteoles present. Calyx 5-lobed. Petals 5, free. Stamens 5, alternating with the petals. Stylopodium depressed-conical to conical. Fruit ovoid-tetragonous, somewhat compressed dorsally; commissure narrow; ribs mostly prominent.

1. ***S. ranunculus*** (D'Urv.) Domin 1908, *Bot. Jb.*, **40**, p. 576.

Azorella ranunculus D'Urv. 1825, *Fl. Is. Mal.*, p. 46; Gaudichaud, 1826, p. 136; Hooker, 1847, p. 285; Wright, 1911, p. 320; Skottsberg, 1913, p. 44; Vallentin and Cotton, 1921, pl. 22.

Stems up to 30 cm. or more, prostrate, slender, branched, rooting at nodes, with leaves and flowers grouped at nodes, often on short branches. Leaves with lamina 4–10 mm. in diameter, suborbicular in outline, cordate at base, palmately 3- to 5-foliolate; segments 3–5×2·5–5·0 mm., cuneate, with 2–3(–4) acute to rounded, shortly apiculate, entire or rarely somewhat serrate apical lobes, glabrous or with few long setose hairs; petiole 0·5–4·5 cm., slender, glabrous; stipules 1·0–2·5×0·5–1·0 mm., ovate-lanceolate, acute or acuminate, sparsely fimbriate or fimbrio-dentate, membranous, *c.* two-thirds to three-quarters fused to petiole. Umbels 4- to 7(–8)-flowered, 1–2(–3) from a peduncle 5–10 mm.; rays 2–15 mm., with 1(2) bracts; bracts *c.* 3×2 mm., ovate, acute, sparsely fimbriate, white-membranous with green veins; bracteoles 4–6, 2–3×*c.* 1 mm., lanceolate, acute, dentate near base, green, exceeding pedicels; pedicels 1–2 mm. Calyx-lobes up to 0·2 mm., obtuse; petals *c.* 1·0×0·7 mm., obovate-subspathulate, obtuse, whitish with lilac margins; styles *c.* 0–5 mm., filiform, curved, with subcapitate stigmas. Fruit 1·8–2·0×1·5–1·8 mm., glabrous, pale greenish brown; ribs prominent or the intermediate obscure. $2n = 16$. Fl. XI–I. (Fig. 13b)

In damper parts of most communities; widespread but never common. 0–610 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to *c.* lat. 52°20′S., southern Chile (*c.* lat. 41°30′S.).

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

This species is most likely to be confused with the creeping species of *Ranunculus*. If the characteristic umbels are not present, it can be distinguished by the apiculate apices of the leaf-lobes, by the few long setae usually present on the upper surface of the leaf and by the semi-adnate stipules.

Specimens. **WF**: TC32 *Moore 736* (BIRM, C, K, LP, LTR, UC); TC66 *Skottsberg**; TC79 *Moore 853b* (LTR); TC88 *Skottsberg**; TC89 *Vallentin i.1911* (MANCH); TD80 *Vallentin 21.ii.1911* (K). **EF**: UC54 *Moore 617* (LTR); UC65 *Skottsberg**; UC68 *Moore 671* (CHR, GH, LTR); VC16 *Sladen 108/9* (BM); VC28 *Skottsberg**; VC36 *Skottsberg**; VC37 *Sladen JB112/2* (BM), *Sladen Fa4/50* (BM), *Moore 564* (LTR), *Moore 499* (K, LP, LTR); VC47 *Greene 43* (K), *Bennett 16.xii.1917* (BM), *Sladen Fa21/50*; s. loc. *Hooker* (BM, K), *Hennis* (BM).

5. *Oreomyrrhis* Endl.

Perennial herbs. Leaves basal, but alternate, cauline leaves sometimes present, pinnate; petioles sheathing at base; stipules absent. Flowers actinomorphic, hermaphrodite, in simple umbels; bracteoles

present. Calyx minutely 5-lobed. Petals 5, free. Stamens 5, alternating with the petals. Stylopodium conical. Fruit oblong, slightly compressed laterally; commissure as wide as mericarps; ribs prominent.

1. ***O. hookeri*** Math. & Const. 1955, *Univ. Calif. Publs Bot.*, **27**, No. 6, p. 369.

O. andicola (Kunth) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 288, *pro parte*; Birger, 1907, p. 291; Wright, 1911, p. 320; Skottsberg, 1913, p. 45.
Azorella daucoides D'Urv. 1825, *Fl. Is. Mal.*, p. 45; Gaudichaud, 1826, p. 135.

Plant with slender tap-root; stems 0–0·5 cm., branched at or near base. Leaves with lamina 1·5–7·0 × 0·6–3·0 cm., oblong-ovate in outline, with 4–6 pairs of leaflets, sparsely hairy; leaflets 3–15 × 1–8 mm., ovate to oblong, acute to obtuse, pinnatifid, with linear-lanceolate, apiculate segments; petioles 1–5 cm., usually shorter than lamina, slender, with membranous, ciliate sheath in lower one-third. Umbels (8–)12- to 18-flowered; peduncles 1–15 cm., rather stout, densely hirsutulous; bracteoles *c.* 6–8, 2–3 × 1·0–1·5 mm., ovate, acute, entire to shallowly and acutely 2- to 5-lobed, appressed-hirsutulous, ciliate, green, united in basal half to one-third; pedicels 5–15 mm., much longer than bracteoles, ascending, hirsutulous. Calyx-lobes rounded, minute; petals *c.* 1 mm., oblong-ovate, obtuse, white; styles *c.* 0·5 mm., filiform, slightly curved outwards. Fruit 3–4 × 1·0–1·5 mm., tapering towards the apex, with mericarps closely appressed, glabrous, dark brown. $2n = 12$. Self-compatible and self-pollinated. Fl. XI–XII. (Fig. 13c)

Open places in *Empetrum* heath, *Cortaderia* grassland, sandy areas; fairly common. 0–*c.* 60 m.

West Falkland, East Falkland. Fuegia.

Typus. East Falkland: Port Louis "juxta rivulum Bougainville", 20.xi.–18.xii.1822. *D'Urville* 185 (P).

Specimens. **WF**: TC31 *Moore 708* (K, LTR, US); TC46 *Vallentin in 1909–11* (K); TC99 *Vallentin 225* (MANCH); s. loc. *Nichol* (BM). **EF**: UC54 *Moore 614* (K, LP, LTR); VC09 *Sladen 24/49* (BM); VC16 *Sladen JB108/10* (BM); VC47 *Davies AF7* (K), *Hamilton JH39* (BM), *Greene 44* (K); s. loc. *Hooker* (BM, K).

6. *Lilaeopsis* Greene

Glabrous, creeping, perennial herbs. Leaves basal, reduced to fistulose, transversely septate phyllodes, sheathing at base; stipules absent. Flowers actinomorphic, hermaphrodite, in simple umbels; bracteoles present. Calyx minutely 5-lobed. Petals 5, free. Stamens 5, alternating with the petals. Stylopodium depressed. Fruit globose or cylindrical; commissure wide; lateral ribs conspicuously thicker and wider than the others.

1. ***L. macloviana*** (Gandoger) A. W. Hill 1927, *J. Linn. Soc. Botany London*, **47**, p. 545.

Skottsberg, 1929, p. 306; Peréz-Moreau, 1937, p. 300.
Crantzia macloviana Gandoger 1918, *Bull. Soc. bot. Fr.*, **65**, p. 31.
C. lineata auct., non Nutt.; Hooker, 1847, p. 287; Skottsberg, 1913, p. 45; Vallentin and Cotton, 1921, pl. 23.

Stem up to 30 cm. or more, prostrate, branched, rooting at nodes, bearing tufts of leaves and flowers at some nodes. Leaves 1–18 × 0·05–0·2 cm., filiform, obtuse, obscurely septate in dried material; basal sheath 0·6–1·3 cm., membranous, entire. Umbels (4–)5- to 10(–12)-flowered; peduncles 6–8 mm., slender; bracteoles (2–)3–6, 1·5–2·0 × *c.* 1 mm., ovate-lanceolate, obtuse, entire or crenate-serrulate, yellowish green, free; pedicels 1·5–4·0 mm., ascending to pendulous. Calyx-lobes up to *c.* 0·2 mm., rounded, sometimes obsolete; petals *c.* 1·0–1·5 mm., oblong-ovate, subacute, white with reddish tips; styles *c.* 0·5 mm., curved, somewhat clavate. Fruit *c.* 2·0 × 1·6 mm., globose-ovoid with mericarps closely appressed, glabrous, yellowish brown. $2n = 44$. Fl. I–II.

Mud, wet sand, wet rock crevices by sea, in slow-moving fresh water; common. 0–*c.* 10 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Sparrow Cove. *Skottsberg* 101 (UPS).

Specimens. **WF**: TC68 *Vallentin 96* (BM, K); TC89 *Vallentin 23.iii.1911* (MANCH); TC99 *Vallentin i.1911* (MANCH). **EF**: UC58 *Moore 649* (CHR, K, LP, LTR, UC); UC66 *Moore 642* (BIRM, C, GH, K, LTR, S, US); UC73 *Skottsberg**; VC28 *Sladen JB111/7* (BM); VC47 *Skottsberg 96* (K), *Davies AF28* (K), *Moore 526* (K, LP, LTR), *Lamb 2899* (BM), *Skottsberg 10.ii.1908* (K); s. loc. *Hooker* (BM, K), *Hennis in 1914* (BM).

7. *Apium* L.

Glabrous, perennial herbs. Leaves alternate, pinnate, with sheathing petiole; stipules absent. Flowers actinomorphic, hermaphrodite, in compound umbels; bracts and bracteoles absent. Calyx-teeth absent. Petals 5, free. Stamens 5, alternating with the petals. Stylopodium depressed-subconical. Fruit broadly ovoid, somewhat laterally compressed; commissure narrow; ribs very prominent.

1. ***A. australe*** Thouars 1808, *Fl. Tristan d'Acugna*, p. 43. Wild Celery

Skottsberg, 1913, p. 45; Wolff, 1927, p. 32.

A. maclovianum Gandoger 1912, *Bull. Soc. bot. Fr.*, **59**, p. 709.

A. graveolens auct., non L.; Gaudichaud, 1825, p. 105; 1826, p. 135; D'Urville, 1825, p. 45; Hooker, 1847, p. 287; Melvill, 1903, p. 6; Wright, 1911, p. 320.

Plant with slender to rather stout tap-root; stems (0–)5–50 cm., ascending or erect, branched. Leaves with lamina 1–6 × 1–7 cm., oblong to ovate-oblong in outline, with 1–5 pairs of leaflets; leaflets 4–32 × 3–24 mm., obovate and simple or ovate and 3-fid to 3-foliolate; the ultimate segments obovate, deeply 3-fid, occasionally the lobes acutely 2- to 3-dentate; petioles 1·5–10·0 cm., with purplish green, membranous sheath in basal one-quarter to half. Partial umbels (5–)10- to 15-flowered; rays 5–10, 5–20 mm.; pedicels 1–6 mm. Petals 1·0–1·5 mm., suborbicular to oblong-ovate, retuse to emarginate, white, usually pink-tinged; styles *c.* 0·4 mm., filiform, curved. Fruit *c.* 2 × 2 mm., ovoid-globose, glabrous, very pale brown; ribs obtuse. $2n = 22$. Self-compatible and facultatively self-pollinated. Fl. XI–I(II). (Fig. 13d)

Damp places in coastal habitats of all kinds, including *Poa flabellata* association, sometimes by wet places inland; common. 0–45 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 46°50′S., Andean Patagonia (*c.* lat. 42°30′–43°30′S.), southern Chile (*c.* lat. 35°S.), Tristan da Cunha, New Zealand, south-east Australia, Tasmania, Lord Howe Island.

Typus. Tristan da Cunha. *Petit-Thours.*

Falkland Islands plants were included in var. *latisectum* Wolff (l.c.), which occupies the above range of the species and has leaflets with broadly obovate or obcuneate segments.

Specimens. **WF**: TC04 *Skottsberg**; TC05 *Snyder 12.iii.1853* (CU); TC31 *Moore 705* (C, K, LTR, UC); TD40 *Skottsberg**; TC65 *Skottsberg**; TC66 *Skottsberg**; TC83 *Sladen JB121/11* (BM); TC89 *Moore 833* (CHR, K, LTR); TD80 *Vallentin iii.1911* (MANCH); s. loc. *Vallentin in 1909–11* (BM, K), *Snyder 4.xii.1852* (CU), *Blake in 1925–26* (MANCH), *Nichol* (BM). **EF**: VC28 *Skottsberg**; VC46 *Killingbeck 89* (BIRM), *Moore 554* (GH, K, LP, LTR, S); VC47 *Booth 5* (LTR), *Lechler 137* (K), *Davies 4.ii.1938* (K), *Lamb 2898* (BM); VC48 *Holdgate 618* (BIRM); s. loc. *Hooker 62* (K).

ERICACEAE

1. *Pernettya* Gaudich.

Small, evergreen shrubs. Leaves alternate, simple; stipules absent. Flowers actinomorphic, hermaphrodite or female; bracteoles present. Sepals 5, connate at base, persistent, dry in fruit. Corolla urceolate, shortly 5-lobed, caducous after flowering. Stamens 10, inserted on disc; filaments dilated at base. Ovary superior, 5-celled; ovules numerous in each cell. Style 1, cylindrical; stigma capitate. Fruit a berry, with dry basal calyx; seeds many, minute.

1. ***P. pumila*** (L. f.) Hook. 1837, *Icon. Pl.*, **1**, pl. 9. Mountain Berry

Hooker, 1847, p. 326; Skottsberg, 1912*b*, p. 492; 1913, p. 46; Vallentin and Cotton, 1921, pl. 39; Sleumer, 1935, p. 637.

P. empetrifolia (L. f.) Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 102; D'Urville, 1825, p. 39; Gaudichaud, 1826, p. 134; Wright, 1911, p. 325.

P. trinervis Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 24.

Arbutus pumila L. f. 1781, *Suppl.*, p. 239.

Stems up to 60 cm., prostrate to ascending, rarely erect, much-branched, pubescent or rarely glabrous. Leaves 3–8 × 2–4 mm., ovate to elliptic-ovate, acute to obtuse, usually navicular, entire or serrulate, ciliate, glabrous or sparsely appressed-pubescent beneath, shiny, coriaceous, sessile, imbricate. Flowers

solitary in leaf-axils; peduncle 1–10 mm., recurved towards apex, sparsely puberulent, with 2–3 bracteoles near base; bracteoles *c.* 1·5 mm., broadly ovate, napiform, obtuse, ciliate. Calyx-lobes 2·0–2·5 × 1·3–1·5 mm., triangular-ovate, acute to obtuse, somewhat cucullate, entire, ciliate, shiny, somewhat coriaceous, green to purple; corolla 3·0–4·5 mm., white, sometimes pinkish, the lobes 1·0–1·9 × 1·5–1·9 mm., ovate-oblong to ovate-triangular, obtuse, recurved. Fruit 6–12 mm. in diameter, globose, whitish and usually bluish to purplish tinged. $2n = 44$. Sometimes gynodioecious, rarely viviparous. Fl. XI–I.

Dwarf shrub heath, open peat and sand, sometimes with *Astelia*; abundant. 0–607 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Andean Patagonia north to *c.* lat. 41°S., north along the Andes to lat. 36°48′S.

Typus. "Habitat in Tierra del Fuego", 20.xii.1774–3.i.1775. *J. R. & G. Forster.*

Likely to be confused with *Gaultheria antarctica*, which has generally wider, dentate-serrulate, shortly petiolate leaves and a fleshy calyx surrounding the fruiting capsule. Skottsberg (1913) has reported hybrids between the two species, in which the calyx, though fleshy, only partially encloses the capsule.

Specimens. **WF**: TC06 *Snyder 3.xii.1852* (CU); TC50 *Bennett 18.ix.1917* (BM); TC68 *Vallentin iii. & ix.1910* (K), *vi.1909* (MANCH); TC78 *Vallentin in 1909–11* (K); TC88 *Moore 888* (K, LTR), *Vallentin iii.1911* (K, MANCH); TC99 *Vallentin i.1911* (K); s. loc. *Nichol* (BM). **EF**: UC76 *Moore 569* (LTR); UC77 *Moore 595* (LTR, US); VC09 *Sladen Fa29/49* (BM), *Sladen Fa47/49* (BM); VC28 *Gaudichaud* (K); VC37 *Davies BF44* (K), *Moore 513* (LP, LTR, S), *Holdgate 648, 652* (BIRM), *Killingbeck 106* (BIRM); VC46 *Holdgate 632* (BIRM); VC47 *Sladen Fa1/49* (BM), *Booth 14* (LTR), *Greene 41* (BIRM, K), *Moore 535* (C, GH, K, LTR), *Davies BF13* (K), *Lechler 114, 131* (K), *Hooker* (K), *Bennett 9.xii.1917* (BM), *Hill xi.1902* (K); s. loc. *Cunningham ii.1867* (K), *Hennis in 1914* (BM), *Hooker* (BM, CGE), *Antarct. Exped. in 1901–04* (BM), *McCormick* (BM).

2. *Gaultheria* Kalm ex L.

Small, evergreen shrubs. Leaves alternate, simple; stipules absent. Flowers actinomorphic, hermaphrodite or female; bracteoles present. Calyx 5-lobed, persistent, fleshy in fruit. Corolla urceolate, shortly 5-lobed, caducous after flowering. Stamens 10, inserted on disc; filaments dilated at base. Ovary superior, 5-celled; ovules numerous in each cell. Style 1, cylindrical; stigma capitate. Fruit a loculicidal capsule surrounded by the fleshy calyx to appear berry-like; seeds many, minute.

1. ***G. antarctica*** Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, pl. 116. Mountain Berry

Burtt, 1934, p. 401.

G. serpyllifolia (Lam.) Skottsb. 1916, *K. svenska VetenskAkad. Handl.*, **56**, No. 5, p. 282; Skottsberg, 1929, p. 306.
G. microphylla Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 327; Melvill, 1903, p. 7; Wright, 1911, p. 325; Skottsberg, 1913, p. 45; Vallentin and Cotton, 1921, pl. 40.

Stems up to 20 cm., prostrate to ascending or erect, much-branched, rather strigulose. Leaves with lamina 4–10 × 2–4 mm., ovate to ovate- or elliptic-oblong, obtuse, rarely subacute, dentate-serrate, sometimes obscurely so, with margin thickened beneath, glabrous, coriaceous, paler green beneath; petiole short. Flowers 1–2 or 3 in upper leaf-axils; peduncle *c.* 1–2 mm., recurved towards apex, sparsely puberulent, with 3–4 bracteoles along length; bracteoles *c.* 0·5 × 1·0 mm., obtuse. Calyx-lobes 1·2–1·5 × 1·0–1·5 mm., triangular, acute or obtuse, somewhat cucullate, entire, glabrous, shiny, rather coriaceous, purplish; corolla 3–5 mm., white or pinkish, the lobes 1·0–1·8 × 1·0–1·7 mm., ovate-oblong, obtuse, recurved. Fruit 7–11 mm. in diameter, globose to pyriform, white or pink. $2n = 44$. Sometimes gynodioecious. Fl. XII–I.

Dwarf shrub heath, *Astelia* association; uncommon. 0–700 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Chiloe, southern Chile north to *c.* lat. 40°S., Andean Patagonia (lat. 39°S.).

Typus. ? East Falkland. *Hooker* 23 (K) ?

Hybridizes and likely to be confused with *Pernettya pumila*; see notes under that species.

Specimens. **WF**: TC68 *Vallentin v.1910* (K, MANCH); TC88 *Skottsberg**; UC17 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol 29* (BM). **EF**: VC28 *Skottsberg**; VC37 *Holdgate 648a* (BIRM); VC46 *Holdgate 632a* (BIRM); VC47 *Skottsberg 20b* (K), *Hill xi.1902* (K), *Lechler 125* (K); s. loc. *Hooker 23* (K).

3. *Calluna* Salisb.

Small, evergreen shrubs. Leaves opposite, simple; stipules absent. Flowers actinomorphic, hermaphrodite; bracteoles present. Calyx deeply 4-lobed, resembling corolla. Corolla campanulate, shortly

4-lobed, persistent in fruit. Stamens 8, filaments somewhat dilated at base. Ovary superior, 4-celled; ovules numerous in each cell. Style 1, cylindrical; stigma capitate. Fruit a septicidal capsule; seeds few.

1.** ***C. vulgaris (L.) Hull 1808, *Brit. Fl.*, Ed. 2, p. 314. Ling, Heather

Moore and Sladen, 1965, p. 33.

Stems up to 60 cm., decumbent or ascending, branched, rooting near base, bearing numerous, axillary short shoots. Leaves 1–2 × 0·2–0·5 mm., linear, acute or obtuse, the margins strongly revolute so that leaf appears trigonous, sessile, with two short projections at base, glabrous or pubescent, closely imbricate in four rows on axillary shoots. Flowers solitary in upper leaf-axils, forming loose terminal raceme-like inflorescence 3–10 cm.; peduncle 1–3 mm., slightly curved near apex, with four bracteoles forming calyx-like involucre under flower; bracteoles 1·0–1·5 mm., ovate, green, with broad, membranous, ciliate margins. Calyx-lobes *c.* 3 × 1·0–1·5 mm., ovate-oblong, somewhat scarious, pale purple; corolla somewhat smaller than calyx, pale purple, the lobes *c.* 2 mm., ± oblong, obtuse. Fruit 2·0–2·5 mm., globose. Fl. V.

Empetrum heath and *Cortaderia* grassland; rare.

East Falkland. Deliberately planted locally; native of Eurasia.

Only likely to be confused with *Empetrum*, from which it differs in its 4-merous flowers, dry fruit and opposite leaves.

Specimens. **EF**: VD00 *Sladen JB120/5* (BM); VC15 *Sladen JB103/1* (BM); VC28 *Sladen Fa42/49* (BM).

EMPETRACEAE

1. *Empetrum* L.

Small, evergreen, dioecious shrubs. Leaves alternate, simple; stipules absent. Flowers actinomorphic, unisexual; bracts present. Sepals 3, free, petaloid. Petals 3, free. Stamens 3. Ovary superior, 6- to 9-celled; ovules 1 per cell. Style 1, short; stigma with 6–9 dentate-laciniate lobes. Fruit a fleshy drupe with 6–9 stones.

1. ***E. rubrum*** Vahl ex Willd. 1806, *Sp. Pl.*, Ed. 4, **4**, Pt. 2, p. 713. Diddle-dee, "Red Crowberry"

Gaudichaud, 1825, p. 103; 1826, p. 134; D'Urville, 1825, p. 39; Hooker, 1847, p. 345; Melvill, 1903, p. 7; Skottsberg, 1913, p. 40; Vallentin and Cotton, 1921, pl. 51; Good, 1927, p. 519; Löve, 1960, p. 268.

E. maclovianum Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 26.
E. nigrum L. var. *rubrum* DC. 1869, *Prodr.*, **16**, p. 26; Wright, 1911, p. 327.

Stems 10–50 cm., procumbent to ascending, much-branched, usually densely white- to grey-tomentose on younger branches. Leaves 2–5 × 1·2–2·0 mm., oblong to oblong-obovate, obtuse, with strongly revolute margin, densely tomentose and scabrid on curved edge, sessile, shiny, coriaceous, densely imbricate. Flowers solitary in axils of upper leaves, subsessile; bracts 4, *c.* 1·5 × 1·0 mm., oblong-ovate, obtuse, scarious, lanate on margins. Sepals 1·5–1·8 × 1·2–1·5 mm., ovate, obtuse or subacute, yellow to orange, often pink-flushed; petals *c.* 2 × 1 mm. in female flowers, *c.* 3·5 × 1·0 mm. in male flowers, oblong-oblanceolate, obtuse, crimson in male, brownish red in female; filaments *c.* twice as long as petals; stigma dark purple. Fruit 4–6 mm. in diameter, globose, red. $2n = 26$. Fl. X–XI.

Dominant species on better-drained ground; abundant. 0–607 m.

West Falkland, East Falkland. Fuegia, west Patagonia and Andean Patagonia, Chiloe, north along the Andes to *c.* lat. 36°S., Tristan da Cunha.

Typus. "ad fretum Magellanicum", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC32 *Moore 750* (GH, K, LP, LTR, S); TC68 *Vallentin vi. & ix.1910* (K, MANCH); TC88 *Blake ii.1926* (MANCH); s. loc. *R. Vallentin in 1901–02* (MANCH), *Vallentin* (BM). **EF**: VC28 *Gaudichaud* (K); VC46 *Holdgate 619* (BIRM), *Killingbeck 93* (BIRM); VC47 *Greene 46* (BIRM, K), *Sladen Fa33/50* (BM), *Hill xi.1902* (K), *Booth 58* (LTR), *Bennett 12.i.1935* (BM); s. loc. *Darwin iii.1833* (CGE), *Miers 3734* (K), *Wright* (K), *Havers in 1860* (BM), *Cunningham ii.1867* (K), *Ingram* (BM), *Hooker* (BM, K), *McCormick 6.xii.1842* (BM), *Antarct. Exped. in 1901–04* (BM), *Proges in 1920* (BM), *Hennis ii.1911* (BM).

PRIMULACEAE

1. *Primula* L.

Perennial, scapigerous herbs. Leaves basal, simple; stipules absent. Flowers actinomorphic, hermaphrodite, in terminal umbels; bracteoles present. Calyx 5-lobed. Corolla funnel-shaped, with long tube and five lobes. Stamens 5, inserted in corolla tube opposite lobes. Ovary superior, 1-celled; style 1, filiform; stigma capitate. Fruit a capsule dehiscing by five valves; seeds numerous.

1. ***P. magellanica*** Lehm. 1817, *Monogr. Primul.*, p. 62, pl. 6.

Skottsberg, 1913, p. 46; Lourteig, 1967, p. 143.

P. farinosa ssp. *magellanica* (Lehm.) Smith and Forrest 1928, *Notes R. bot. Gdn Edinb.*, **16**, p. 24; Lourteig, 1947, p. 557.
P. farinosa var. *magellanica* (Lehm.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 337; Melvill, 1903, p. 7; Pax and Knuth, 1905, p. 85; Wright, 1911, p. 325; Vallentin and Cotton, 1921, pl. 41; Lourteig, 1942, p. 236.
P. decipiens Duby 1844, in DC., *Prodr.*, **8**, p. 44; Fernald, 1928, p. 74; Skottsberg, 1929, p. 306.
P. farinosa auct., non L.; Gaudichaud, 1825, p. 102; 1826, p. 133; D'Urville, 1825, p. 37.

Leaves 1·4–6·0(–15·0)×0·4–*c.* 1·0(–2·4) cm., oblanceolate to oblanceolate-spathulate, obtuse to subacute, obscurely undulate to crenate-serrate towards apex, glabrous on upper side, glandular-puberulent near margin, with clusters of white spicules beneath. Scape 4–15(–20) cm., 1–3 mm. in diameter, terete, glandular-pubescent, terminating in dense umbel of flowers. Pedicels 1–2×1 mm., scarcely elongating in fruit; bracteole 1, 5–9×1–2 mm., acicular-lanceolate, subacute, with marginal glands. Calyx 7–9×3·5–5·0 mm., usually with white spicules, the lobes 3–4×1–3 mm., triangular-ovate, obtuse to acute, minutely glandular and strigulose on margins; corolla-tube 5–7 mm., yellowish green in throat; limb 10–20 mm. in diameter; lobes 4–6×3–4 mm., cuneate, bifid, with ovate-oblong, obtuse segments, white rarely tinged with lilac; stigma held *c.* 0·5 mm. below to *c.* 1 mm. above the anthers, yellow. Capsule 8–10×3–4 mm., ovoid-cylindrical; seeds 1·0–1·3 mm. in diameter, flattened globose-ovoid, densely round-tuberculate, reddish brown. $2n = 72$. Self-compatible. Fl. X–XII(–I).

Empetrum heath; locally common.

West Falkland, East Falkland. Fuegia, Andean Patagonia, north along the Andes to *c.* lat. 41°08′S.

Typus. Straits of Magellan; Baie de la Rencontre et de l'Isle Elizabeth, xii.1767. *Commerson* (P).

Specimens. **WF**: TC31 *Moore 721* (GH, K, LP, LTR, P, S); TC49 *Bennett ii.1935* (BM); TC78 *Vallentin x.1910* (K), *31.xi.1909* (MANCH); TC99 *Vallentin 20.i.1911* (MANCH); UC19 *Booth 80* (LTR); s. loc. *Blake in 1925–26* (MANCH), *Nichol* (BM), *R. Vallentin in 1901–02* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); VC28 *Sladen Fa34/49* (BM); VC37 *Killingbeck 101* (BIRM); VC46 *Holdgate 639* (BIRM), *Vallentin* (BM); VC47 *Hill xi.1902* (K), *Hamilton JH4* (BM), *Booth 51* (LTR), *Bennett 19.x.1918* (BM), *Smith 25* (BM); s. loc. *Abbott in 1860* (K), *Hamilton JH27* (BM), *Hennis* (BM), *Hooker* (BM, K).

2. *Anagallis* L.

Glabrous, perennial herbs. Leaves opposite or alternate, simple; stipules absent. Flowers actinomorphic, hermaphrodite, solitary; bracteoles absent. Calyx deeply 5(–6)-lobed. Corolla rotate, with short tube, deeply 5(–6)-lobed. Stamens 5(–6), inserted at base of corolla-tube; filaments united into tube for up to *c.* half their length. Ovary superior, 1-celled; style 1, filiform; stigma subcapitate. Fruit a circumscissile capsule; seeds numerous.

1. ***A. alternifolia*** Cav. 1801, *Icon. Descr.*, **6**, p. 3. "Pimpernel"

Hooker, 1847, p. 337; Wright, 1911, p. 325; Skottsberg, 1913, p. 47; Vallentin and Cotton, 1921, pl. 42; Knuth in Pax and Knuth, 1905, p. 330; Lourteig, 1942, p. 255.

Lysimachia repens D'Urv. 1825, *Fl. Is. Mal.*, p. 37; Gaudichaud, 1826, p. 133.

Stems up to 12 cm., prostrate, rooting at nodes, leafy along their length. Leaves with lamina 4–9×2·0–4·5 mm., ovate-elliptical to ovate-orbicular, usually acute, cuneate at base, entire; petiole 1–4 mm., slender. Flowers borne singly in leaf-axils; peduncles 3–10 mm., slender. Calyx-lobes 2–3×*c.* 1 mm., ovate-lanceolate, acute to acuminate or apiculate, green with scarious margins, often pink towards apex. Corolla-lobes 4–5×1·0–2·2 mm., oblong-oblanceolate to obovate, obtuse, rarely retuse, pink to white, darker near base. Capsule 2·5–3·0 mm. in diameter, globose, equalling or slightly exceeding calyx,

greyish brown; seeds *c.* 1 mm., trigonous with slightly convex faces, black with reddish brown tubercles. $2n = 44$. Self-compatible, facultatively self-pollinated. Fl. XII–II.

Moist places, particularly on rather open sandy ground; common. 0–90 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 47°S.), Andean Patagonia, north along the Andes to *c.* lat. 29°S.

Typus. West Falkland: Port Egmont. *Née* (M).

The Falkland Islands plant is recognized as var. *repens* (D'Urv.) Knuth, having the distribution given above. It differs from var. *alternifolia*, which occurs near Valparaiso in central Chile, by its shorter, prostrate stems and by the peduncles being shorter or only slightly longer than the subtending leaves.

Specimens. **WF**: TC41 *Moore 692* (GH, LTR, S); TD40 *Moore 920* (C, LTR, US), *Skottsberg**; TC55 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin* (K); TC99 *Vallentin xii.1910* (MANCH); s. loc. *Blake in 1925–26* (MANCH), *Nichol 38* (BM), *Vallentin* (BM). **EF**: UC65 *Skottsberg**; UD62 *Hamilton 7.i.1936* (BM); UC76 *Moore 582* (K, LTR); VC16 *Sladen JB102/11* (BM); VC28 *Skottsberg**; VC47 *Booth 22* (LTR), *Greene 48* (BIRM, K), *Hooker* (K), *Moore 527* (K, LP, LTR), *Sladen Fa22/50* (BM); s. loc. *Hooker* (BM), *Wright* (K).

PLUMBAGINACEAE

1. *Armeria* Willd.

Perennial herbs. Leaves in basal rosette, simple; stipules absent. Flowers actinomorphic, hermaphrodite, in bracteate cymose spikelets; spikelets grouped into a solitary, compact, terminal, hemispherical head with a scarious involucre, the top of the scape is enclosed by a tubular sheath comprising extensions of the connate bases of the outer involucral bracts. Calyx funnel-shaped, 5-lobed, persistent. Petals 5, united at base, persistent. Stamens 5, inserted at base of petals; filaments dilated towards base. Ovary superior, 1-celled. Styles 5, filiform, united and hairy towards base. Fruit dry, with a thin papery wall, enclosed in the persistent corolla, with five radiating ribs at the top; seed 1.

1. ***A. macloviana*** Cham. 1831, *Linnaea*, **6**, p. 567. Thrift

Wright, 1911, p. 326; Skottsberg, 1913, p. 48; Vallentin and Cotton, 1921, pl. 43.

Statice armeria auct., non L.; Hooker, 1847, p. 339.

S. caespitosa auct., non Poir.; Gaudichaud, 1825, p. 102; 1826, p. 133; D'Urville, 1825, p. 37.

Stock erect, stout, woody, branched. Leaves 2–10 × 0·1–0·4 cm., linear, obtuse or subacute, somewhat fleshy, glabrous. Scapes 6–37 cm., glabrous. Involucral sheath 1–3 cm.; outermost involucral bracts 7–9 × 4–5 mm., oblong-ovate, obtuse or retuse, scarious, green about mid-vein; inner bracts 9–12 × 4–5 mm., ± equalling the head, oblong, obtuse, scarious, pink towards apex; heads 1·8–2·5 cm. in diameter. Pedicels 1–3 mm.; bracts 5–10 × 2–5 mm., obovate to cuneate, irregularly lobed at apex, scarious. Calyx-tube 4–5 mm., with five ribs, hairy at least on the ribs; calyx-lobes 1–2 mm., with awn 0·5–1·0 mm., rarely acute, pink; petals 2·5–3·0 × *c.* 1 mm., oblanceolate to oblong, subacute, pink; anthers green, ± at same level as stigmas. Fruit 3–4 mm.; seed *c.* 2 mm., fusiform, dark brown. $2n = 18$. Self-compatible with A-type pollen and papillate stigmas. Fl. XII–I.

Sandy and rocky seashores; locally common. 0–10 m.

West Falkland, East Falkland. Fuegia, Patagonia south of lat. 50°S.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC41 *Moore 695* (K, LTR); TC68 *Skottsberg**; TC86 *Sladen Fa78/49* (BM); UC16 *Skottsberg**; s. loc. *Firmin 38* (K), *Snyder in 1852–53* (CU), *Blake in 1925–26* (MANCH), *Vallentin* (BM), *Nichol 12* (BM). **EF**: UC58 *Moore 663* (LTR); UC65 *Skottsberg**; VC28 *Skottsberg**, *Sladen JB111/15* (BM); VC36 *Skottsberg**; VC46 *Killingbeck 87* (BIRM); VC47 *Booth 4* (LTR), *Moore 928* (K), *Moore 542* (BIRM, CHR, GH, K, LP, LTR, S), *Davies BF17* (K), *Smith 26* (BM); s. loc. *Hooker* (BM, K), *McCormick in 1841* (BM).

GENTIANACEAE

1. *Gentianella* Moench

Glabrous, perennial herbs. Leaves opposite, simple; stipules absent. Flowers actinomorphic, hermaphrodite, in lax dichasium. Calyx tubular, 5-lobed. Corolla with ± cylindrical tube and spreading limb, 5-lobed, persistent in fruit. Stamens 5, alternating with corolla-lobes, inserted near base of corolla-tube.

Ovary superior, 1-celled; stigmas 2, subsessile, persistent in fruit. Fruit a septicidal capsule, dehiscing by two valves from apex; seeds numerous, small.

1. *G. magellanica* (Gaudich.) Fabris, **comb. nov.**

Gentiana magellanica Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 102; D'Urville, 1825, p. 38; Gaudichaud, 1826, p. 134; Hooker, 1847, p. 328; Melvill, 1903, p. 7; Wright, 1911, p. 326; Skottsberg, 1913, p. 48; Vallentin and Cotton, 1921, pl. 44.

Stems 3–15 cm., erect, simple or branched, usually above the middle. Basal leaves 6–13 × 1–5 mm., oblong to oblanceolate, obtuse to acute, entire, sessile; cauline leaves 5–25 × 2–9 mm., ovate to ovate- or oblong-lanceolate, acute to obtuse, entire, sessile. Calyx 7–12 mm., the lobes 4·5–9·0 × 1–3 mm., oblong to oblong-lanceolate, acute or apiculate, entire, green; corolla equalling to twice as long as calyx, the lobes about as long as tube, ovate-lanceolate, obtuse to subacute, erect or spreading, pale lilac, often white at base. Anthers and stigmas at same level. Capsule 10–18 × 2–3 mm., fusiform-ovoid, dark brown; seeds *c.* 1 mm., broadly ovoid, minutely reticulate, greenish. Self-compatible; flowers almost certainly cleistogamous under some conditions. Fl. I–II.

Damp areas in *Cortaderia* grassland, *Empetrum–Blechnum* heath; locally common. 0–210 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 48°S.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC31 *Moore 714* (GH, K, LTR); TC51 *Moore 790* (CHR, K, LTR); TC79 *Moore 863* (K, LTR); TC84 *Vallentin 1.iii.1910* (MANCH); UC19 *Booth 78* (LTR); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH). **EF**: UC66 *Moore 637* (BIRM, K, LTR, S); UC74 *Skottsberg**; UC76 *Skottsberg**; VC27 *Sladen JB112/1* (BM); VC28 *Skottsberg**; VC36 *Skottsberg**; VC47 *Booth 28* (LTR), *Moore 528* (K, LP, LTR), *Vallentin* (BM); s. loc. *Hooker* (BM).

RUBIACEAE

1. *Galium* L.

Perennial herbs with tetragonous stems. Leaves and leaf-like stipules in whorls of 4–7, simple. Flowers actinomorphic, hermaphrodite, in small axillary cymes or solitary in leaf-axils. Calyx a minute, annular ring. Corolla rotate, with short tube and 3–4 lobes. Stamens 3–4, alternating with corolla-lobes, inserted in corolla-tube. Ovary inferior, 2-celled; styles 2, short, connate in basal half; stigmas capitate. Fruit didymous, of two 1-seeded mericarps, with seed-testa adhering to the pericarp.

Leaves (5–)6–8 in a whorl, apiculate, the margins with small forward-directed prickles. **2. *saxatile***
Leaves 4 in a whorl, not apiculate, usually without marginal prickles .. .. **1. *antarcticum***

1. *G. antarcticum* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 303. "Antarctic Bedstraw"

Wright, 1911, p. 320; Skottsberg, 1913, p. 52; Vallentin and Cotton, 1921, pl. 25.

G. trifidum auct., non L.; D'Urville, 1825, p. 45; Gaudichaud, 1826, p. 135.

Stems 2–25 cm., decumbent, sparingly branched, very slender, with few small, downward-directed prickles on angles, forming low mats. Leaves and stipules in whorls of 4, 3–10 × 1–2 mm., oblanceolate to elliptic-oblong, obtuse, tapering to base, entire, glabrous, sessile. Flowers solitary in leaf-axils, subsessile or on peduncles 1–2 mm. (up to 4 mm. in fruit). Corolla-tube up to *c.* 1 mm.; corolla-lobes 1·5–1·8 × 0·8–1·0 mm., ovate to triangular-ovate, acute, white. Fruit 2·5–3·5 mm. wide, didymous, grey-black, glabrous, smooth. $2n = 22$. Fl. XI–I.

Moist places in *Cortaderia* and *Empetrum* association, coastal communities and along streams; common. 0–210 m.

West Falkland, East Falkland. Fuegia, west and Andean Patagonia north to *c.* lat. 48°S., South Georgia, Iles Crozet, Iles de Kerguelen.

Typus. Tierra del Fuego: Bahia Buen Successo, i.1769. *Banks and Solander.*

Specimens. **WF**: TC06 *Snyder 3.xii.1852* (CU); TD40 *Sladen JB123/9* (BM), *Skottsberg**; TC50 *Moore 785* (C, CHR, K, LTR, P, US); TC55 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin 29.xii.1909* (MANCH), *in 1909–11* (K); TC99 *Vallentin ii.1911* (MANCH); UC19 *Booth 81* (LTR); s. loc. *Blake in 1925–26* (MANCH), *Nichol* (BM), *Vallentin* (BM). **EF**: UC65

*Skottsberg**; UD62 *Hamilton 3.ii.1936* (BM), *3.xii.1935* (BM); VC09 *Sladen Fa53/49* (BM); VC28 *Lesson* (K), *Skottsberg**; VC36 *Skottsberg**; VC46 *Moore 553* (GH, K, LP, LTR, S); VC47 *Cunningham i.1868* (K), *Booth 23* (LTR), *Hill xi.1902* (K), *Greene 29/1* (K); VC48 *Sladen Fa6/49* (BM), *Holdgate 613* (BIRM); s. loc. *Darwin iii.1834* (CGE, K), *Hennis* (BM), *Hooker* (BM).

2. ***G. saxatile*** L. 1753, *Sp. Pl.*, p. 106. Heath Bedstraw

Moore and Sladen, 1965, p. 32.

Stems 5–25 cm., much-branched, glabrous, forming mats with numerous prostrate non-flowering branches and decumbent or ascending flowering shoots. Leaves and stipules in whorls of (5–)6–8, 3–8 × 1–3 mm., obovate to oblanceolate, apiculate, tapering to base, with small, forward-directed marginal prickles, sessile. Flowers in small axillary cymes; pedicels 1–2 mm. Corolla-tube *c.* 0·5 mm.; corolla-lobes 1·0–1·5 × *c.* 0·8 mm., triangular-ovate, acute, white. Fruit 1·5–2·0 mm. wide, didymous, glabrous, covered with acute tubercles. Fl. I–II.

Improved *Cortaderia* grassland near settlements and open ground on coast; local. 0–90 m.

West Falkland, East Falkland. Introduced, probably with grass seed; native of western Europe and North America.

Specimens. **WF**: TD51 *Hansen comm. Sladen in 1950* (BM). **EF**: UC58 *Moore 648* (GH, K, LP, LTR, S, US); VC47 *Booth 52* (LTR).

2. *Nertera* Banks & Sol. ex Gaertn.

Glabrous, perennial herbs, slightly foetid when bruised. Leaves opposite, simple; stipules present. Flowers actinomorphic, hermaphrodite, solitary, sessile in leaf-axils or terminal. Calyx truncate. Corolla subcampanulate, with short tube and four lobes. Stamens 4, alternating with corolla-lobes and inserted at base of tube. Ovary inferior, 2-celled, with one ovule per cell; styles 2, filiform. Fruit a fleshy drupe with two stones.

1. ***N. depressa*** Banks & Sol. ex Gaertn. 1788, *Fruct. Sem. Pl.*, **1**, p. 124.

Gaudichaud, 1825, p. 104; 1826, p. 135; D'Urville, 1825, p. 45; Hooker, 1847, p. 303; Melvill, 1903, p. 6; Wright, 1911, p. 320; Skottsberg, 1913, p. 52; Vallentin and Cotton, 1921, pl. 24.

Stems up to *c.* 50 cm., up to *c.* 1 mm. in diameter, prostrate, much-branched, rooting at nodes, forming low mats. Leaves with lamina 2·5–6·0 × 2–5 mm., ovate to orbicular-ovate, rarely triangular-ovate, obtuse, rarely shortly apiculate, truncate or cuneate at base, with entire somewhat thickened margins; petioles 1–3 mm., winged above; stipules *c.* 0·5 mm., triangular, thick. Corolla-tube 0·5–0·8 mm.; corolla-lobes *c.* 1·5 × 0·8 mm., ovate-oblong, acute, minutely glandular on margins, pale green; styles 1·5–2·0 mm., curved. Fruit 4–5 mm. in diameter, globose, bright red. Strongly protogynous. Fl. XII–II.

Wet rocks and soil, especially near sea, sometimes in damp areas among *Cortaderia* and *Empetrum*; common. 0–*c.* 280 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Chiloe, Andean Patagonia (*c.* lat. 41°10′S.), Tristan da Cunha, Auckland Island, Chatham Islands, New Zealand, Australia, New Guinea.

Typus. "In regionibus antarctis." *Banks and Solander.*

Specimens. **WF**: TC41 *Moore 693* (BIRM, C, GH, K, LTR, P); TD40 *Moore 901* (CHR, K, LTR); TD51 *Sladen 122/20* (BM); TC68 *Vallentin in 1909–11* (K, MANCH); TC99 *Vallentin i. & ii.1911* (MANCH); s. loc. *Blake iv.1926* (MANCH), *Vallentin* (BM), *Nichol 47* (BM). **EF**: UC58 *Moore 652* (K, LP, LTR, S, US); VC28 *Gaudichaud* (K), *Skottsberg**; VC37 *Moore 502* (K, LTR), *Holdgate 640* (BIRM); VC38 *Sladen JB110/1* (BM); VC47 *Greene 15* (BIRM, K), *Hill xi.1902* (K), *Booth 44* (LTR), *Brit. Grahamland Exped. 295* (BM); s. loc. *Hooker* (BM, K), *Hennis* (BM).

BORAGINACEAE

1. *Myosotis* L.

Pubescent, annual or perennial herbs. Leaves alternate, simple; stipules absent. Flowers actinomorphic, hermaphrodite, in lax terminal ebracteate cymes. Calyx campanulate, deeply 5-lobed. Corolla rotate, 5-lobed, with throat closed by five short notched scales. Stamens 5, alternating with corolla-lobes and inserted in tube. Ovary superior, 4-celled; style 1, short; stigma capitate. Fruit of four nutlets.

*1. ***M. discolor*** Pers. 1774, in Murray, *Syst. Veg.*, Ed. 14, p. 190. Yellow and Blue Forget-me-not

Moore and Sladen, 1965, p. 32.

Annual; stems 8–20 cm., erect. Leaves 8–40×2–6 mm., oblong-lanceolate, the lower obtuse and narrowed to base, the upper acute and sessile. Pedicels 0·5–2·0 mm., ascending, shorter than calyx in fruit. Calyx 2·0–3·5 mm., the teeth *c.* half total length, oblong-lanceolate, erect in fruit; corolla *c.* 2 mm. in diameter, at first yellow or white, usually blue later; tube about twice as long as calyx; style equalling or exceeding calyx. Nutlets *c.* 1·25×0·5 mm., ovoid, obtuse, dark brown or almost black.

Disturbed ground near settlements; occasional.

West Falkland. Introduced; native of western Europe.

Specimens. WF: TD51 *Hamilton JH56* (BM); TC88 *Sladen Fa111/49* (BM).

M. arvensis (L.) Hill 1764, *Veg. Syst.*, **7**, p. 55, a native of Eurasia, was reported near Port Stanley by Birger (1907, p. 294). It can be distinguished from the preceding species by the corolla being always blue, the corolla-tube shorter than the calyx and the fruiting pedicels up to twice as long as the calyx.

CALLITRICHACEAE

1. *Callitriche* L.

Glabrous, monoecious, annual or perennial, aquatic or subaquatic herbs. Leaves opposite, simple; stipules absent. Flowers solitary, sessile, axillary, female in lower, male in upper axils. Bracteoles 2, caducous, or absent. Perianth absent. Stamen 1. Ovary 4-celled by secondary septation; styles 2, long, free, papillose. Fruit 4-lobed, the lobes separating into four drupelets at maturity.

1. ***C. antarctica*** Engelm. ex Hegel. 1867, *Verh. bot. Ver. Prov. Brandenb.*, **9**, p. 20.

Wright, 1911, p. 319; Skottsberg, 1913, p. 40; Fassett, 1951, p. 166; Mason, 1959, p. 312; Schotsman, 1961, p. 224.

Callitriche verna auct., non L.; D'Urville, 1825, p. 55; Gaudichaud, 1826, p. 138; Hooker, 1847, p. 272.

Stems 3–15 cm. on land, up to 45 cm. in water, decumbent to suberect, branched, slender, rooted at nodes in lower part at least, leafy, forming loose mats. Leaves 3–18×1·5–3·5 mm., elliptic-obovate to oblanceolate-spathulate, obtuse or sometimes retuse, entire, glabrous, scarious and connate at base. Bracteoles 3–4×*c.* 0·4 mm., linear-lanceolate, acute, scarious. Filaments (2–)6–9 mm.; styles 1·5–2·0 mm. Fruit 0·9–1·3×1·1–1·5 mm., with rounded lobes and wide, shallow commissural groove, dark brown. $2n = 40$. Fl. XII–I.

Slow-moving or stationary fresh water, damp soil and rock crevices; common. 0–110 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 49°10′S., Andean Patagonia (*c.* lat. 49°S.), South Georgia, Prince Edward Islands, Iles Crozet, Iles de Kerguelen, Heard Island, Macquarie Island, ? Auckland Island, Chatham Islands, Tasmania.

Typus. ? Campbell Island. *Hooker* (BM!)?

When vegetative, this species is most likely to be confused with *Montia fontana*, with which it often grows, but it can normally be distinguished by its rather conspicuous stomata which tend to give the leaf a minutely speckled appearance, especially when dry.

Specimens. WF: TC04 *Skottsberg**; TC31 *Moore 753* (C, K, LTR, P, US); TC40 *Moore 776* (CHR, K, LP, LTR, UC); TD40 *Moore 911* (K, LTR), *Skottsberg**; TC89 *Vallentin 136* (MANCH); TC96 *Sladen Fa124/49* (BM). EF: UC66 *Moore 643* (BIRM, GH, K, LTR, S); UC73 *Skottsberg**; VC28 *Skottsberg**; VC46 *Killingbeck 90* (BIRM); VC47 *Skottsberg**, *Moore 540* (K, LP, LTR), *Hill xi.1902* (K); VC48 *Bennett 30.x.1935* (BM); s. loc. *Hooker* (K).

LABIATAE

1. *Scutellaria* L.

Creeping, perennial herbs. Leaves opposite, simple; stipules absent. Flowers zygomorphic, hermaphrodite, solitary in axils of upper leaves. Calyx 2-lipped, the lips entire. Corolla 2-lipped, the upper

lip entire, the lower 3-lobed, with the middle lobe larger. Stamens 4, the outer pair longer. Ovary superior, of two carpels; each carpel with two ovules, appearing 4-lobed; style simple below, with two branches distally. Fruit of four nutlets, included in the persistent calyx.

1. ***S. nummulariifolia*** Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 336.

Epling, 1938, p. 137; Moore, 1967*a*, p. 17.

Stems 3–8 cm., ascending from long prostrate rooting base, branched from the base, pubescent. Leaves with lamina 5–10 × 3–6 mm., orbicular-obovate, rounded at apex, abruptly cuneate at base, entire, rather glandular-pubescent, subcoriaceous; petiole 2–3 mm., slender. Flowers pinkish purple, often white in throat; pedicels 2–3 mm., puberulent. Calyx 3–4 mm., pubescent; corolla-tube 5–8 mm., subcampanulate; lower lip of corolla 5–7 mm. in diameter, hairy inside, with small free obtuse lateral lobes, the upper lip somewhat shorter, obtuse. Fruit 4–6 mm.; nutlets *c.* 3–4 × 1·5 mm., somewhat pyriform, prominently tuberculate, black or dark brown. Fl. V.

Among stones on beach above high-water mark; very rare. Sea-level.

West Falkland. Fuegia, Andean Patagonia north to lat. 45°12′S., east Patagonia (*c.* lat. 49°S.).

Typus. Tierra del Fuego: east coast. *Darwin* (K).

Specimens. **WF**: TC84 *Vallentin 2.v.1916* (K).

2. *Lamium* L.

Annual herbs with ± tetragonous stems. Leaves opposite, simple; stipules absent. Flowers zygomorphic, hermaphrodite, in dense whorls in axils of ± leaf-like bracts. Calyx tubular or tubular-campanulate, with five subequal mucronate teeth. Corolla 2-lipped, with well-developed tube, the upper lip compressed to form a hood, the lower with one prominent central and two very small lateral lobes. Stamens 4, the outer pair longer, inserted in corolla-tube, alternating with the corolla-lobes. Ovary superior, 4-celled by secondary septation. Style simple below, with two branches distally. Fruit of four trigonous nutlets.

1. Whorls of inflorescence rather distant; bracts, at least the upper, sessile .. **3. *amplexicaule***
   Whorls of inflorescence closely spaced; bracts stalked 2
2. Leaves crenate-serrate; corolla with conspicuous ring of hairs towards the base **1. *purpureum***
   Leaves irregularly incised-dentate; corolla without or with a faint ring of hairs towards the base .. .. **2. *hybridum***

1.** ***L. purpureum L. 1753, *Sp. Pl.*, p. 579. Red Dead-nettle

Moore and Sladen, 1965, p. 32.

Stems 10–40 cm., erect, branched from the base, pubescent, often somewhat purple-tinted. Leaves with lamina 1–5 × 1·0–2·5 (–3·5) cm., ovate, obtuse, cordate at base, regularly crenate-serrate; petioles 0·5–3·0 cm. Bracts like leaves but rounded or truncate at base, the upper sometimes subsessile. Inflorescence rather dense. Calyx 5–6 mm., tubular-campanulate, pubescent, the teeth about as long as the tube, spreading in fruit; corolla 10–15 mm., pinkish purple, the tube longer than the calyx, with a ring of hairs near the base.

Gardens and cultivated ground near settlements; locally common.

East Falkland. Introduced; native of western and southern Europe, and North Africa.

Specimens. **EF**: VC08 *Sladen JB117/3* (BM); VC37 *Moore*†.

2.** ***L. hybridum Vill. 1786, *Hist. Pl. Dauph.*, **1**, p. 251. Cut-leaved Dead-nettle

Moore and Sladen, 1965, p. 32.

Differs from *L. purpureum* as follows: plant more slender, less pubescent; leaves often smaller, irregularly incised-dentate, the upper with truncate base and ± decurrent on the petiole; corolla-tube scarcely exceeding the calyx, with or without a faint ring of hairs towards the base.

Gardens and cultivated ground near settlements; rare.

East Falkland. Introduced; native of western, central and southern Europe.

Specimens. **EF**: VC47 *Sladen JB119/1* (BM).

3. *L. amplexicaule L. 1753, *Sp. Pl.*, p. 579. Henbit

Moore and Sladen, 1965, p. 32.

Stems 5–20 cm., erect, with ascending branches from the base, finely pubescent. Leaves with lamina 1·0–2·5×0·7–2·5 cm., orbicular to ovate-orbicular, obtuse, with truncate, rounded or subcordate base, crenate-lobulate; petiole 3–5 cm. in lower leaves. Bracts like leaves but often larger and lobed, sessile or rarely the lower stalked, semi-amplexicaul. Flower-whorls few, rather distant. Calyx 5–6 mm., tubular, densely white-hirsute, the teeth usually rather shorter than the tube, connivent in fruit; corolla up to *c.* 15 mm., pinkish purple, the tube shorter than to much-exceeding the calyx, glabrous inside.

In gardens near settlements; rare.

East Falkland. Introduced; native of Eurasia and North Africa.

Specimens. **EF**: VC47 *Sladen Fa17/50* (BM).

3. *Mentha* L.

Pleasantly smelling, perennial, rhizomatous herbs with ± tetragonous stems. Leaves opposite, simple; stipules absent. Flowers weakly zygomorphic, hermaphrodite, small, in terminal spike. Calyx tubular, with five subequal teeth. Corolla with four subequal lobes but the upper usually wider. Stamens 4, the outer pair longer, alternating with corolla-lobes, inserted in corolla-tube. Ovary superior, 4-celled by secondary septation; style simple below, with two branches distally. Fruit of four ovoid nutlets.

1. *M. x piperita L. 1753, *Sp. Pl.*, p. 576. Peppermint

Plant smelling and tasting of peppermint. Stems 20–40 cm., erect, usually branched, sparsely hairy, reddish or purplish. Leaves with lamina 2·0–4·5×0·6–1·5 cm., lanceolate, acute, cuneate or rarely subcordate at base, serrate, usually sparsely hairy; petiole 2–12 mm. Spike 1·5–4·0 cm., ± oblong, usually interrupted at base; bracts lanceolate, *c.* equalling flowers, the lowest 1–2 pairs longer and leaf-like. Calyx 3–4 mm., the tube glabrous, ± glandular, the teeth subulate, long-ciliate; corolla 6–8 mm., reddish purple.

Damp places near settlements; rare.

West Falkland. Introduced; native of the British Isles.

This hybrid is cultivated as a source of peppermint and was probably introduced as a pot-herb.

Specimens. **WF**: TC99 *Vallentin ii.1911* (MANCH).

SCROPHULARIACEAE

1. *Limosella* L.

Glabrous, annual or perennial herbs, creeping by runners. Leaves basal, simple; stipules absent. Flowers weakly zygomorphic, hermaphrodite. Calyx 5-lobed. Corolla rotate, irregularly 5-lobed, with short tube. Stamens 4, inserted in corolla-tube, alternating with corolla-lobes, the upper absent. Ovary superior, 2-celled, with numerous ovules; style terminal, filiform; stigma bilobed. Fruit a septicidal capsule with incomplete septum; seeds numerous.

1. *L. australis* R. Br. 1810, *Prodr. Fl. Nov. Holl.*, **1**, p. 443.

Lourteig, 1964, p. 164; Moore and Sladen, 1965, p. 31.

L. tenuifolia Nutt. 1817, *J. Acad. nat. Sci. Philad.*, **1**, p. 115; Gaudichaud, 1825, p. 102; 1826, p. 133; D'Urville, 1825, p. 38.

L. aquatica L. var. *tenuifolia* (Nutt.) Hook. f. 1847, *Fl. Antarct.*, **I**, Pt. 2, p. 334; Wright, 1911, p. 326; Skottsberg, 1913, p. 50.

Leaves in basal clusters of 3–12, 6–25 × *c.* 0·3 mm., linear to linear-spathulate, obtuse, entire. Flowers solitary, axillary; peduncle 10–16 mm., slender. Calyx 2·0–2·5 mm., the lobes *c.* 0·5–0·8 mm., unequal, triangular-ovate, acute, green, often purple-tinted; corolla 2·7–3·3 mm., white or pale lilac, the lobes *c.* 0·8–1·0 mm., unequal, *c.* twice as long as wide, ovate-ligulate, obtuse, with papillose upper surface. Style 1·5–2·0 mm. Capsule 2·5–3·0 × *c.* 2 mm., subglobose; seeds *c.* 0·5 mm., lanceolate-ellipsoid, dark brown. $2n = 48$*. Fl. I.

Wet mud and sand in or by pond margins; rare. 3–60 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia, southern Chile, along the Andes to lat. 0°, southern Brazil, North America, Fernando Po, southern Africa, Madagascar, Iles de Kerguelen, Iles Crozet, Auckland Island, New Zealand, southern and eastern Australia, Tasmania, Europe.

Typus. Australia: Kent's Group; Bass Strait, 1803. *Brown* (BM).

Specimens. **WF**: TD51 *Hamilton JH57* (BM); TC87 *Sladen Fa123/49* (BM). **EF**: UC65 *Skottsberg**; UC76 *Moore 574* (LTR).

2. *Calceolaria* L.

Perennial, suffruticose herbs. Leaves opposite, simple; stipules absent. Flowers zygomorphic, hermaphrodite, 1–several along axillary or terminal peduncles. Calyx subequally 4-lobed, adnate to corolla at base. Corolla unequally 2-lipped, with short tube; lips entire, concave-saccate, the lower large and inflated. Stamens 2, between lips. Ovary superior, 2-celled, with numerous ovules; style terminal, short; stigma subcapitate. Fruit an ovoid-conical, septicidal capsule, with bifid valves; seeds numerous.

Peduncle with single flower; calyx-lobes 4 mm. or more, densely yellowish glandular-pilose .. .. **1. *fothergillii***

Peduncle with two or more flowers; calyx-lobes usually less than 4 mm., sparsely white-hairy .. .. **2. *biflora***

1. *C. fothergillii* Sol. 1789, in Aiton, *Hort. Kew*, Ed. 1, **1**, p. 30. Lady's Slipper

D'Urville, 1825, p. 38; Gaudichaud, 1826, p. 133; Hooker, 1847, p. 332; Kraenzlin, 1907, p. 36; Wright, 1911, p. 326; Skottsberg, 1913, p. 49; Vallentin and Cotton, 1921, pl. 46.

C. darwinii auct., non Benth.; Wright, 1911, p. 326; Vallentin and Cotton, 1921, pl. 45, fig. 10.

Stems 5–16 cm., up to *c.* 3 mm. in diameter, procumbent or ascending, branched and erect towards apex, woody. Leaves with lamina 9–23 × 5–16 mm., ovate-oblong to rhomboid or obovate, obtuse to subacute, cuneate at base, subentire or irregularly and shallowly crenate to crenate-denticulate, densely glandular-pubescent, or more sparsely so beneath; petiole 2–12 mm., narrowly winged, sparsely glandular-pubescent. Peduncle 7–9 cm., usually terminal, erect, densely glandular-pubescent and appressed-hairy, with single terminal flower. Calyx 9–11 mm., subcampanulate; lobes 4–6 × 3·5–6·0 mm., ovate to triangular-ovate, obtuse or retuse, densely yellowish glandular-pilose. Corolla-tube up to 1 mm.; upper lip 4·5–6·0 × 4·0–5·5 mm., equalling to slightly exceeding calyx, oblong-orbicular, concave, yellow; lower lip 11–17 × 8·0–11·5 mm., obovate to oblanceolate, saccate for distal one-fifth, usually yellow with red streaks inside and a broad red stripe outside but sometimes almost entirely red or entirely yellow with small red spots; both lips glandular-pubescent outside. Capsule 9–15 × 5–7 mm., brown; seeds *c.* 1·0 × 0·3 mm., striate, reddish brown. $2n = 18$. Self-compatible, often self-pollinated. Fl. XI–II.

Open, well-drained coastal slopes and dunes; locally fairly common. 3–10 m.

West Falkland, East Falkland. Andean Patagonia (lat. 52°38′–53°38′S.).

Typus. Cultivated in Hort. Bot. Fothergill, 1780. (BM!).

Specimens. **WF**: TC06 *Snyder 1.xii.1852* (CU); TC32 *Moore 769* (BIRM, LTR), *Hamilton 17* (BM); TC41 *Moore 698* (GH, LTR, S); TC58 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin 15.xii.1909* (K, MANCH); TC78 *Vallentin xii.1909* (K, MANCH); TC84 *Cunningham 31.i.1868* (K); TC88 *Vallentin iv.1911* (K), *Sladen Fa96/49* (BM); TD80 *Vallentin* (K); TC99 *Vallentin 9.i.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH), *Vallentin* (BM), *Nichol* (BM). **EF**: UC65 *Moore 645* (K, LP, LTR), *Moore 626* (LTR); VC28 *Lesson* (K); *Skottsberg**; s. loc. *Abbott in 1860* (K), *Hooker 68* (BM, K), *Hennis in 1914* (BM).

2. *C. biflora* Lam. 1785, *Encycl. Méth. Bot.*, **1**, p. 556.

Skottsberg, 1913, p. 48.

C. falklandica (S. Moore) Kraenzlin 1907, in Engler, *Pflanzenreich*, **28** (IV.257C), p. 42; Wright, 1911, p. 326.

Stems up to 2 cm., procumbent to erect, sometimes branched, somewhat woody, bearing flowers and rosette of leaves at apex. Leaves with lamina 15–35 × 11–20 mm., ovate-oblong to obovate, obtuse, cuneate at base, irregularly serrate to crenate-serrate, glabrous on upper surface, white-hairy on margins and veins beneath; petiole 10–20 mm., narrowly winged. Peduncle 9–14 cm., erect, sparsely hairy, with 2–5 flowers on terminal pedicels; pedicels 8–18 mm., sparsely hairy, with short-stipitate glands. Calyx 5–7 mm., subcampanulate; lobes 2·0–3·5 × 2·0–3·3 mm., oblong-ovate to oblong-orbicular, obtuse, sparsely white-hairy, with short-stipitate glands. Corolla-tube 1–2 mm.; upper lip *c.* 4 × 4 mm., shorter than to equalling calyx, oblong-orbicular, concave, yellow; lower lip *c.* 11–13 × 10–14 mm., oblong-obovate, saccate for distal half to one-third, yellow; both lips with short-stipitate glands. Capsule *c.* 8 × 3–4 mm., shortly stipitate-glandular, brown. Fl. XII.

Rare.

West Falkland. Fuegia, Andean Patagonia, north along the Andes to *c.* lat. 30°S.

Typus. "Detroit de Magellan", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC68 *Vallentin in 1909–11* (K).

3. *Hebe* Comm. ex Juss.

Evergreen shrubs. Leaves opposite and decussate, simple; stipules absent. Flowers actinomorphic, hermaphrodite, in bracteate axillary racemes. Calyx deeply 4(–5)-lobed. Corolla tubular, with rotate 4-lobed limb. Stamens 2, inserted in base of corolla-tube. Ovary superior, 2-celled; style long; stigma capitate. Fruit a septicidal capsule, rarely also loculicidally dehiscent; seeds numerous.

1. ***H. elliptica*** (Forst. f.) Pennell 1921, *Rhodora*, **23**, p. 39. Native Boxwood

Veronica decussata Sol. 1789, in Aiton, *Hort. Kew*, Ed. 1, **1**, p. 20; Gaudichaud, 1825, p. 102; 1826, p. 133; D'Urville, 1825, p. 38.

V. elliptica Forst. f. 1786, *Fl. Ins. Aust. Prodr.*, p. 3; Hooker, 1847, p. 334; Wright, 1911, p. 327; Skottsberg, 1913, p. 50; Vallentin and Cotton, 1921, pl. 48.

Shrub up to 3 m.; stems up to 6 cm. in diameter, erect, much-branched; twigs densely usually recurved-pubescent. Leaves with lamina 12–35 × 6–15 mm., elliptical to elliptic- or obovate-oblong, acuminate to subobtuse, cuneate to truncate at base, with entire to irregularly serrulate white-pubescent margins; petiole *c.* 2 mm. Inflorescences 3- to 10-flowered, in axils of upper leaves, slightly exceeding leaves; peduncle 5–10 mm., sparsely pubescent; bracts and bracteoles *c.* 1·0 × 0·5 mm., triangular, puberulent, pale brown; pedicels 2–4 mm., sparsely pubescent. Calyx-lobes 3·0–3·5 × 2–3 mm., ovate, acute, ciliolate. Corolla-tube 2–3 mm.; lobes 5–9 × 4–6 mm., oblanceolate to obovate, obtuse to subacute, white or lilac, sometimes with bluish streaks. Style 4–5 mm. Capsule 5–8 × 3·5–5·0 mm., ovoid, dorsally compressed, erect, with retuse apex; seeds suborbicular, compressed. $2n = 40$. Fl. XII–II. (Plate Vb)

Rocky and sandy coasts, sometimes on degraded *Poa flabellata*; locally common. 0–20 m.

West Falkland. Fuegia, west Patagonia north to lat. 45°53'S., New Zealand.

Typus. "Nova Zeelandia". *Forster* (K).

Specimens. s. loc. *Hooker* (K), *Chartres* (K), *Hennis* (BM). **WF**: TC14 *Skottsberg**; TC42 *Moore 811* (CHR, GH, K, LP, LTR, S); TD40 *Skottsberg**; TC55 *Skottsberg**; TC58 *Skottsberg**; TD51 *Blake in 1925–26* (MANCH); TC66 *Skottsberg**; TC68 *Skottsberg**, *Vallentin iv.1909* (MANCH); TC99 *Vallentin in 1909–11* (K), *7.iii.1911* (MANCH); s. loc. *Vallentin* (BM), *Nichol* (BM).

4. *Veronica* L.

Perennial herbs. Leaves opposite, simple; stipules absent. Flowers zygomorphic, hermaphrodite, in bracteate terminal racemes. Calyx deeply 4-lobed. Corolla with short tube and rotate, 4-lobed limb, the upper lobe the largest. Stamens 2, inserted in base of corolla-tube. Ovary superior, 2-celled, with numerous ovules; style long; stigma capitate. Fruit a septicidal capsule; seeds few.

1.** ***V. serpyllifolia L. 1753, *Sp. Pl.*, p. 12. Thyme-leaved Speedwell

Gaudichaud, 1825, p. 102; 1826, p. 133; D'Urville, 1825, p. 38; Hooker, 1847, p. 334; Wright, 1911, p. 327; Skottsberg, 1913, p. 50; Vallentin and Cotton, 1921, pl. 47.

Stems 2–20 cm., creeping and rooting at nodes when vegetative but flowering stems ascending to erect, sparsely to densely pubescent. Leaves 3–15 × 2·5–7·0 mm., ovate to oblong or ovate-orbicular, obtuse,

rounded at base, entire to shallowly crenulate, glabrous, subsessile or with petiole up to *c.* 1 mm. Racemes up to 32-flowered, 1–9 cm., lax; upper bracts 2–3 × 0·5–1·0 mm., oblanceolate-oblong, ciliolate, the lower longer and somewhat wider, grading into the leaves; pedicels 1·5–4·0 mm., appressed-pubescent. Calyx-lobes 1·7–4·0 × 1–2 mm., oblong-ovate, obtuse, sparsely pubescent and ciliate. Corolla-tube *c.* 1 mm.; corolla-lobes 2–3 mm., oblong, white to pale blue with darker lines. Style 1–2 mm. Capsule 2·0–2·5 × 3·5–4·0 mm., obcordate, laterally compressed, ciliate, pale brown; seeds *c.* 0·5 mm., ovoid, compressed, greenish. Fl. XI–II.

Rather open places in heath and grassland, especially near settlements, often on rather moist ground; common. 0–60 m.

West Falkland, East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions of both hemispheres.

The Falkland Islands plants belong to ssp. *serpyllifolia.*

Specimens. **WF**: TD40 *Moore 913* (LTR); TC68 *Vallentin 13.i.1910* (K); TC79 *Moore 820* (LTR); TC88 *Sladen Fa109/49* (BM); TD80 *Vallentin vii.1911* (K); TC99 *Vallentin xii.1910* (K, MANCH); s. loc. *Vallentin* (BM), *Nichol* (BM). **EF**: UC54 *Moore 615* (LTR); UC65 *Moore 635* (LTR); UC76 *Moore 581* (LTR); VC47 *Hill xi.1902* (K), *Booth 21* (LTR); s. loc. *Darwin iii.1834* (CGE), *Hooker 65* (BM, CGE, K).

5. *Euphrasia* L.

Annual herbs. Leaves opposite, 3-fid; stipules absent. Flowers zygomorphic, hermaphrodite, in a terminal spike, sessile in axils of bracts which resemble the cauline leaves. Calyx campanulate, shortly and equally 4-lobed. Corolla tubular, with two lips; upper lip slightly concave with two lobes; lower lip with three emarginate lobes. Stamens 4, inserted in corolla-tube; anther-lobes pointed at base. Ovary superior, 2-celled, with numerous ovules; style long, slender; stigma capitate. Fruit a septicidal capsule; seeds numerous.

1. ***E. antarctica*** Benth. 1846, in DC., *Prodr.*, **10**, p. 555. "Antarctic Eyebright"

Hooker, 1847, p. 335; Birger, 1907, p. 277; Skottsberg, 1913, p. 51; Vallentin and Cotton, 1921, pl. 45, figs. 1–9.

Stem 0·7–6·5 cm., erect, simple or with suberect branches, slender, deflexed-pubescent, purplish green. Leaves 3–7 × 1–4 mm., cuneiform in outline, deeply 3-fid, sessile, distant below but crowded above; lobes oblong, obtuse, entire, glabrous to sparsely strigulose, often purplish. Bracts 4–7 × 4–6 mm., cuneiform in outline, 3(–4)-fid, green, usually with conspicuous purple stripe; lobes 3–6 × 1–2 mm., triangular to triangular-ovate, acute, entire, sparsely ciliate and glabrous or sparsely strigulose on outer surface. Calyx 4–8 mm.; lobes 1·5–3·0 × 1·0–1·5 mm., ± triangular, obtuse, entire, puberulent towards apex, green with purple-brown apex. Corolla-tube 4–6 mm.; corolla-lobes 1·5–3·0 × 1·0–2·2 mm., oblong to oblong-cuneiform, white or pale lilac, the lower lobes yellowish at base. Style 2·0–3·5 mm. Capsule 4–5 × *c.* 3 mm., shorter than calyx, obovoid, laterally compressed, obtuse; seeds 1·5–1·8 × *c.* 0·75 mm., cylindrical-ovoid, longitudinally striate. $2n = 88$. Probably self-pollinated. Fl. I–II.

Damp places by streams and pools, and in dune slacks; local. 0–15 m.

West Falkland, East Falkland. Fuegia, west Patagonia (lat. 49°10′S.), Andean Patagonia north to *c.* lat. 49°S.

Typus. Chile: Cabo Negro; "ad fretum Magellanicum", i–ii.1834. *Darwin 176* (K!).

This species is hemiparasitic on the roots of *Gunnera* and perhaps also on other associated herbs.

Specimens. **WF**: TC87 *Vallentin 14.ii.1910* (K), *ii.1911* (MANCH). **EF**: UC55 *Moore 624* (CHR, GH, K, LP, LTR), *Skottsberg**; UC64 *Skottsberg**; VC46 *Hamilton 18* (BM); VC47 *Hamilton 43* (BM), *Davies AF31, BF58* (K), *Booth 24* (LTR), *Moore 925* (BIRM, K, LTR, S, US), *Skottsberg 110* (K).

PLANTAGINACEAE

1. *Plantago* L.

Perennial, scapigerous herbs. Leaves all basal or spirally arranged, simple, sheathing at base; stipules absent. Flowers actinomorphic, hermaphrodite, in bracteate racemose heads or cylindrical spikes. Sepals 4, connate at base, sometimes the lower united, persistent. Corolla with short tube, 4-lobed. Stamens 4, inserted in corolla-tube and alternating with lobes. Ovary superior, 2-celled; ovules 2–many in each cell; style 1, simple, with long stigma. Fruit a circumscissile capsule; seeds 1–many.

1. Scape shorter than leaves; inflorescence up to 5 mm.; seeds 4 per capsule .. .. **3. *barbata***
   Scape equalling or exceeding leaves; inflorescence 10 mm. or more; seeds 2 per capsule .. 2
2. Scape deeply furrowed; corolla-lobes with prominent brown midrib .. .. .. **1. *lanceolata***
   Scape not furrowed; corolla-lobes without midrib .. .. **2. *maritima***

1. *P. lanceolata L. 1753, *Sp. Pl.*, p. 113. Ribwort

Birger, 1907, p. 294; Davies, 1939, p. 62.

Stem with long silky hairs. Leaves with lamina (2–)10–*c.* 20 cm., 5–25 mm. wide, lanceolate to ovate-lanceolate, long-cuneate at base, entire or weakly and distantly denticulate, 3- to 5-nerved, glabrous or somewhat pubescent; petiole about half as long as lamina, rarely absent. Inflorescence 1–2(–5) cm.; scapes much exceeding leaves, deeply furrowed. Bracts ovate, acuminate, scarious at apex. Flowers *c.* 4 mm.; corolla brownish, with ovate, acute lobes having prominent brown midribs reaching apex; anthers white. Fruit *c.* 5 mm.; seeds 2.

Cultivated and disturbed ground, including improved grasslands, near settlements; local.

West Falkland, East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions throughout the world.

Specimens. **WF**: TC68 *Davies*†. **EF**: VC47 *Moore*†.

2. *P. maritima* L. 1753, *Sp. Pl.*, p. 114. Sea Plantain

Hooker, 1847, p. 339; Pilger, 1937, p. 169; Skottsberg, 1913, p. 51.

P. juncoides Lam. 1792, *Tabl. Encycl.*, **1**, p. 342; Fernald, 1925, p. 99; Pilger, 1928, p. 87; Skottsberg, 1929, p. 306.

Stem up to 9 cm., procumbent or ascending, stout (up to 3–4 mm. in diameter), simple or branched near apex, woody. Leaves 5–12(–20) cm., 2–5 mm. wide, linear, obtuse or subacute, not or scarcely narrowing at base, sessile, entire or weakly denticulate, faintly 3- to 5-nerved, glabrous or strigulose on nerves and margins, rather fleshy. Inflorescence 1–4(–7) cm.; scapes equalling or exceeding leaves, not furrowed, appressed-hairy. Bracts ovate, 2–3 × 1·5–2·0 mm., obtuse or subacute, sparsely appressed-pubescent. Sepals *c.* 2 × 1 mm., oblong-ovate, obtuse, at least the lower prominently keeled, strigulose on keel, ciliolate; corolla-tube *c.* 1 mm., appressed-pubescent at least near base; corolla-lobes 1·2–1·8 × *c.* 0·5 mm., ovate-triangular, acute or acuminate; anthers pale yellow. Fruit 4–5 mm., ellipsoid, appressed-pubescent distally; seeds 2, *c.* 2 × 1 mm., oblong, flat on one side, slightly winged at one or both ends, smooth, dark brown or black. $2n = 12$*. Self-compatible, wind-pollinated.

Margins of fresh-water ponds near sea; rare.

East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 46°20′S., east Patagonia (lat. 50°–51°30′S.), North America, Europe.

Typus. In Europe.

Hultén (1958) considered that the American representatives of this species should be regarded as ssp. *juncoides* (Lam.) Hultén, since they are self-compatible and 4-seeded in North America, but self-incompatible and 2-seeded in Europe (Gregor, 1939). However, Falkland Islands and at least some Patagonian populations are 2-seeded and self-compatible so that the evidence at present does not justify their separation in a formal infraspecific category.

Specimens. **EF**: UC74 *Skottsberg**.

3. *P. barbata* Forst. f. 1789, *Comment. Gotting.*, Ser. 2, **9**, p. 25.

Skottsberg, 1913, p. 51; 1929, p. 306; Pilger, 1928, p. 100; 1937, p. 108.

P. monanthos D'Urv. 1825, *Fl. Is. Mal.*, p. 37; Gaudichaud, 1826, p. 133; Hooker, 1847, p. 340; Wright, 1911, p. 327.

Stems 1–15 cm., ascending or erect, usually branched, clothed with leaf-bases, often forming low cushions which may attain 50 cm. in diameter and 23 cm. high. Leaves with lamina 1·4–6·0 cm., 2–7 mm. wide, linear to linear-lanceolate, rarely oblanceolate, obtuse to subacute, tapering gradually to base, entire to irregularly and distantly dentate, glabrous or rarely densely white-hirsute above, usually rather fleshy, sessile or with petiole up to as long as lamina. Inflorescence 1- to 4-flowered, 0·3–0·5 cm., sometimes with hairs at base; scapes shorter than leaves, narrowly winged, glabrous or rarely appressed-hairy.

Bracts 2, connate at base, 2·5–3·0×1·5–2·0 mm., ovate, subacute, keeled, entire, glabrous or sparsely ciliate, dark brown, purplish or green with pale membranous margin. Sepals 2·5–3·0×*c.* 1·5 mm., ovate, obtuse to subacute, entire, glabrous or sparsely ciliolate, dark purplish brown or green, with paler membranous margin; corolla-tube 0·5–1·5 mm.; corolla-lobes 1–2×*c.* 0·5 mm., triangular-ovate, acute or acuminate; anthers brownish yellow, sparsely black-pubescent. Fruit 3–5 mm., ellipsoid to ovoid, smooth, glabrous; seeds 4, *c.* 2×0·9–1·3 mm., oblong to obovate, strongly compressed, distinctly winged at one end, smooth, black. $2n = 48$. Self-compatible. Fl. X–I.

Moist sand and soil, rock crevices at or near high-water mark, sometimes on sandy soil away from sea, but always coastal; common. 0–125 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 52°20′S.), Andean Patagonia north to lat. 45°40′S., north along the Andes to *c.* lat. 28°43′S.

Typus. Tierra del Fuego, 20.xii.1774–3.i.1775. *J. R. & G. Forster* (BM!).

A very variable species in habit and leaf-shape, depending upon the degree of exposure of the habitat, often forming small cushions. A very distinctive, hummock-forming population, with densely white-hairy upper surfaces to the leaves, occurs in West Falkland (Port Stephens); this may be referable to var. *caespitosa* (Phil.) Pilger. Falkland Islands representatives of this species have been differentiated as var. *monanthos* (D'Urv.) Pilger, but the distinguishing character (capsule dehiscing below middle) is not constant or satisfactory and suitable subdivision of the species has yet to be attained.

Specimens. **WF**: TC31 *Moore 754* (C, K, LTR, US), *Moore 729* (CHR, GH, K, LP, LTR, S, US); TC65 *Skottsberg**; TC66 *Skottsberg**; TC88 *Hamilton JH54* (BM); TC99 *Vallentin i.1911* (MANCH); s. loc. *Vallentin in 1909–11* (K). **EF**: UC32 *Skottsberg**; UC58 *Moore 658* (GH, LTR); UC65 *Skottsberg**; UC66 *Corner 330* (LTR); VC09 *Sladen Fa26/49, 27/49* (BM); VC28 *Lesson* (K), *Skottsberg**; VC36 *Moore 549* (LP, LTR, S), *Killingbeck 88* (BIRM); VC47 *Skottsberg**, *Moore 529* (K, LTR), *Bennett 9.xii.1917* (BM); s. loc. *Hooker 70* (K).

2. *Littorella* Berg.

Perennial, monoecious, scapigerous, aquatic herbs. Leaves basal, simple, sheathing at base; stipules absent. Flowers actinomorphic, in bracteate spike, with solitary terminal male flower and 2–7(–8) female flowers below. Calyx-lobes 3–4 in male and 2–4 in female flowers. Corolla with short tube, 3- to 4-lobed in male and 2- to 4-lobed in female flowers. Stamens 3–4. Ovary superior, 1-celled; ovule 1(–2); style 1, simple, short. Fruit indehiscent.

1. *L. australis* Griseb. ex Skottsb. 1911, *Svensk bot. Tidskr.*, **5**, p. 137.

Skottsberg, 1913, p. 51; Pilger, 1937, p. 437; Moore and Sladen, 1965, p. 31.

L. australis Griseb. 1857, in Lechler, *Berberid. Amer. Austr.*, p. 53, *nom. nud.*

Stolons slender, long, rooting and producing rosettes of leaves at the nodes. Leaves 13–50×*c.* 1·0–1·5 mm., half-cylindrical and linear-subulate. Scape 0·5–5·0 cm., slender; bracts 2·5×0·75–1·0 mm., ovate, acuminate, about middle of scape. Male flowers with calyx-lobes 3·0–4·5×1·0–1·5 mm., broadly lanceolate, obtuse, connate to about middle, greenish brown with membranous margins; corolla-tube 3·0–3·5 mm., the lobes *c.* 1·5 mm., ovate; stamens 10–13 mm. Female flowers irregularly grouped in basal half of axis or above, sessile, opposite; calyx-lobes 1·5–2·0 mm., linear, acute, membranous; corolla-tube 2·5–4·0 mm., the lobes very small; style 5–6 mm. Fruit *c.* 1·5×0·75 mm., narrowly ovoid, tapering to straight stout beak, smooth with longitudinal ribs, grey-brown. Fl. I.

Clay pond shore; rare. Sea-level.

West Falkland, East Falkland. Andean Patagonia (lat. 48°50′–40°10′S.).

Typus. Chile: Provincia Valdivia; Lago Ranco (as Lago Panguepeuli), "ripis arenosis", ii.1854. *Lechler 1397* (K!).

Specimens. **WF**: TC87 *Sladen Fa97/49* (BM). **EF**: UC74 *Skottsberg**.

VALERIANACEAE

1. *Valeriana* L.

Dioecious, cushion-forming, perennial herbs. Leaves opposite and subdecussate, closely imbricate, simple; stipules absent. Flowers bracteate, in small terminal cymes. Calyx an annular ring, occasionally

minutely 2- to 4-lobed. Corolla funnel-shaped, 5-lobed. Stamens 3, inserted towards the base of corolla-tube, alternating with corolla-lobes. Ovary inferior, apparently 1-celled; style clavate; stigma shortly and irregularly 3-lobed. Fruit a 1-celled nut; seed 1.

1. ***V. sedifolia*** D'Urv. 1825, *Fl. Is. Mal.*, p. 45.

Gaudichaud, 1826, p. 135; Hooker, 1847, p. 304; Skottsberg, 1913, p. 52; Vallentin and Cotton, 1921, pl. 26.
Aretiastrum sedifolium (D'Urv.) Graebn. 1906, *Bot. Jb.*, **37**, p. 478; Skottsberg, 1929, p. 306.

Stems up to 3 mm. in diameter, much-branched especially towards apex, closely appressed to form dense cushions 15–60 cm. in diameter. Leaves 3–4 × 1·0–1·5 mm., oblong-suboblanceolate, obtuse or retuse, narrowing slightly to base, entire, thick and fleshy particularly at apex, glabrous but ciliolate towards base, bright pale green, purple near base. Inflorescence 3- to 7-flowered; pedicels 0·5–1·0 mm.; bracteoles *c.* 1·7 × *c.* 0·5 mm., oblong-lanceolate, obtuse, green, with scarious margin, inserted at about middle of pedicel. Corolla *c.* 1·5 mm., yellow; lobes *c.* 0·5 mm., oblong, obtuse or truncate. Style and stamens slightly exceeding corolla; female flowers with staminodes; male flowers with rudimentary style. Nut 3–4 × 0·5–1·0 mm., narrowly pyriform, *c.* 5-ribbed. $2n = 32$. Fl. XII–I. (Plate IIIc)

Feldmark on highest mountains, rarely in stone pavements near sea-level; local. *c.* 60 m. and 580–705 m.
West Falkland, East Falkland. Fuegia.

Typus. East Falkland: summit of Mount Simon (as Mount Chatellux), 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC31 *Moore 706* (BIRM, C, CHR, GH, K, LP, LTR, US); TC88 *Skottsberg 78* (K), *Moore 886* (K, LP, LTR, S); UC27 *Skottsberg**; s. loc. *Vallentin in 1909–11* (K). **EF**: UC77 *Moore 598* (GH, K, LP, LTR, P, S, UC), *Corner 324* (BIRM); UC97 *D'Urville**.

2. *Valerianella* Mill.

Annual herbs with apparently dichotomous branching. Leaves opposite, simple; stipules absent. Flowers actinomorphic, hermaphrodite, bracteate, solitary in the forks of the branches and in terminal cymes. Calyx a 1-toothed, indistinct, annular ring. Corolla funnel-shaped, 5-lobed. Stamens 3, inserted towards base of corolla-tube, alternating with corolla-lobes. Ovary inferior, 3-celled, one cell fertile with solitary ovule, two cells sterile, usually small; style slightly clavate; stigma 3-fid. Fruit dry, of one 1-seeded cell and two very small and confluent sterile cells, indehiscent.

1.** ***V. locusta (L.) Betcke 1826, *Animad. Bot. Valer.*, p. 10. Lamb's Lettuce, Corn Salad

Moore and Sladen, 1965, p. 32.

Stems 6–25 cm., erect, rather brittle, much-branched, weakly angled, slightly pubescent towards base. Leaves 20–70 × 2–9 mm., entire or sometimes dentate, shortly petiolate or sessile, the lower spathulate and obtuse, the upper oblong and obtuse or subacute. Cymes capitate; bracts *c.* 4 × 1 mm., ciliolate. Flowers *c.* 1–2 mm. in diameter, pale lilac; corolla 1–3 mm., the lobes *c.* 0·5 mm., spreading. Fruit *c.* 2·5 × 2·0 mm., subglobose, compressed, the fertile cell thickened dorsally. Fl. IX–I.

Cultivated and disturbed ground near settlements; rare.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa but a widespread weed of cultivation in North and South America.

Specimens. **WF**: TC88 *Sladen 17.xii.1949*†. **EF**: VC47 *Sladen Fa18/50* (BM).

LOBELIACEAE

1. *Pratia* Gaudich.

Prostrate, glabrous, perennial herbs. Leaves alternate, simple; stipules absent. Flowers zygomorphic, hermaphrodite, solitary, axillary. Calyx with tube adnate to ovary, equally 5-lobed, persistent. Corolla 2-lipped, the upper lip 2-lobed, the lower 3-lobed. Stamens 5, alternating with corolla-lobes, free; anthers

and upper part of filaments connate to form a tube around style. Ovary ± inferior, 2-celled; ovules numerous; style simple, surrounded by a ring of hairs; stigma 2-lobed. Fruit a berry; seeds numerous, minute.

1. ***P. repens*** Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 103.

D'Urville, 1825, p. 39; Gaudichaud, 1826, p. 134; Hooker, 1847, p. 325; Wright, 1911, p. 324; Skottsberg, 1913, p. 53; Vallentin and Cotton, 1921, pl. 38.

Stems up to 25 cm., prostrate, branched, rooted at nodes, leafy especially distally. Leaves with lamina 5–16×5–12 mm., ovate to oblong-ovate, rarely suborbicular-ovate, rounded or obtuse, sometimes retuse, truncate to shallowly cordate or rarely subcuneate at base, shallowly crenate, rather shiny and dark green on upper surface; petiole 4–32 mm., 1–3 times as long as lamina, narrowly winged. Peduncles 5–18 mm., up to 35 mm. in fruit, erect. Calyx-lobes 1·2–2·0×*c.* 1·0–1·5 mm., oblong-ovate, obtuse, usually mucronulate, entire, green, often purple-tinged; corolla lilac outside, white inside; upper lip 4–7 mm., deeply 2-lobed, the lobes *c.* 2·5×1·4 mm., ovate-triangular, acute, usually mucronulate; lower lip 5–8 mm., 3-lobed to about half length, the lobes *c.* 2·5–3·0×1·2–1·5 mm., ovate-triangular, acute, usually mucronulate; anthers deep purple; stigma equalling or just exceeding anthers when mature, with lobes *c.* 0·8 mm., oblong, spreading. Berry *c.* 10–15 mm., subglobose to cylindrical, green or purplish. $2n = 84$. Somewhat protandrous but self-compatible and at least facultatively self-pollinated. Fl. XII–II.

Moist places in most associations; common. 0–705 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 52°50′S., Andean Patagonia north to lat. 46°20′S.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC41 *Moore 690* (K, LTR, US); TC65 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin 20.xii.1909* (K, MANCH); TC79 *Moore 841* (BIRM, CHR, LTR, UC); TD80 *Skottsberg**; TC99 *Vallentin 1.ii.1911* (K, MANCH); s. loc. *Nichol* (BM), *Vallentin* (BM). **EF**: UC32 *Skottsberg**; UC58 *Moore 651* (C, GH, LTR); UC65 *Skottsberg**; VC28 *Sladen JB111/9* (BM), *Skottsberg**; VC37 *Sladen Fa3/50* (BIRM, BM); VC47 *Hamilton JH31* (BM), *Booth 45, 9* (LTR), *Moore 522* (K, LP, LTR, S), *Skottsberg 59* (BM), Cunningham *i.1868* (K), *Hill xi.1902* (K), *Bennett 12.i.1935* (BM); s. loc. *Hooker 81* (BM, K), *Wright* (K), *Darwin 167* (K), *Elliott c. 1910* (K), *Hennis in 1914* (BM).

CALYCERACEAE

1. *Nastanthus* Miers

Glabrous, perennial, caespitose herbs. Leaves alternate, simple, closely imbricate; stipules absent. Flowers actinomorphic, hermaphrodite, grouped in terminal capitula; each capitulum surrounded by involucral bracts; receptacular bracts present. Calyx adnate to ovary, shortly 5-lobed, persistent. Corolla tubular, 5-lobed. Stamens 5, inserted in corolla-tube, alternating with corolla-lobes; filaments connate in basal half, forming tube adnate to corolla; anthers connate at base. Ovary inferior, 1-celled; ovule 1; style filiform; stigma capitate. Fruit an achene with persistent calyx-lobes.

1. ***N. falklandicus*** D. M. Moore 1967, *Bot. Notiser*, **120**, p. 18.

Stem 20–70×5–18 mm., vertical, tapering to base, with inflorescences grouped towards apex, densely leafy below inflorescences, but leafless, brown and rough with leaf-scars towards base. Leaves 12–40×2–4 mm., oblong to oblanceolate or subspathulate, narrowing in basal half to resemble winged petiole, acute or rounded, entire, glabrous, rather fleshy, densely imbricate so that the upper appear external to inflorescences. Peduncles up to 20 mm., shorter than the leaves, the lower free and simple or once-branched, becoming shorter and connate towards stem apex; terminal capitula sessile. Peduncular bract 1, leaf-like. Capitula 4–8 mm. in diameter, hemispherical. Involucral bracts 3, 3–4×2–3 mm., ovate-triangular, acute, entire, green, connate for up to basal half. Receptacular bracts 6–10, 1·5–3·0×*c.* 0·5 mm., narrowly elliptical to oblanceolate, with slender, often filiform claw. Calyx-lobes *c.* 0·5 mm., obtuse to rounded; prominent broad fleshy wing arising from midline of each lobe and adnate along length of

receptacle; corolla *c.* 3 mm., white, the lobes *c.* 0·8 mm., acute, cucullate; anthers included. Style exserted *c.* 1 mm. Achene *c.* 2·5 mm., prominently 5-winged. $2n = c.$ 40. Protogynous. Fl. I. (Plate IIId)

Gravel and sand between loose rock slabs near coast and on cliff ledges; rare. *c.* 90 m.

West Falkland. Endemic.

Typus. West Falkland: Port Stephens; Ten Shilling Bay peninsula, 28.i.1964. *Moore 707* (K!).

This curious little plant may be confused with a *Plantago* when vegetative, but it is readily distinguished by the prominent diamond-shaped leaf-scars on the stem below the leafy part. When flowering it is quite distinctive, with the white inflorescence smelling strongly of nectar and surrounded by the dense leaves.

Specimens. **WF**: TC22 *Moore*†; TC31 *Moore 707* (GH, K, LP, LTR); TC40 *Moore*†; TC50 *Moore*†; s. loc. *Robinson in ? 1839* (K).

COMPOSITAE

Shrubs or herbs. Stipules absent. Flowers small (florets), aggregated into heads (capitula) simulating a single larger flower and surrounded by a calyx-like involucre of one or more series of bracts. The receptacle of the capitulum is of varied shape, pitted or smooth, with or without receptacular bracts each subtending a floret. Florets all similar (head homogamous) or central (disc) and marginal (ray) florets differing (head heterogamous). Calyx represented by a pappus either of numerous simple or plumose hairs in one or more series, or of membranous scales, or of teeth or bristles, or of a continuous membranous ring, sometimes absent. Corolla may be (i) tubular, either actinomorphic, with the corolla-tube terminating in 5 ± short equal teeth, or 2-lipped (ii) ligulate, with the corolla-tube prolonged only along one side as a strap-shaped "ligule" which usually has three to five teeth at its apex. Stamens 5; anthers often tailed below, connate to form closed cylinder round style. Ovary inferior, 1-celled, with one ovule; style simple at base, branched above into two stigmatic arms. Fruit an achene, sometimes with terminal beak, surrounded by the pappus.

Tribe ASTEREAE

Leaves alternate, simple. Involucral bracts numerous, in several imbricate series, progressively shorter towards the outside, herbaceous. Receptacular bracts present or absent. Capitula homogamous, with tubular florets, or heterogamous with marginal florets either ligulate or filiform and with ligule short or absent. Anthers obtuse at base. Stigmatic arms wide, densely hairy distally, each with two distinct marginal stigmatic lines.

1. *Lagenophora* Cass.

Perennial herbs. Capitula heterogamous, solitary, on long bracteate scape-like peduncles; receptacle flat, smooth, without bracts; involucral bracts in two series. Ray-florets ligulate, female or sterile; disc-florets tubular, hermaphrodite, rarely male. Pappus absent.

1. ***L. nudicaulis*** (Comm. ex Lam.) Dusén 1900, *Wiss Ergebn. schwed. Exped. Magellansländ.*, **3**, p. 98.
   Skottsberg, 1913, p. 53; Cabrera, 1966, p. 293.
   L. commersonii Cass. 1822, *Dict. Sci. Nat.*, **25**, p. 110; Hooker, 1847, p. 307.
   L. hirsuta auct., non Poepp. ex Less.; Birger, 1907, p. 281.
   Aster nudicaulis Comm. ex Lam. 1783, *Encycl. Méth. Bot.*, **1**, p. 308.

Rhizome slender. Stems up to 1 cm., ascending or suberect. Leaves with lamina 5–10×2–6 mm., obovate to oblanceolate, obtuse and mucronate at apex, gradually tapering to petiole, with mucronately crenate margins, glabrous or slightly appressed-pubescent above; petiole 2–9 mm., winged, usually sparsely fimbriate. Peduncle 1·1–6·5 cm., terminal, erect, glabrous or appressed-pubescent distally, purplish, with bract at or above middle and rarely another near base; bracts 2·0–2·5 mm., linear, obtuse, brown, scarious. Capitulum 5–9 mm. in diameter; involucral bracts 1·9–2·5×*c.* 0·5 mm., oblong, acute,

entire, glabrous, greenish to reddish purple. Disc- and ray-florets reddish purple to pale lilac, rarely whitish; ligules 1·0–1·5×*c.* 0·3 mm., retuse. Achenes 2–*c.* 3×0·7–1·0 mm., oblanceolate, compressed, narrowing to beak, with thickened margin, viscid towards apex, yellowish brown; beak short, stout, truncate. Fl. XII–II.

Damp peat and clay, often associated with *Nertera* and *Schizeilema*; uncommon but easily overlooked. 3–275 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Andean Patagonia (lat. 47°52′S.), the Andes (*c.* lat. 34°40′–36°30′S.), Tristan da Cunha, Gough Island.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

Specimens. **WF**: TC50 *Vallentin 77* (K); TC79 *Moore 839* (BIRM, CHR, GH, K, LTR, P, S, UC); UC27 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH). **EF**: UC69 *Skottsberg**; UC87 *Davies BF35* (K); VC09 *Sladen Fa32/49* (BM); VC28 *Sladen Fa10/49* (BM), *Skottsberg**; VC37 *Moore 503* (K, LP, LTR, US); VC47 *Bennett 16.ii.1917* (BM), *Booth 20* (LTR), *Greene 20* (K), *Hamilton JH33* (BM), *Sladen Fa20/50* (BM); s. loc. *Darwin iii.1834* (CGE), *Hooker* (K), *Wright* (K).

2. *Bellis* L.

Perennial herbs. Leaves in basal rosette. Capitula heterogamous, solitary, on long ebracteate scape; receptacle conical, pitted, without bracts; involucral bracts in (1–)2 series. Ray-florets ligulate, female; disc-florets tubular, hermaphrodite. Pappus absent.

1. *B. perennis L. 1753, *Sp. Pl.*, p. 886. Daisy

Birger, 1907, p. 279; Skottsberg, 1913, p. 99; Davies, 1939, p. 61–62; Moore and Sladen, 1965, p. 32–33.

Leaves with lamina 20–40×5–15 mm., obovate-spathulate, rounded at apex, abruptly narrowing to petiole, crenate-serrate, sparsely hairy; petiole 2–20 mm. Scapes 3–12 cm., rarely more, hairy. Capitulum 16–25 mm. in diameter; involucral bracts 3·5–5·0×1·4–2·0 mm., oblong, obtuse, entire, hairy, green, often black at apex. Ray-florets white or pink; ligules 4·5–8·0×1·0–1·4 mm.; disc bright yellow. Achenes 1·5–2·0×*c.* 0·9 mm., obovoid, compressed, rounded at apex, with thickened margin, ± appressed-pubescent, pale brown. Fl. X–V, possibly longer.

Common in fields and disturbed ground near settlements, occasionally in *Cortaderia* grassland.

West Falkland, East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TD51 *Sladen 28.v.1949*†; TC86 *Sladen Fa74/49* (BM). **EF**: VC08 *Sladen 13.v.1949*†; VC16 *Sladen JB102/3* (BM); VC47 *Hamilton JH7* (BM).

3. *Aster* L.

Perennial herbs. Capitula heterogamous, 1(–3), terminal on stem and branches, sometimes also in axils of cauline leaves; receptacle flat, pitted, without bracts; involucral bracts in several imbricate series. Ray-florets ligulate, female; disc-florets tubular, hermaphrodite. Pappus of one series of ciliate-strigulose hairs.

1. *A. vahlii* (Gaudich.) Hook. & Arn. 1836, *Comp. Bot. Mag.*, **2**, p. 49. Marsh Daisy

Hooker, 1847, p. 305; Melvill, 1903, p. 6; Skottsberg, 1913, p. 53; Vallentin and Cotton, 1921, pl. 31, figs. 8–13.

Erigeron vahlii Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 103; 1826, p. 135; D'Urville, 1825, p. 43; Wright, 1911, p. 322.

Rhizomes up to *c.* 30 cm., *c.* 2–5 mm. in diameter. Stems 7–35 cm., ascending to erect, usually branched near base, glabrous or sparsely hairy distally, densely leafy in basal half, sparingly so above. Leaves glabrous or sparsely appressed-pubescent on upper surface, ciliate; lower with lamina 15–55×6–15 mm., obovate to oblanceolate, sometimes elliptic-oblanceolate, obtuse or rounded, usually shortly mucronate, gradually tapering to petiole, shallowly and irregularly crenate; petiole 1·5–5·0 cm., winged, ciliate, sheathing at base; upper leaves 15–90×2–9 mm., decreasing upwards, linear-oblanceolate to linear, obtuse to subacute, mucronate, sometimes long-attenuate at base, subentire, sessile. Capitulum 15–30(–35) mm. in diameter; involucral bracts 6–14×1–2 mm., oblong to lanceolate, acute to acuminate, entire, ciliate, green, with white membranous margin. Ray-florets pale purple, rarely white; ligule 5–10×*c.* 1·0–1·7 mm., obtuse, retuse; disc yellow. Achenes *c.* 3·5×0·7 mm., oblong, squarish in cross-section,

with four thickened ribs at angles, appressed-pubescent; pappus slightly longer than achene, white or yellowish brown. $2n = 24$. Self-compatible, sometimes self-pollinated. Fl. (XII–)I–II.

Damp places in *Cortaderia* grassland, dwarf shrub heath, moist sand and soil by sea; common. 0–610 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 45°53′S., Andean Patagonia north to *c.* lat. 41°S., north along the Andes to *c.* lat. 36°30′S.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC31 *Moore 720* (C, GH, K, LTR, P); TC32 *Moore 761* (BIRM, CHR, K, LTR, UC, US); UD11 *Sladen Fa70/49* (BM); UC27 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Vallentin* (BM). **EF**: UC65 *Skottsberg**; UC68 *Moore 666* (K, LTR); VC28 *Skottsberg**; VC36 *Skottsberg**; VC37 *Sladen JB100/1* (BM); VC46 *Hamilton JH24* (BM); VC47 *Booth 2* (LTR), *Davies AF25* (K), *Moore 524* (K, LP, LTR, S); s. loc. *Cunningham ii.1867* (K), *Darwin iii.1833* (CGE, K), *Hooker 50* (BM, K), *McCormick* (BM), *Proges in 1920* (BM).

4. *Erigeron* L.

Rhizomatous, perennial herbs. Capitula heterogamous, solitary and terminal on stem; receptacle flat or slightly convex, without bracts; involucral bracts in 1–3 imbricate series. Ray-florets ligulate, female; disc-florets tubular, hermaphrodite. Pappus of one series of strigulose hairs.

1. ***E. incertus*** (D'Urv.) Skottsb. 1913, *K. svenska VetenskAkad. Handl.*, **50**, No. 3, p. 54.

Vallentin and Cotton, 1921, pl. 34; Solbrig, 1962, p. 55.

Erigeron sullivani Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 306.
Hieracium ? incertum D'Urv. 1825, *Fl. Is. Mal.*, p. 40; Gaudichaud, 1826, p. 134.

Stems 5–15 cm., ascending or usually erect, hairy, densely leafy at base, usually sparingly so above. Basal leaves in rosette, with lamina 15–30 × 5–10 mm., obovate, obtuse, gradually narrowing to petiole, entire, densely hairy beneath and on margins, usually less so on upper surface; petiole up to 7 mm., narrowly winged, ciliate, hairy near base; upper leaves 5–15 × 1·0–2·5 mm., linear, obtuse, hairy. Capitulum 10–15(–20) mm. in diameter; involucral bracts 8–10 × 1–2 mm., linear or linear-lanceolate, acute, entire, hairy outside, reddish purple, rather scarious. Ray-florets pinkish purple or white; ligule 5–6 × 0·5–1·0 mm., obtuse; disc yellow. Achenes *c.* 2·0 × 0·5 mm., oblanceolate, compressed, 2-ribbed, densely pubescent; pappus *c.* two-thirds as long as achene, yellowish. $2n = 36$. Fl. XII.

Dry places in *Empetrum* heath; rare. 3–6 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis; "in littoribus", 20.xi.–18.xii.1822. *D'Urville* (P).

This species may be confused with *Aster vahlii*, although their habitats differ, but it can be recognized by its densely hairy leaves, narrower, usually smaller ligules, and by the pappus being shorter than the compressed achene.

Specimens. **WF**: TC32 *Moore 804* (K, LTR); TC65 *Skottsberg**; TC68 *Vallentin 28.xii.1909* (BM, K); TC87 *Sladen Fa104/49* (BM); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); s. loc. *Hooker* (BM).

5. *Baccharis* L.

Dioecious, evergreen, dwarf shrubs. Capitula homogamous; receptacle ± flat, smooth, without bracts; involucral bracts in 3–4 or more imbricate series. Florets tubular, actinomorphic. Pappus of several series of distally strigulose hairs.

1. ***B. magellanica*** (Lam.) Pers. 1807, *Syn. Pl.*, **2**, p. 424. Christmas Bush

Hooker, 1847, p. 307; Melvill, 1903, p. 6; Wright, 1911, p. 322; Skottsberg, 1913, p. 54; Vallentin and Cotton, 1921, pl. 35.

B. tridentata auct., non Vahl; Gaudichaud, 1825, p. 103; 1826, p. 135; D'Urville, 1825, p. 42.
Conyza magellanica Lam. 1786, *Encycl. Méth. Bot.*, **2**, p. 91.

Stems up to 25 cm., prostrate, ascending or erect, much-branched, minutely scabridulous and rather viscid when young. Leaves with lamina 5–14 × 2–6 mm., obtuse, cuneate at base, with 1–2 obtuse, crenate serrations on each side towards apex, but upper leaves entire, glabrous or minutely scabridulous on margins, somewhat viscid when young; petiole up to 2 mm., minutely scabridulous, or absent. Capitulum

5–12 mm. in diameter, larger on female than on male plants; involucral bracts 2·5–5·0×*c.* 1·2–1·5 mm., ovate or triangular-ovate, obtuse or subacute, entire, ciliate, white and membranous with green or brownish mid-vein. Florets 3–4 mm.; male with recurved yellowish corolla-lobes *c.* 1 mm., and pappus in one series slightly exceeding floret; female flowers without corolla, with style exceeding calyx by *c.* 1–2 mm., and with pappus in several series *c.* 1·75 times as long as floret. Achenes 1·5–2·5×*c.* 0·5 mm., narrow pyriform, *c.* 10-ribbed, glabrous, pale brownish, the ribs whitish; pappus *c.* three times as long as achene, white. $2n = 18$. Fl. XII–I.

Dwarf shrub heath or in *Cortaderia* associations, often as a co-dominant; common. 0–705 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 43°S., the Andes north to lat. 36°S.

Typus. West Falkland: Port Egmont. *Née* (M).

Specimens. **WF**: TC32 *Moore 733* (C, GH, K, LP, LTR, S, US); TC99 *Vallentin xii.1910* (MANCH); s. loc. *Blake in 1925–26* (MANCH), *Nichol* (BM), *Snyder 24.iii.1853* (CU), *R. Vallentin in 1901–02* (MANCH), *Vallentin* (BM). **EF**: VC28 *Gaudichaud* (K), *Lesson* (K); VC37 *Davies BF42c* (K), *Holdgate 633* (BIRM), *Morton Middleton 24.xi.1904* (MANCH); VC46 *Killingbeck 92* (BIRM); VC47 *Booth 36, 142* (LTR), *Bennett 12.i.1935* (BM), *Greene 36* (BIRM, K), *Lechler 142* (K), *Skottsberg 11.xii.1901* (BM); s. loc. *Ingram in 1938* (BM), *Darwin 322, 326* (K), *1164* (CGE), *Hooker* (K), *McCormick 13.iv.1842* (BM).

6. *Chiliotrichum* Cass.

Evergreen shrubs. Capitula heterogamous, terminal on branches; receptacle flat or somewhat convex, with bracts; involucral bracts in 2–3 or more imbricate series. Ray-florets ligulate, female; disc-florets tubular, actinomorphic, hermaphrodite. Pappus of 2–4 series of strigose hairs.

1. ***C. diffusum*** (Forst. f.) Dusén 1900, *Wiss. Ergebn. schwed. Exped. Magellansländ.*, **3**, p. 99. Fachine Skottsberg, 1913, p. 54; Vallentin and Cotton, 1921, pl. 33.

C. amelloides Cass. 1817, *Dict. Sci. Nat.*, *8*, p. 577; Gaudichaud, 1825, p. 104; 1826, p. 135; D'Urville, 1825, p. 44; Hooker, 1847, p. 304; Melvill, 1903, p. 6; Wright, 1911, p. 322.
Amellus diffusus Forst. f. 1789, *Comment. Gotting.*, Ser. 2, **9**, p. 39.

Stems up to 20–200 cm., ascending to erect, much-branched, leafy on ultimate twigs and branchlets, white-tomentose when young. Leaves 8–26×2–6 mm., oblong to oblong-oblanceolate, subacute to obtuse, shortly mucronate, gradually cuneate at base, entire, with revolute margins, rather coriaceous, glabrous and dark shiny green on upper surface, white tomentose beneath, sessile or very shortly petiolate. Peduncles terminal on branches, 1·5–2·5 cm., tomentose. Capitulum 22–32 mm. in diameter; involucral bracts 4·5–7·5×1·5–2·5 mm., ovate to ovate-lanceolate, acute, entire, ciliate, tomentose on dorsal surface, but only distally in inner series, purplish brown; receptacular bracts 7–9×*c.* 1 mm., linear-lanceolate, subacute, sericeous, scarious. Ray-florets white; ligule 7–14×3–4 mm., elliptic-oblanceolate, retuse or minutely 3-toothed at apex; disc yellow. Achenes 4–5×*c.* 0·8–1·0 mm., oblong-oblanceolate, ± triangular in cross-section, 3-ribbed, glandular; pappus slightly shorter than to somewhat exceeding achene, yellowish white. $2n = 54$*. Fl. I–II.

Wet soil beside streams, where often dominant, *Cortaderia* association, dwarf shrub heath; fairly common. 0–*c.* 300 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 47°S.), Andean Patagonia (47–48°S.), north along the Andes to *c.* 40°S.

Typus. Tierra del Fuego: Isla Año Nuevo, 20.xii.1774–3.i.1775. *J. R. & G. Forster.*

Specimens. **WF**: TC51 *Moore 793* (K, LP, LTR, S, US), *Snyder 3.iii.1853* (CU); s. loc. *Blake in 1925–26* (MANCH), *Nichol* (BM), *Vallentin* (BM). **EF**: VC28 *Lesson* (K); VC37 *Holdgate 634* (BIRM); VC47 *Bennett 16.xi.1917, 30.xii.1933* (BM), *Booth 3* (LTR), *Davies BF2* (K), *Greene 32* (BIRM, K), *Hill xi.1902* (K); s. loc. *Ingram in 1938* (BM), *Darwin 1163* (CGE), *Edmonston* (K), *Hooker xi.1842* (K), *Lechler ix.1850* (K).

Tribe INULEAE

Leaves alternate, simple. Involucral bracts in several imbricate series. Receptacular bracts absent. Capitula heterogamous, with inner tubular and outer filiform florets, or homogamous with tubular florets. Anther-cells produced into filiform tails at base. Stigmatic arms flattened, subtruncate, each with distinct stigmatic lines.

7. *Chevreulia* Cass.

Perennial herbs. Capitula indistinctly heterogamous, solitary; receptacle flat or somewhat concave in middle; involucral bracts in several imbricate series, the inner about equalling the florets, the outer shorter, spreading in fruit. Outer florets in several series, filiform, female; inner florets few, tubular, actinomorphic, hermaphrodite. Pappus of 1–2 series of strigulose hairs.

1. ***C. lycopodioides*** (D'Urv.) DC. 1838, *Prodr.*, 7, p. 45.

Hooker, 1847, p. 319; Skottsberg, 1913, p. 55.

Gnaphalium lycopodioides D'Urv. 1825, *Fl. Is. Mal.*, p. 42; Gaudichaud, 1826, p. 135.

Forming small, rather caespitose mats. Stems up to 7 cm., prostrate or ascending, suberect distally, covered with dead leaf-bases in lower part and with somewhat imbricate leaves above. Leaves 2–7 × 0·5–1·0 mm., linear-lanceolate, acute to subobtuse, mucronate, slightly tapering to sheathing base, entire, somewhat recurved, sparsely hirsute and dark shining green on upper surface, white-tomentose beneath. Capitula *c.* 5 mm. in diameter, sessile at anthesis, but with slender tomentose peduncles up to 8 cm. in fruit; involucral bracts 3·5–5·5 × *c.* 1 mm., ovate- to linear-lanceolate, obtuse, often retuse, entire, glabrous, scarious, green on mid-vein, with broad silvery margin. Florets *c.* 4 mm., the inner slightly wider and purplish distally, with short apical lobes; pappus about equalling florets. Achenes *c.* 1·5 × 0·2 mm., cylindrical-ellipsoid, compressed, indistinctly 3- to 4-ribbed, glabrous, olive-green, with slender apical beak *c.* one-third to half as long as achene; pappus about twice as long as achene and beak, white. $2n = 28$. Fl. XII–J. (Fig. 15)

Dry places in *Empetrum* heath and *Cortaderia* grassland; common but easily overlooked. 3–305 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis; "in collibus nudis siccisque", 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC04 *Skottsberg**; TC42 *Moore 685* (K, LTR, US); TD40 *Skottsberg**; TC55 *Skottsberg**; TC59 *Skottsberg**; TC65 *Skottsberg**; TC79 *Moore 868* (LTR); TD80 *Skottsberg**; TC99 *Vallentin ii.1911* (MANCH); UC27 *Skottsberg**; s. loc. *Vallentin in 1909–11* (K), *Hamilton 74* (BM). **EF**: UC56 *Moore 622* (GH, K, LP, LTR, S); UC65 *Corner 357* (LTR), *Skottsberg**; VC09 *Sladen Fa30/49* (BM); VC16 *Sladen JB108/3* (BM); s. loc. *Hennis* (BM), *Hooker* (BM, K).

8. *Gnaphalium* L.

Annual or perennial herbs. Capitula indistinctly heterogamous, in terminal or axillary spikes or clusters; receptacle flat; involucral bracts in several imbricate series about equalling the florets, the outer shorter, spreading in fruit. Outer florets in several series, filiform, female; inner florets few, tubular, actinomorphic, hermaphrodite. Pappus of one series of strigulose hairs.

1. Capitula in leafless corymb or raceme; involucral bracts ± uniformly straw-coloured; pappus-hairs free, falling separately .. .. **4. *luteoalbum***
   Capitula in leafy spike or raceme, or solitary; involucral bracts usually darker distally; pappus-hairs united at base, falling together 2
2. Leaves 2–6 mm. wide, with upper surface ± as densely lanate and the same colour as the lower; involucral bracts acuminate, the outer usually subulate .. .. **1. *affine***
   Leaves 4–12 mm. wide, with upper surface ± glabrous or much less lanate and darker coloured than the lower; involucral bracts obtuse or acute, the outer never subulate 3
3. Involucral bracts obtuse .. .. **2. *spicatum***
   Involucral bracts acute .. .. **3. *americanum***

Section GAMOCHAETA (Wedd.) Benth. Pappus-hairs united at base to form a ring, falling together.

The Falkland Islands representatives of this section are in need of more detailed study. Although typical specimens of the three species are reasonably well-separated, there are frequent intergradations which are difficult to classify with certainty and much more information is required about the variation of characters within and between populations.

FIGURE 15

Chevreulia lycopodioides; ×3.

1. ***G. affine*** D'Urv. 1825, *Fl. Is. Mal.*, p. 42.

Gaudichaud, 1826, p. 134; Hooker, 1847, p. 310; Birger, 1907, p. 239; Wright, 1911, p. 321; Skottsberg, 1913, p. 55; Vallentin and Cotton, 1921, pl. 31.

Gamochaeta affinis (D'Urv.) Cabrera 1961, *Boln Soc. argent. Bot.*, **9**, p. 363.

Perennial. Stems 2–5 cm., procumbent or ascending, branched, usually very leafy, with ascending to erect and often less leafy flowering stems up to 9 cm.; all densely lanate, especially distally. Leaves 5–15 × 2–6 mm., oblanceolate to obovate-spathulate, obtuse, with short, dark brown, often reflexed mucro, entire, densely lanate beneath but sometimes rather less so on upper surface, usually pale green on both surfaces. Inflorescence 6–10(–22) mm., congested and frequently hidden by upper cauline leaves, densely lanate at least near base. Capitula 3–5 × 1·5–2·0 mm., ± cylindrical, sessile; involucral bracts 2·5–3·5 × 0·5–0·8 mm., linear-lanceolate, acute to acuminate but the outer usually subulate, entire, usually lanate near base, pale brown distally, white or greenish near base, often pinkish flushed in middle. Florets 2·0–3·5 mm., purplish at apex; pappus about equalling florets. Achenes *c.* 1·0 × 0·2 mm., cylindrical to

narrowly pyriform, somewhat compressed, truncate, sparsely and minutely acute-tuberculate, greyish brown; pappus *c.* three times as long as achene, white. $2n = 28$. Fl. XII–I. (Fig. 16b, c)

Usually open sandy or gravelly soil, usually in dwarf shrub heath; fairly common. 3–600 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC34 *Skottsberg**; TC66 *Skottsberg**; TC88 *Sladen Fa117/49* (BM); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC32 *Skottsberg**; UC65 *Corner 341* (LTR), *Skottsberg**; UC77 *Moore 585* (BIRM, C, K, LTR, US); VC09 *Sladen Fa55/49* (BM); VC28 *Skottsberg**; VC36 *Skottsberg**; VC37 *Bennett 9.xii.1917* (BM); VC46 *Moore 547* (GH, K, LP, LTR, S); VC47 *Davies AF34, BF34* (K), *Greene 18* (K), *Hamilton 45* (BM), *Hooker* (K), *Lechler 140* (K); s. loc. *Hooker* (BM).

G. antarcticum Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 310, is only known from the type collection (at K) made by Hooker near Berkeley Sound, East Falkland. It appears to be a glabrous form of *G. affine*, but further specimens are required before a definite decision is possible.

2. *G. spicatum* Lam. 1786, *Encycl. Méth. Bot.*, **2**, p. 757.

Hooker, 1847, p. 309; Skottsberg, 1913, p. 55.

Gamochaeta spicata (Lam.) Cabrera 1961, *Boln Soc. argent. Bot.*, **9**, p. 380.

Perennial. Stems 2–37 cm., procumbent at base then erect, simple or branched, densely leafy at base, but with leaves usually well-spaced on flowering stems, ± lanate. Leaves 10–35 × 4–12 mm., obovate to obovate-spathulate, obtuse, with short brownish mucro, entire, densely lanate beneath, sparsely lanate or subglabrous and darker green on upper surface. Inflorescence 13–85 mm., ± cylindrical, terminal on stems and branches, not conspicuously lanate. Capitula 3–6 × 1·5–3·0 mm., ± cylindrical or cylindrical-ovoid, sessile; involucral bracts 3·0–4·2 × 0·5–1·5 mm., linear- to ovate-lanceolate, obtuse, entire, glabrous, yellowish brown, darker distally, often pinkish flushed. Florets *c.* 3–4 mm., purplish at apex; pappus usually slightly shorter than florets. Achenes 0·7–0·9 × 0·2–0·3 mm., cylindrical, somewhat compressed, truncate, sparsely and minutely acute-tuberculate, greyish brown; pappus three to four times as long as achene, white. Fl. XII–II. (Fig. 16a, d)

Dry places in dwarf shrub heath, especially near sea; fairly common.

West Falkland, East Falkland. Widespread in South America.

Typus. Argentina: "Des environs de Buenos Ayres". *Commerson* (P).

Specimens. **WF**: TC32 *Moore 735* (BIRM, C, GH, K, LP, LTR, S); TC68 *Vallentin in 1909–11* (K); s. loc. *Nichol* (BM), *Vallentin* (BM). **EF**: UD62 *Hamilton 5.ii.1936* (BM); VC28 *Gaudichaud* (K), *Sladen 111/8* (BM); VC47 *Booth 49* (LTR), *Bennett 26.ii.1935* (BM); s. loc. *Hooker* (BM, K), *Chartres* (K), *Proges* (BM).

3. *G. americanum Mill. 1768, *Gard. Dict.*, Ed. 8, No. 17.

G. consanguineum Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 103; D'Urville, 1825, p. 42; Gaudichaud, 1826, p. 134.

G. purpureum auct., non L.; Wright, 1911, p. 322; Vallentin and Cotton, 1921, pl. 32; Moore and Sladen, 1965, p. 32.

Gamochaeta americana (Mill.) Wedd. 1856, *Chloris Andina*, **1**, p. 151; Cabrera, 1961, p. 363.

Very similar to *G. spicatum* but with acute and often larger involucral bracts. Fl. I–IV. (Fig. 16e)

Disturbed ground, usually near settlements; local.

West Falkland, East Falkland. Probably introduced; widespread in South America and West Indies.

Cabrera (1961, p. 377) noted that *G. purpureum* L. may be distinguished from this species by its weaker, annual habit and by the loose tomentum on the leaves.

Specimens. **WF**: TC68 *Vallentin* (MANCH); TC99 *Vallentin i.1911* (MANCH). **EF**: VC47 *Davies 5.ii.1938* (K), *Sladen JB107/49* (BM).

Section GNAPHALIUM. Pappus-hairs free to the base and falling separately.

4. *G. luteoalbum L. 1753, *Sp. Pl.*, p. 851. Jersey Cudweed

Marquand, 1923, p. 370; Moore and Sladen, 1965, p. 34.

Annual to perennial. Stems 8–35(–40) cm., erect, usually with decumbent then erect branches arising near the base, ± densely covered with long, appressed, white or grey hairs. Leaves 20–30 × 2–7 mm.,

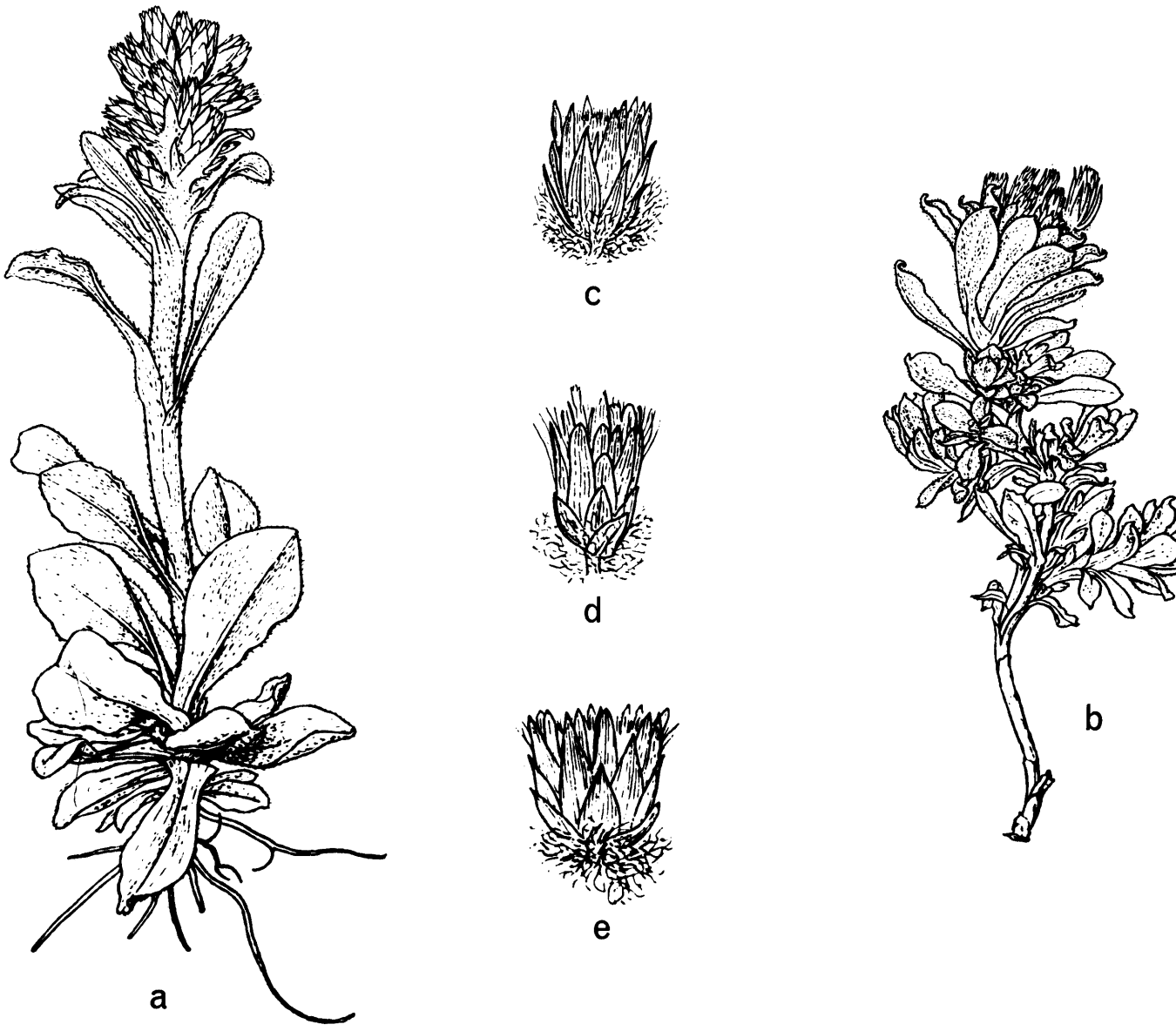


FIGURE 16

a, b. *Gnaphalium.*
a *G. spicatum.* b. *G. affine.*
c–e. Capitula of:
c. *G. affine.* d. *G. spicatum.*
e. *G. americanum.*
a, b $\times\frac{4}{3}$; c–e $\times 4$.

rather lanate on both sides; lower leaves oblanceolate or obovate-spathulate, obtuse, gradually narrowed to base, somewhat undulate; upper leaves oblong, acute, usually apiculate, amplexicaul, undulate. Capitula 4–5 mm., ovoid, in one or more dense terminal leafless clusters of 6–12; involucral bracts 2–3 $\times$ *c.* 1·0–1·3 mm., oblong or elliptical, obtuse, entire, scarious, shining, pale brown, the outermost lanate near base. Florets *c.* 2 mm., yellowish; pappus about equalling florets. Achenes *c.* 0·5$\times$0·2 mm., cylindrical, truncate, finely tuberculate, pale brown; pappus about five times as long as achene.

Sandy or dry peaty slopes by sea; rare.

West Falkland. Introduced; native of Europe but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TD40 *Moore 923* (BIRM, C, K, LTR, P, UC, US); TC68 *Vallentin* (MANCH); TC88 *Moore 827* (GH, K, LP, LTR, S); TC99 *Vallentin ii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH).

Tribe ANTHEMIDAE

Leaves alternate, simple to pinnate. Involucral bracts in two or more imbricate series. Receptacular bracts present or absent. Capitula homogamous, with tubular florets, or heterogamous, with tubular disc- and ligulate ray-florets. Anthers obtuse at base. Stigmatic arms flat, distally hairy on outside, with two marginal stigmatic lines, truncate in disc-florets.

9. *Anthemis* L.

Annual herbs, usually strongly scented. Leaves 1- to 3-pinnate. Capitula heterogamous, solitary and terminal on branches; receptacle long-conical in fruit, with bracts; involucral bracts in several series. Ray-florets ligulate, female or sterile; disc-florets tubular, hermaphrodite. Pappus a small, membranous rim.

1.** ***A. cotula L. 1753, *Sp. Pl.*, p. 894. Stinking Mayweed

Moore and Sladen, 1965, p. 32.

Usually foetid. Stems 20–60 cm., erect, branched below, sparsely hairy. Leaves 15–50×6–25 mm., oblong to obovate or oblanceolate in outline, 1- to 3-pinnate; ultimate segments 2–9 mm., narrowly linear, acute, entire, ± glabrous. Capitula 12–25 mm. in diameter; peduncle sparsely to densely hairy. Involucral bracts 2–4×0·8–1·2 mm., oblong, obtuse, ± glabrous, green with paler wide scarious margins. Receptacular bracts *c.* 0·5–2·0 mm., linear or subulate, scarious. Ray-florets white, sterile; ligule 8–11×2–4 mm.; disc yellow. Achenes 2·0×0·8 mm., obovoid-cylindrical, with ten strongly tuberculate ribs; membranous rim inconspicuous.

Cultivated and disturbed ground near settlements; occasional.

East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions of both hemispheres.

Specimens. **EF**: VC08 *Sladen JB117/5* (BM).

A. arvensis L. 1753, *Sp. Pl.*, p. 894, the Corn Chamomile, was reported from near Port Stanley by Birger (1907, p. 294). It can be distinguished from the above species by its aromatic smell, pubescent or lanate stems, lanceolate and cuspidate receptacular bracts, ray-florets with a style and smooth-ribbed achene.

10. *Achillea* L.

Perennial herbs. Leaves 2- to 3-pinnate or pinnatisect. Capitula heterogamous, numerous in dense terminal corymbs; receptacle flat or slightly convex, with bracts; involucral bracts in several imbricate series. Ray-florets ligulate, female; disc-florets tubular, hermaphrodite. Pappus absent.

1.** ***A. millefolium L. 1753, *Sp. Pl.*, p. 899. Yarrow

Birger, 1907, p. 278; Davies, 1939, p. 62; Moore and Sladen, 1965, p. 32.

Strongly scented, with far-creeping stolons. Stems 8–45 cm., erect, usually unbranched, furrowed, ± lanate. Basal leaves with lamina 50–150×7–25 mm., oblong-lanceolate in outline, 2- to 3-pinnate; ultimate segments *c.* 2–3 mm., linear to subulate, acute; petiole up to *c.* 5 mm.; upper leaves shorter, sessile, often with 2–3 smaller axillary leaves. Capitula 4–6 mm. in diameter; involucral bracts 2–4× 1·0–1·5 mm., oblong, obtuse, entire, keeled, ± glabrous, with wide brown or blackish scarious margin; receptacular bracts 2·0–3·5 mm., linear, scarious. Ray-florets *c.* 5, white, rarely pinkish; ligule 2·5–3·5×

2·5–3·5 mm., obovate, 3-toothed at apex; disc-florets white or cream-coloured. Achenes *c.* 2·0× *c.* 0·8 mm., cylindrical to oblanceolate, strongly compressed, truncate, not ribbed, somewhat winged, shiny, greyish.

Disturbed ground and improved pastures near settlements; occasional.

West Falkland, East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC88 *Sladen 17.xii.1949*†; TC99 *Vallentin iii.1911* (K). **EF**: VC08 *Sladen JB118/1* (BM); VC47 *Sladen JB106/7* (BM).

A. tomentosa L. 1753, *Sp. Pl.*, p. 897, which can be distinguished from the above species by its yellow ray-florets, 2-pinnatisect leaves with mucronate, ± lanate segments, and smaller capitula (*c.* 3 mm. in diameter), was doubtfully reported by D'Urville (1825, p. 44), but has not been recorded since.

11. *Cotula* L.

Perennial herbs. Leaves pinnatifid. Capitula homogamous, axillary and terminal; receptacle flat or somewhat convex, without bracts; involucral bracts in 2–3 imbricate series. Florets tubular, unisexual. Pappus absent.

1. ***C. scariosa*** (Cass.) Franchet 1889, *Miss. Sci. Cap Horn*, **5**, p. 344.

Wright, 1911, p. 323; Skottsberg, 1913, p. 57; Moore, 1967*a*, p. 24.

C. acaenoides (Hook. & Arn.) Alboff 1902, *An. Mus. La Plata, Secc. Bot.*, **1**, p. ix; Cabrera, 1939, p. 290.
Leptinella scariosa Cass. 1822, *Bull. Soc. philom. Paris*, p. 127.

Dioecious. Stems up to *c.* 9 cm., prostrate but ascending distally, branched, rooted at some lower nodes, sparsely ± appressed-hairy. Leaves with lamina 9–15×5–9 mm., oblong in outline, deeply pinnatifid, sparsely appressed-hairy; lobes 5–8 pairs; ultimate segments 2·5–4·0×1·5–2·0 mm., ovate to ovate-lanceolate, acute, deeply pinnatifid, rarely entire; petiole 5–12 mm., sheathing at base, sparsely appressed-hairy. Capitula 8–10 mm. in diameter; peduncle 8–22 mm., erect, hairy; involucral bracts 2–4×*c.* 2·5 mm., lanceolate to elliptic-oblong or broadly ovate-oblong, acute, entire or sparsely fimbriodentate, sparsely appressed-hairy, green with white membranous margin and dark purple apex. Florets 1·5–2·0 mm.; corolla rather smaller in female, yellow; stigma exserted, bifid in female, undivided in male. Achenes 1·5–1·8 mm., cylindrical-oblanceolate, compressed, pale yellowish brown, glabrous. $2n = c.$ 200–220. Fl. XII–I.

Marshy ground by streams and wet sand on coast; rare but easily overlooked.

West Falkland, East Falkland. Fuegia, west Patagonia, Chiloe.

Typus. Locality unknown.

Specimens. **WF**: TC68 *Skottsberg**, *Vallentin 27.xii.1909* (MANCH); s. loc. *Nichol* (BM), *Vallentin 24* (K). **EF**: VC37 *Booth 1, 43* (LTR).

12. *Abrotanella* Cass.

Perennial, cushion-forming, moss-like herbs. Leaves simple, closely imbricate. Capitula heterogamous, discoid, sessile, solitary, terminal; receptacle somewhat convex, without bracts; involucral bracts in two series. Florets tubular, actinomorphic, with 4-lobed corolla, 2–4 male and 2–4 female. Stigmatic arms short, truncate. Pappus absent.

1. ***A. emarginata*** Cass. 1825, *Dict. Sci. Nat.*, **36**, p. 27.

Gaudichaud, 1826, p. 465; Hooker, 1847, p. 308; Melvill, 1903, p. 6; Wright, 1911, p. 323; Skottsberg, 1913, p. 56.

Oligosporus emarginatus (Cass.) Cass. ex Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 104; D'Urville, 1825, p. 44; Gaudichaud, 1826, p. 135.

Forming small, usually compact cushions or mats. Stems 2–4 cm., ascending or erect, branched, densely clothed with leaf-bases and dead leaves in lower part. Leaves 2–5×*c.* 1 mm., oblong, truncate and bifid at apex, sheathing at base, glabrous, with conspicuous scarious margin, particularly at apex, rather

coriaceous, green, usually purple on sheath. Capitula hidden among leaves; involucral bracts *c.* 2·5 × 0·8 mm., oblong-lanceolate, truncate, ± bifid at apex, purplish. Florets *c.* 3 mm., dark purplish brown distally, with tube yellowish white in male and pale green in female; female florets marginal, with slender, cylindrical, obscurely toothed corolla-tube; male florets with more distinctly toothed corolla; stigma exserted but undivided in male. Achenes *c.* 1 mm., oblong, somewhat 4-angled, glabrous, pale brown. $2n = 18$. Fl. X–XI(–XII). (Fig. 17)

Dwarf shrub heath, *Bolax* communities, *Astelia* bogs; common. 0–705 m.

West Falkland, East Falkland. Fuegia, southern west Patagonia.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

This plant can easily be distinguished from all other cushion-forming species in the Falkland Islands by the conspicuous scarious margin and bifid apex of the leaves. (Fig. 17b)

Specimens. **WF**: TC32 *Moore 741* (C, GH, LTR); TC79 *Moore 856* (LTR, P, US); TC99 *Vallentin iii.1911* (MANCH). **EF**: UC76 *Corner 325* (BIRM); UC77 *Moore 606* (K, LTR); VC27 *Davies BF33* (K); VC28 *Gaudichaud* (K); VC37 *Greene 82, 85* (BIRM, K), *Killingbeck 108* (BIRM), *Moore 512* (BIRM, K, LP, LTR, S), *Sladen Fa14/50* (BM); s. loc. *Hooker 44* (K), *Lechler* (K).

FIGURE 17

Abrotanella emarginata.
a. Stem with terminal flowers; ×5.
b. Leaf; ×8.

13. *Chrysanthemum* L.

Perennial herbs. Leaves simple to pinnatifid. Capitula heterogamous, solitary, terminal on stem; receptacle flat or slightly convex, without bracts; involucral bracts in several imbricate series. Ray-florets ligulate, female; disc-florets tubular, hermaphrodite. Pappus absent or represented by small membranous rim.

*1. ***C. leucanthemum*** L. 1753, *Sp. Pl.*, p. 888. Ox-eye Daisy

Moore, 1967*a*, p. 23.

Stock oblique, branched, rather woody, producing non-flowering leaf-rosettes and erect, simple or branched, subglabrous to sparsely hairy, flowering stems 10–30 cm. or more. Basal and lower cauline leaves with lamina 15–25×7–10 mm., obovate to obovate-spathulate, obtuse, gradually narrowing to petiole, crenate to dentate, glabrous, or sparsely hairy on upper surface; petiole 17–40 mm., subglabrous; upper cauline leaves 8–35×2–8 mm., oblong, obtuse, semi-amplexicaul at base, crenate-dentate to pinnatifid, sessile. Capitula 25–30 mm. in diameter; involucral bracts 5–7×1·2–1·7 mm., lanceolate to oblong-lanceolate, irregularly serrulate-crenate, glabrous, green, with narrow, dark purplish, scarious margins and apex. Ray-florets white; ligule 5–9×1·2–2·6 mm., oblong to oblong-lanceolate, obtuse, entire or minutely 2- to 3-lobed at apex; disc yellow. Achenes 2–3 mm., cylindrical to obconical, 5- to 10-ribbed, glabrous, pale grey; ray-achenes with, disc-achenes without, rim.

Improved pastures; rare.

West Falkland. Introduced, probably in grass seed; native of Europe, but naturalized in temperate regions of both hemispheres.

Specimens. **WF**: UC19 *Booth in 1964*†; UC28 *Booth 75* (LTR).

Tribe SENECIONEAE

Leaves alternate, simple or pinnatifid. Involucral bracts in one series with smaller ones at base. Receptacular bracts absent. Capitula homogamous, with tubular florets, or heterogamous with ligulate ray-florets. Anthers obtuse at base. Stigmatic arms flat, distally hairy on outside, with two marginal stigmatic lines.

14. *Senecio* L.

Annual to perennial herbs. Leaves simple or pinnatifid. Capitula heterogamous or homogamous, solitary or in terminal or axillary corymbs. Ray-florets ligulate and female or absent; disc-florets tubular, hermaphrodite. Pappus of several series of simple, strigose hairs.

1. Annual or overwintering; leaves pinnatifid .. .. **4. *vulgaris***
   Perennial; leaves simple 2
2. Ligulate ray-florets absent; leaves (2–)3–6 cm. or more wide (sandy seashores) .. **1. *candicans***
   Ligulate ray-florets present; leaves up to 1·5 cm. wide. 3
3. Stems usually much-branched from base, very woody; leaves densely lanate beneath, linear to obovate-spathulate, entire to somewhat 3-fid at apex .. .. **2. *littoralis***
   Stems simple or branched distally, often slightly woody at base; leaves glabrous or sparsely lanate beneath, always linear and entire .. .. **3. *vaginatus***

1. ***S. candicans*** (Vahl) DC. 1838, *Prodr.*, **6**, p. 412. Sea Cabbage

Hooker, 1847, p. 312; Melvill, 1903, p. 6; Wright, 1911, p. 312; Skottsberg, 1913, p. 57; Vallentin and Cotton, 1921, pl. 30; Cabrera, 1949, p. 52.

Cacalia candicans Vahl 1794, *Symb. Bot.*, **3**, p. 91; Gaudichaud, 1825, p. 103; 1826, p. 134; D'Urville, 1825, p. 41.

Perennial; stock stout, horizontal to oblique, bearing stems and leaves at apex; stems up to 1 m., erect, branched near base, densely white-lanate. Basal leaves with lamina 40–150×20–95 mm., ovate, obtuse, cuneate or truncate at base, crenate-serrate and undulate, rarely entire; petiole 5–12 cm. or more, sheathing at base; upper leaves smaller, ± lanceolate, entire, sessile; all densely white-lanate. Corymbs terminal or in axils of upper leaves; pedicels 1–6 cm., white-lanate, with few lanceolate or linear-lanceolate, acute bracts *c.* 7–25×*c.* 1·3 mm. Capitula 15–25 mm. in diameter; involucral bracts 6–10×1·5–3·0 mm., ovate to lanceolate-oblong, acute to acuminate, serrate to entire, green, with wider, pale, scarious margins, densely lanate towards base. Corolla 6–8 mm., tubular, yellow, with lobes *c.* 1·5 mm.; anthers

partially and stigmatic arms completely exserted; pappus *c.* half as long as corolla. Achenes 7–8 × *c.* 2 mm., oblong, obtuse, indistinctly 8- to 10-ribbed, glabrous, pale brown; pappus *c.* half as long as achene, white. $2n = 40$. Fl. I–II. (Plate IVc)

Sandy seashores above high-water mark; common, often forming extensive pure stands. Sea-level.

West Falkland, East Falkland. Fuegia, Andean Patagonia (*c.* lat. 53°10′S.), west Patagonia (lat. 43°35′S.), southern Chile (*c.* lat. 37°20′S.), east Patagonia north to *c.* lat. 41°30′S.

Typus. "ad fretum magellanicum", xii.1767–i.1768. *Commerson* (P).

Specimens. **WF**: TC61 *Moore*†; TC55 *Skottsberg**; TC65 *Skottsberg**; TC69 *Skottsberg**, *Vallentin v.–vi.1910* (BM, MANCH); TC88 *Vallentin v.–vi.1910* (K), *iii.1911* (MANCH); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC32 *Skottsberg**; UC58 *Moore 661* (C, K, LTR, US); UC73 *Skottsberg**; VC28 *Wright* (K), *McCormick 21.xi.1842* (BM); VC36 *Skottsberg**; VC46 *R. Vallentin in 1901–02* (MANCH); VC47 *Bennett 15* (BM), *Booth 53* (LTR), *Moore 543* (K, LP, LTR, S); s. loc. *Hennis* (BM), *Hooker 48* (K).

2. *S. littoralis* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 104.

D'Urville, 1825, p. 43; Gaudichaud, 1826, p. 135; Cabrera, 1949, p. 484.

S. falklandicus Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 316; Melvill, 1903, p. 6; Wright, 1911, p. 321; Vallentin and Cotton, 1921, pl. 28.

S. darwinii auct., non Hook. & Arn.; Hooker, 1847, p. 317; Skottsberg, 1913, p. 57.

Suffruticose perennial; stems 8–25 cm., up to 6 mm. in diameter, erect or ascending, often decumbent at base, usually much-branched towards base, densely leafy, densely greyish lanate except on parts of stems. Leaves 10–40 × 2–14 mm., linear-lanceolate to oblanceolate- or obovate-spathulate, acute to obtuse, cuneate and long-attenuate at base, entire or with 1–3 teeth on each side, with revolute margins, densely whitish lanate beneath, sparsely lanate to glabrous and dark green on upper surface. Capitula 20–30(–40) mm. in diameter, solitary and terminal on branches; peduncles 5–70 mm., densely white-lanate, with a few linear, leaf-like bracts; involucral bracts 8–12 × 1·1–1·8 mm., linear to linear-lanceolate, acute, with small tufts of hairs at apex, often lanate, at least towards base, becoming glabrous, brownish green with scarious margins and black apex. Florets yellow; ray-florets with tube 3·5–6·0 mm.; ligule 7·5–10·0 × 2–5 mm., oblong-elliptical; disc-florets with rather long tube. Achene 3–4 × *c.* 1 mm., cylindrical, 6- to 10-ribbed, glabrous, reddish brown; pappus *c.* twice as long as achene, white. $2n = c.\ 156$. Self-compatible, facultatively self-pollinated. Fl. XI–I(–II).

Dwarf shrub heath, rocky coastal and inland areas; fairly common. 0–305 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P!).

The type sheet contains specimens of two species. Specimen A *tomentosa* (var. α *lanata* in the description) which is the type of this species, and specimen B *glabrata* (var. β *glabrata* in the description) which belongs to *S. vaginatus*.

Specimens. **WF**: TC06 *Snyder 3.xii.1852* (CU); TC32 *Moore 674* (LTR); TC41 *Moore 717* (K, LP, LTR, S, US); TD40 *Moore 895* (BIRM, CHR, K, LTR, S, UC, US), *Skottsberg**; TC50 *Moore 773* (GH, K, LP, LTR, P, S); TC58 *Skottsberg**; TC66 *Skottsberg**; TC68 *Skottsberg**, *Vallentin 20.xi.1909* (MANCH); TC69 *Vallentin 8* (BM); TC84 *Cunningham 31.i.1868* (K); TC88 *Vallentin iii.1911* (K, MANCH), *Skottsberg**; TD80 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *Nichol* (BM), *R. Vallentin in 1901–02* (MANCH), *Vallentin* (BM). **EF**: UC76 *Moore 566* (C, GH, K, LP, LTR, S, UC); VC09 *Sladen Fa46/49* (BM); VC28 *McCormick 7.xii.1842* (BM); VC37 *Davies BF32* (K), *Greene 79* (BIRM, K), *Killingbeck 105* (BIRM), *Skottsberg**; VC47 *Bennett 16.xii.1917* (BM), *Hill xi.1902* (K), *Hooker* (K), *Lechler 143* (K), *Skottsberg**; s. loc. *Ingram in 1938* (BM), *Darwin iii.1834* (CGE), *Hooker* (BM, K).

3. *S. vaginatus* Hook. & Arn. 1841, *London J. Bot.* (*Hooker*), **3**, p. 331.

Cabrera, 1949, p. 484.

S. littoralis var. β *glabrata* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 104; Hooker, 1847, p. 318; Melvill, 1903, p. 7; Wright, 1911, p. 321; Skottsberg, 1913, p. 57; Vallentin and Cotton, 1921, pl. 29.

Somewhat suffruticose, monocarpic, probably biennial; stem 12–25 cm., erect, often decumbent at base, simple or sparingly branched in upper one-third, leafy, glabrous or sparsely lanate, especially at nodes and distally. Leaves 15–35 × 1–3 mm., linear to linear-lanceolate, acute, widening to basal sheath, entire, rather rigid, with strongly revolute margins, glabrous or with few cottony hairs, white-lanate in axils of basal sheaths and usually on underside of upper leaves, usually pale green. Capitula 20–40 mm. in diameter, solitary and terminal or few in small subcorymbose inflorescences; peduncles 3–18 mm., white-lanate, often with a few leaf-like bracts; involucral bracts 5–10 × 1·0–1·6 mm., linear to linear-lanceolate,

acute to subobtuse, with small tuft of short hairs at apex, glabrous or sparsely lanate near base, green with yellowish or brownish lines and scarious margin, often dark brownish at apex. Florets yellow; ray-florets with tube 3–4 mm., the ligule 8–12 × 2–3 mm., oblong or oblong-elliptical; disc-florets with rather longer tube. Achene 2–3 × *c.* 1 mm., cylindrical to somewhat ellipsoidal, *c.* 5- to 8-ribbed, glabrous, reddish brown; pappus *c.* twice as long as achene, white. $2n = 40$. Fl. XI–II.

Rocky areas, especially in *Empetrum–Blechnum magellanicum* association; locally common. 0–305 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Berkeley Sound, iii.1833. *Darwin 362* (CGE!, K!).

Specimens. **WF**: TC06 *Snyder 24.i.1853* (CU); TD32 *Bertrand ii.1965* (LTR); TC49 *Bennett ii.1935* (BM); TC66 *Skottsberg**; TC69 *Vallentin x.1910* (MANCH); TC78 *Vallentin* (MANCH); TC88 *Vallentin in 1909–11* (K); UC19 *Booth 76* (LTR); UC27 *Skottsberg**; UC88 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol* (BM), *Vallentin* (BM). **EF**: UC14 *Cunningham 29.i.1868* (K); UD62 *Hamilton 3.ii.1936* (BM); UC76 *Moore 565* (C, GH, K, LP, LTR, S), *Corner 331* (LTR), *Skottsberg**; VC37 *Skottsberg**; VC47 *Davies BF30* (K), *Skottsberg**; s. loc. *Hooker* (BM, K), *Cunningham ii.1867* (K), *Darwin 362* (CGE, K), *Hamilton JH75* (BM), *Hennis* (BM).

4.** ***S. vulgaris L. 1753, *Sp. Pl.*, p. 867. Groundsel

Gaudichaud, 1825, p. 104; 1826, p. 135; D'Urville, 1825, p. 43; Hooker, 1847, p. 313; Wright, 1911, p. 321; Birger, 1907, p. 294; Marquand, 1923, p. 370; Moore and Sladen, 1965, p. 32.

Annual or overwintering; stems 8–45 cm., ascending or erect, weak and rather succulent, branched, glabrous or somewhat hairy. Leaves pinnatifid, with distant, oblong, obtuse, irregularly serrate-dentate lobes, glabrous or cottony; lower leaves with lamina 25–70 × *c.* 10–18 mm., lanceolate or obovate in outline, cuneate at base; petiole *c.* 15–20 mm.; upper leaves smaller, oblong, semi-amplexicaul, with basal auricles. Capitula 8–10 × 3–5 mm., subsessile at first, later pedicellate, in dense terminal and axillary, corymbose clusters; involucral bracts 7–8 × *c.* 0·5 mm., linear, acute, glabrous, green, black-tipped, the outer about one-quarter as long as inner and usually darker. Corolla *c.* 3–5 mm., tubular, yellow, with lobes *c.* 0·2 mm., rarely a few ligulate ray-florets present; pappus about equalling corolla. Achenes 1·5–2·6 × 0·3 mm., ± cylindrical, *c.* 8- to 10-ribbed, densely appressed-hairy on ribs, reddish brown; pappus 2–3 times as long as achene, white. Fl. X–V, possibly all year.

Cultivated and disturbed ground, usually near settlements but also elsewhere, particularly following burning; common.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa but widely naturalized throughout both hemispheres.

Specimens. **WF**: TC06 *Snyder 1.iii.1853* (CU); TC84 *Cunningham 31.i.1868* (K); TC86 *Sladen 16.xii.1949*†. **EF**: UC14 *Cunningham 29.i.1868* (K); UC89 *Sladen 12.v.1949*†; VC08 *Sladen 13.v.1949*†; VC09 *Sladen 5.xii.1949*†; VC16 *Sladen JB102/9* (BM); VC47 *Hill xi.1902* (K); s. loc. *Darwin 364* (K), *Hooker 47* (K).

Tribe CARDUEAE (CYNAREAE)

Leaves alternate, simple to pinnatifid. Involucral bracts in several imbricate series, often spiny. Receptacle often with bristles, without bracts. Capitula homogamous, with tubular hermaphrodite or unisexual florets, or heterogamous, with outer florets female or sterile. Anther-cells tailed at base. Stigmatic arms separated distally; style with a ring of hairs or a swelling below the bifurcation.

15. *Cirsium* Mill.

Perennial herbs. Leaves pinnatifid. Capitula homogamous, solitary or in irregular terminal corymbs; florets tubular, unisexual or hermaphrodite. Pappus of several series of plumose hairs united at base.

1.** ***C. arvense (L.) Scop. 1772, *Fl. Carn.*, Ed. 2, **2**, p. 126. Creeping Thistle

Moore and Sladen, 1965, p. 32.

More or less dioecious, with slender tap-root producing creeping, whitish, lateral roots bearing numerous adventitious flowering and non-flowering stems. Flowering stems 30–90 cm., erect, furrowed, usually branched, glabrous or cottony above. Basal leaves with lamina 10–20 × 3–6 cm. or more, oblong-

lanceolate in outline, cuneate at base, ± pinnatifid and undulate, glabrous on upper surface, ± cottony beneath; lobes triangular, dentate-serrate, with slender marginal and strong apical spines; petiole 1–4 cm.; middle and upper leaves more deeply pinnatifid, semi-amplexicaul, sessile. Capitula 1·5–2·5 cm. in diameter, solitary or in corymbose clusters of 2–4, shortly pedicellate; involucral bracts 3–10×1·5–2·5 mm., glabrous or somewhat cottony, purplish, the outer ovate, mucronate, with ± spreading spiny points, the inner longer, lanceolate, acuminate, with erect scarious apex. Florets 9–15 mm., the wide upper part of corolla 5-lobed to its base, shorter than narrow basal tube, pale purple or whitish; female heads with abortive anthers, the male with most or all ovaries abortive. Achenes 3–4×*c.* 1 mm., ± cylindrical, obtuse, smooth, dark brown; pappus *c.* 7 times as long as achene, brownish.

Disturbed and cultivated ground near settlements; rare.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa but naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC84 *Sladen JB121/12* (BM). **EF**: UC89 *Sladen 12.v.1949*†.

16. *Silybum* Adans.

Annual or biennial herbs. Leaves simple to pinnatifid. Capitula homogamous, solitary, terminal; florets tubular, hermaphrodite. Pappus of several series of strigose hairs united at base.

1.** ***S. marianum (L.) Gaertn. 1791, *Fruct. Sem. Pl.*, **2**, p. 378. Milk Thistle

Moore and Sladen, 1965, p. 32.

Stem 40–120 cm., erect, simple or branched above, furrowed, cottony. Leaves 20–30×8–15 cm., oblong, sinuate-lobed or pinnatifid, sessile, with strongly spiny margins, glabrous, pale shiny green, with white along veins on upper side; basal leaves narrowed at base, the upper amplexicaul with rounded spiny-ciliate auricles. Capitula 40–50×10–20 mm., erect or somewhat drooping; involucral bracts 10–30×5–10 mm., glabrous, ovate-oblong at base, with terminal, triangular, spiny, leaf-like appendage having a stout, yellowish, spreading or recurved, apical spine in outer bracts, the spine shorter and erect in inner bracts. Florets 15–20 mm., with reddish purple corolla. Achenes 6–7×3–4 mm., ellipsoid-cylindrical, smooth or transversely ribbed, glabrous, blackish; pappus 2·0–2·5 times as long as achene, white.

Disturbed ground near settlements; rare.

West Falkland. Introduced; native of Eurasia and North Africa but naturalized in temperate regions of both hemispheres.

Readily distinguished from the other thistles likely to be encountered by its white-green variegated leaves.

Specimens. **WF**: TC88 *Sladen Fa121/49* (BM).

17. *Centaurea* L.

Annual or perennial herbs. Leaves simple to pinnatifid. Capitula heterogamous, solitary; florets tubular, the inner hermaphrodite, the outer larger and sterile. Pappus of several series of free, strigose hairs.

1.** ***C. cyanus L. 1753, *Sp. Pl.*, p. 911. Cornflower

Birger, 1907, p. 295.

Annual or overwintering herb. Stem 20–90 cm., erect, usually with many slender, ascending branches, furrowed, cottony. Lower leaves with lamina 4–8×0·4–1·0 cm., oblanceolate in outline, usually lyrate-pinnatifid, with few narrow lobes, rarely entire or distantly serrate-dentate; petiole up to 8 cm.; upper leaves smaller, linear-lanceolate, sessile; all with greyish cottony hairs. Capitula 15–30 mm. in diameter; involucral bracts 4–10×2·5–3·5 mm., cottony, oblong and green at base, with narrow, decurrent appendages deeply cut into long, spreading, linear-triangular, silvery or brown teeth with white margins. Marginal florets *c.* 10–15 mm., bright blue, the central smaller and reddish purple. Achenes 3–4× *c.* 1·5 mm., cylindrical, truncate, puberulent, silver-grey; pappus shorter than achene, reddish.

Cultivated ground; not recorded since Birger, perhaps extinct.
East Falkland (Port Stanley). Introduced; native of Eurasia but widely naturalized.

Tribe MUTISEAE

Leaves alternate, simple or pinnatifid. Involucral bracts in several imbricate series. Receptacular bracts absent. Capitula homogamous; florets tubular, with bilabiate corolla, hermaphrodite. Anther-cells tailed at base. Stigmatic arms thickened and hairy, or filiform with hairs only on margins and apex.

18. *Nassauvia* Comm.

Perennial herbs. Leaves simple, imbricate. Capitula sessile, 3- to 5-flowered, solitary or grouped into dense, globose inflorescence. Stigmatic arms thickened distally. Pappus of narrow, ciliate, deciduous scales.

Stems up to *c.* 15 cm., in low cushions; leaves 4–8 mm.; capitula solitary; corolla creamy-yellow; staminal tube yellow or brownish .. .. **1. *gaudichaudii***
Stems at least 25 cm., long and straggling; leaves 10–20 mm.; capitula grouped into dense globose inflorescence; corolla white; staminal tube dark purple .. .. **2. *serpens***

1. ***N. gaudichaudii*** (Cass.) Cass. ex Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 103.

D'Urville, 1825, p. 41; Gaudichaud, 1826, p. 134; Hooker, 1847, p. 319; Melvill, 1903, p. 7; Wright, 1911, p. 320; Skottsberg, 1913, p. 58; Vallentin and Cotton, 1921, pl. 27, figs. 1–7.

Mastigophorus gaudichaudii Cass. 1825, *Dict. Sci. Nat.*, **34**, p. 223; Gaudichaud, 1826, p. 470.

Low cushions up to 100 cm. in diameter and up to 8 cm. high. Stems 3–15 cm., prostrate to ascending or erect, branched especially distally, woody, covered with dead leaves and leaf-bases towards base. Leaves 4–8 × 1·5–2·0 mm., oblong-lanceolate, acute, with apical spine, rigid, recurved, sheathing at base, with thickened margins having 4–7 stiff spines on each side, sparsely ciliate and glabrous or sparsely appressed-pubescent on upper surface and on veins beneath. Capitula 5–7 × 4–6 mm., solitary, smelling strongly of nectar; involucral bracts 3–6 × *c.* 1 mm., oblong to oblong-lanceolate, acute or subobtuse, stiffly apiculate, entire, rigid, somewhat keeled, glabrous or ciliolate distally, dark green with narrow, white, scarious margin. Florets 4·5–6·0 mm.; outer corolla-lobe *c.* 2·5 × 1·2–1·8 mm., oblong-ovate, obtuse, minutely 2- to 3-lobed at apex, spreading, cream-coloured; inner lobe *c.* two-thirds as long as outer, strongly recurved at apex, entire; staminal tube yellow or brownish. Pappus-scales 4–5 × *c.* 0·2–0·4 mm., linear or linear-lanceolate, acute, the wider ones shortly bifid, appressed-pubescent on upper surface, white. Achenes *c.* 1·5 × 0·8 mm., pyriform, truncate, square in transverse section, glabrous. $2n = 44$. Fl. XII–II.

Rocky and sandy places, especially by coast, *Empetrum* heath, occasionally in *Cortaderia* grassland; common. 0–*c.* 305 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC06 *Skottsberg*, Snyder 6.i.1853* (CU); TC32 *Moore 747* (C, K, LTR, P, UC, US); TC66 *Skottsberg**; TC68 *Vallentin ii.1910* (K); TD80 *Skottsberg**; TC99 *Vallentin 1.ii.1911* (K, MANCH); UC19 *Booth 82* (LTR); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); UC32 *Skottsberg**; UC65 *Skottsberg**; VC28 *Gaudichaud* (K); VC36 *Skottsberg**; VC37 *Greene 81* (BIRM, K); VC46 *Moore 559* (CHR, K, LP, LTR, S); VC47 *Skottsberg**, *Davies i.1938* (K), *Hill xi.1902* (K); s. loc. *Davies BF59* (K), *Darwin 327, 328* (CGE, K), *Lechler 138* (K), *Hooker* (K), *Wright* (K), *Chartres* (K).

2. ***N. serpens*** D'Urv. 1825, *Fl. Is. Mal.*, p. 41.

Gaudichaud, 1826, p. 134; Hooker, 1847, p. 319; Wright, 1911, p. 321; Skottsberg, 1913, p. 58; Vallentin and Cotton, 1921, pl. 27, figs. 8–12.

Stems 25–200 cm. or more, prostrate or ascending to erect, branched, brittle, leafy over whole length, green distally. Leaves 10–20 × 4–7 mm., ovate, acute, serrate to serrate-crenate, usually rather rigid, often

recurved, densely whitish sericeous beneath, less so on upper surface, sheathing at base. Capitula grouped into dense, globose inflorescence *c.* 25 mm. in diameter, smelling strongly of nectar; involucral bracts 6–10×1·0–1·5 mm., linear to linear-lanceolate, acute, entire, densely white-silvery-sericeous. Florets 9–11 mm.; outer corolla-lobe *c.* 3·0–3·5×*c.* 1–6 mm., oblong-obovate, obtuse, 3-lobed or 3-toothed at apex, somewhat recurved, white; inner lobe *c.* half as long as outer and much narrower, strongly recurved at apex, entire; staminal tube dark purple or bluish. Pappus-scales 5–6×*c.* 0·2–0·4 mm., linear or linear-lanceolate, acute, glabrous or sparsely ciliate, white. Achenes *c.* 3–4×*c.* 1 mm., cylindrical to narrowly pyriform, truncate, ± square in transverse section, glabrous. $2n = 22$. Fl. I. (Plate IIIe)

In stone runs, growing up among boulders, also reported among *Chiliotrichum*; locally rather common. *c.* 30–700 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis; Mount Simon (as Mount Chatellux), 20.xi.–18.xii.1822. *D'Urville* (P).

A vegetative specimen (*Moore 893*: LTR), collected in feldmark *c.* 400 m. at the north-north-west end of Mount Donald, West Falkland, seems closest to this species, but the stems only attain 6 cm., while the leaves are glabrous and very thick. These characters may be due to the exceptional exposed habitat, but further study is clearly desirable.

Specimens. **WF**: TC06 *Snyder 1.ii.1853* (CU); TD40 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin 14.i.1910* (MANCH); TC69 *Vallentin ii.1910* (K); TC88 *Moore 893* (LTR), *Skottsberg**, *Vallentin iii.1911* (MANCH); UC18 *Skottsberg**; UC27 *Skottsberg**. **EF**: UC76 *Corner 344* (LTR), *Moore 583* (BIRM, C, GH, K, LP, LTR, P, S, UC, US); VC27 *Hooker viii.1842* (K); VC47 *Skottsberg**; s. loc. *Chartres* (K).

19. *Leuceria* Lag.

Perennial herbs. Leaves entire to pinnatifid. Capitula solitary, terminal. Pappus of one series of plumose hairs united at base.

1. *L. suaveolens* (D'Urv.) Skottsb. 1909, *Wiss. Ergebn. schwed. Südpolarexped.*, **4**, No. 10, p. 51. Vanilla Daisy

Skottsberg, 1913, p. 58.

Chabraea suaveolens (D'Urv.) DC. 1838, *Prodr.*, **7**, p. 59; Hooker, 1847, p. 321; Melvill, 1903, p. 7.

Leuceria gossypina Hook. & Arn. 1836, *Comp. Bot. Mag.*, **2**, p. 43; Wright, 1911, p. 323; Vallentin and Cotton, 1921, pl. 36.

Percidium suaveolens D'Urv. 1825, *Fl. Is. Mal.*, p. 43; Gaudichaud, 1826, p. 135.

Stems when flowering 10–32 cm., erect, simple, densely white-lanate, arising from swollen basal stock clothed with dark brown, ovate, stiffly ciliate, fibrous scales *c.* 2·5–5·0 cm. Basal leaves with lamina 25–95×12–30 mm., oblong to oblong-oblanceolate, rarely obovate in outline, pinnatifid almost to mid-vein, densely lanate beneath, less so on upper surface, rarely subglabrous and glandular-ciliolate; lobes oblong or triangular-oblong, rounded, entire; petiole 1·8–11·0 cm., densely lanate, rarely sparsely glandular-pubescent; upper cauline leaves 10–20×2–4 mm., linear-lanceolate, acute, entire, lanate. Capitula 30–50 mm. in diameter, strongly vanilla-scented; involucral bracts 11–16×*c.* 2–3 mm., linear-lanceolate, acute, entire, densely white-lanate. Florets equalling or somewhat shorter than pappus, with tube *c.* 5 mm.; outer corolla-lobe 6–15×2–4 mm., larger in marginal florets, oblong, obtuse, 3-toothed at apex, creamy-white; inner corolla-lobe *c.* 2–3×0·5 mm., entire, strongly recurved at apex. Achenes *c.* 3·0×*c.* 0·8 mm., cylindrical-oblanceolate, strongly compressed, truncate, densely strigose-tuberculate, glabrous, olive-brown; pappus about twice as long as achene, white. $2n = 40$. Fl. XI–I(–II).

Empetrum heath, *Cortaderia* grassland, with *Bolax* on rocky areas; common. 0–*c.* 580 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis; "In apricis", 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC04 *Skottsberg**; TC06 *Snyder 1.xii.1852* (CU); TC31 *Moore 702* (BIRM, K, LTR); TC32 *Moore 746* (C, GH, LTR); TD40 *Skottsberg**; TC59 *Skottsberg**; TC66 *Skottsberg**; TC68 *Vallentin* (MANCH); TC79 *Moore 842* (K, LTR); TC88 *Skottsberg**; TC99 *Vallentin 15.i.1911* (MANCH); s. loc. *Vallentin* (K), *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH). **EF**: UC58 *Moore 653* (LTR); UC76 *Moore 570* (LTR, US); VC36 *Skottsberg**; VC37 *Skottsberg**, *Cunningham i.1868* (K), *Moore 519* (K, LP, LTR, S), *Davies BF1* (K); VC46 *Killingbeck 98* (BIRM), *Holdgate 638* (BIRM); VC47 *Greene 24* (BIRM, K), *Skottsberg**, *Sladen Fa5/50* (BM), *Hill xi.1902* (K), *Booth 7* (LTR), *Bennett 9.xii.1917* (K), *Elliott 337* (K), *Cunningham 17.i.1868* (K); s. loc. *Hooker* (K), *Lechler 18.ix.1850* (K), *Wright* (K), *Abbott in 1860* (K), *Darwin* (CGE), *Ingram in 1938* (BM).

20. *Perezia* Lag.

Suffruticose perennials. Leaves simple. Capitula solitary or few in terminal cluster. Pappus of several series of strigose hairs, united at base.

1. *P. recurvata* (Vahl) Less. 1830, *Linnaea*, **5**, p. 21. Falkland Lavender

Wright, 1911, p. 323; Skottsberg, 1913, p. 58; Vallentin and Cotton, 1921, pl. 37.

Homoianthus echinulatus Cass. 1825, *Dict. Sci. Nat.*, **38**, p. 458; Hooker, 1847, p. 322; Melvill, 1903, p. 7.
Percidium recurvatum Vahl 1791, *Skrivt. Nat. Selsk.*, **1**, Pt. 2, p. 13; Gaudichaud, 1825, p. 104; 1826, p. 135; D'Urville, 1825, p. 43.

Forming small clumps or bushes up to 25(–80) cm. Stems 7–50 cm., procumbent to erect, rather woody, densely clothed with leaf-bases below and with imbricate leaves above. Leaves 8–18 × 1·5–2·0 mm., linear or sublinear, spiny-apiculate, somewhat widened and sheathing at base, with ciliate, strongly revolute margins which have curved spines on the rounded part, recurved, rigid, glabrous, dark glossy green on upper surface, paler beneath. Capitula 1(–3), *c.* 20 × 15–27 mm.; peduncle 0·5–2·5 cm., bracteate, densely glandular-pubescent, the bracts 2–5(–6), 7–8 × 1·0–1·5 mm., oblong, stiffly apiculate, spiny-laciniate, glandular-pubescent; involucral bracts 5–15 × 1·0–2·5 mm., the outer ones shortest, oblong-lanceolate to lanceolate, apiculate, the outer spiny or laciniate, the inner serrate to entire, glandular-pubescent, with narrow to wide, green or brownish green central stripe and wide scarious margins. Florets exceeding pappus, with tube *c.* 9 mm.; outer corolla-lobe 8–10 × *c.* 2 mm., oblong, obtuse, 3-denticulate at apex, blue-lilac or white; inner lobe *c.* 3 × 0·8 mm., linear, entire, strongly recurved. Achenes *c.* 4–6 × 2 mm., oblong, truncate, densely glandular-pubescent, dark brown; pappus *c.* 2–3 times as long as achene, brown. Fl. XII–II.

Rocky and sandy places by sea, sometimes in coastal *Empetrum* heath; fairly common. 0–61 m.
West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 47°S.
Typus. "Ad fretum magellanicum", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC06 *Snyder 3.xii.1852* (CU); TC31 *Moore 759* (BIRM, GH, LTR), *Skottsberg**; TC68 *Vallentin 2.ii.1910* (K); TC99 *Vallentin xii.1910–ii.1911* (MANCH); UC27 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Vallentin* (BM), *Nichol in* 1899 (BM). **EF**: UC65 *Skottsberg**; UD62 *Hamilton 16.xii.1935* (BM); VC19 *Sladen Fa37/49* (BM); VC28 *Skottsberg**, *Lesson* (K), *Sladen 4.xii.1949* (BM); VC36 *Skottsberg**; VC46 *Moore 556* (K, LP, LTR, S); VC47 *Cunningham i.1868* (K), *Hill xi.1902* (K), *Booth 63* (LTR), *Skottsberg**, *Hamilton 30* (BM), *Sladen Fa27/50* (BM), *Lamb 2896* (BM); s. loc. *Wright* (K), *Ingram in 1938* (BM), *Edmonston* (K), *Hooker* (BM).

Tribe CICHORIEAE

Plants with copious latex. Leaves basal or alternate, simple to pinnatifid. Involucral bracts in one to several series. Receptacular bracts present or absent. Capitula homogamous; florets ligulate, hermaphrodite; ligule 5-toothed at apex. Anther-cells acute or sometimes tailed at base. Stigmatic arms long, flattened and receptive on upper surface, rounded and hairy beneath.

21. *Hypochoeris* L.

Perennial herbs. Leaves basal, simple or pinnatifid. Capitula solitary, terminal on long, bracteate, simple or branched peduncles; receptacle flat, with bracts; involucral bracts in several imbricate series. Anthers shortly tailed. Achenes, at least the inner, beaked; pappus of one series of plumose hairs or also with outer series of simple hairs.

Leaves glabrous or sparsely hirsute-hispid on upper surface; peduncles simple, 1(–5) per plant; involucral bracts laciniate, prominently hispid; pappus-hairs plumose, in one series **1. *arenaria***
Leaves prominently hispid; peduncles forked, 4–12 or more per plant; involucral bracts entire, usually glabrous; pappus-hairs in plumose inner and simple outer series .. .. .. **2. *radicata***

1. *H. arenaria* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 103.

D'Urville, 1825, p. 40; Gaudichaud, 1826, p. 134; Wright, 1911, p. 324; Skottsberg, 1913, p. 59; Cabrera, 1963, p. 167.

Achyrophorus webbii Sch. Bip. 1845, *Nov. Acta Acad. Caesar Leop. Carol.*, **21**, Pt. 1, p. 97.
A. arenarius (Gaudich.) DC. 1838, *Prodr.*, **7**, p. 95; Hooker, 1847, p. 323.

Leaves with lamina 10–70 × 5–17 mm., very variable in shape, obovate-lanceolate in outline, irregularly pinnatifid, with linear to triangular-lanceolate, acute segments, glabrous, sometimes sparsely hirsute-hispid on upper surface but rarely so beneath; terminal segment largest; oldest leaves sometimes oblanceolate to subspathulate, obtuse, sinuate and irregularly denticulate; petiole up to 50 mm., usually winged. Peduncles 1–8 cm. (–20 cm. in fruit), simple, hirsute distally, sparsely so or glabrous below, the upper half usually with 1–2(–4) sublinear, acute bracts *c.* 3–8 mm. Capitula (7–)15–20 × 5–9 mm., narrowly campanulate; involucral bracts 5–25 × 1–2 mm., linear to linear-lanceolate, the inner acute, the outer obtuse and much shorter, entire, the inner usually glabrous or subglabrous, the outer with coarse hairs dorsally, dark brownish green to black with pale scarious margins. Florets with tube 4–5 mm.; ligule *c.* 5·0 × 1·5 mm., obovate-cuneiform, bright yellow; receptacular bracts 12–16 × 0·5–2·0 mm., linear to linear-lanceolate, acute to acuminate. Achenes 5–6 × *c.* 0·5 mm., tapering to beak *c.* 2·5–3·0 mm., narrow pyriform, longitudinally furrowed, transversely striate, muricate, dark brown; pappus-hairs in one series, plumose, slightly shorter than achene (including beak), white. $2n = 8$. Fl. XII–II.

Open areas in most communities, but especially dwarf shrub heath; common. 0–580 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 43°S., the Andes at *c.* lat. 39°25′S.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

A very variable species, particularly in leaf shape, but distinguished from all other yellow-flowered Compositae except *H. radicata* and *Leontodon* by its plumose pappus.

Specimens. **WF**: TC32 *Moore 751* (BIRM, K, LTR, US), *Moore 799* (LTR); TC41 *Moore 701* (LTR); TD40 *Moore 918* (LTR); TC51 *Moore 795* (GH, LTR); TC79 *Moore 864* (LTR); TC88 *Moore 885* (K, LTR), *Skottsberg**; TD80 *Skottsberg**; TC99 *Vallentin i.1911* (MANCH); UD11 *Sladen Fa69/49* (BM); UC27 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH). **EF**: UC65 *Moore 628* (K, LTR, S), *Skottsberg**; UC69 *Skottsberg**; UC76 *Moore 610b* (LTR); VC16 *Sladen JB102/2* (BM); VC28 *Sladen Fa59/49* (BM); VC47 *Moore 531* (K, LP, LTR), *Booth 50* (LTR), *Skottsberg**; s. loc. *Darwin iii.1834* (CGE, K), *Hooker* (BM, K), *Bennett 9.xii.1917* (BM).

2. *H. radicata L. 1753, *Sp. Pl.*, p. 811. Cat's Ear

Davies, 1939, p. 63; Moore and Sladen, 1965, p. 33.

Leaves with lamina 20–60 × 5–15 mm., oblong-oblanceolate, obtuse, gradually narrowing to base, irregularly sinuate-dentate to sinuate-pinnatifid, hispid; petiole up to 30 mm., widely winged, hispid. Peduncles 5–30 cm., several from each rosette, erect or ascending, usually forked, wider just below capitulum, usually glabrous, with numerous ovate, obtuse or acuminate, brown, scale-like bracts 2–4 mm. Capitula *c.* 15 × 20–30 mm., campanulate; involucral bracts 3–15 × *c.* 1·5 mm., lanceolate, acuminate, entire, glabrous or sparsely ciliolate, the outer stiffly hairy distally on mid-vein, dull brownish green with pale scarious margin. Florets with tube 4–6 mm.; ligule 7–9 × 1·4–2·0 mm., oblong-oblanceolate, bright yellow, the outermost greenish or greyish beneath; receptacular bracts 8–10 × *c.* 0·8 mm., linear-lanceolate, long-acuminate, entire, sparsely ciliolate, membranous, greenish on midline. Achenes 4–7 × *c.* 0·7 mm., narrow pyriform, tapering to beak 3–8 mm., or the outer without beak, longitudinally furrowed, transversely striate, muricate, dark reddish brown; pappus-hairs in two series, the inner plumose, the outer simple and scabrid, all shorter than achene (including beak), white. Fl. I–II.

Coastal slopes and disturbed ground, especially near settlements; locally common.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC79 *Moore 861* (GH, K, LP, LTR, S); TC88 *Sladen 18.xii.1949*†. **EF**: VC46 *Hamilton 21* (BM); VC47 *Davies BF15* (K), *Sladen JB105/49* (BM).

Leontodon hispidus L. 1753, *Sp. Pl.*, p. 799, a native of Eurasia that resembles *Hypochoeris*, was recorded as introduced near Port Stanley by Birger (1907, p. 279). It is a scapigerous herb with sinuate-dentate to irregular pinnatifid leaves in a basal rosette and a solitary yellow-flowered capitulum. It is distinguished from similar Compositae found in the Falkland Islands by the unbeaked achene and by the forked hispid hairs usually present on the leaves, and from all except *Hypochoeris* in the pappus-characters. Unlike *Hypochoeris* it lacks receptacular bracts.

22. *Sonchus* L.

Annual to biennial herbs. Leaves simple or pinnatifid; cauline leaves amplexicaul. Capitula grouped into irregular corymbose umbels; receptacular bracts absent; involucral bracts in several imbricate series. Anthers not tailed. Achenes not beaked; pappus of two equal series of simple scabrid hairs.

Cauline-leaves with pointed auricles; achene transversely striate .. .. **1. *oleraceus***
Cauline-leaves with rounded auricles; achene not transversely striate .. .. .. **2. *asper***

1. *S. oleraceus L. 1753, *Sp. Pl.*, p. 794. Sow-thistle

D'Urville, 1825, p. 39; Gaudichaud, 1826, p. 134; Moore and Sladen, 1965, p. 32.

Annual or overwintering; stems 20–100 cm. or more, erect, branched above, with hollow internodes, ± 5-angled, glabrous or glandular-hairy above. Basal leaves 13–17×4–9 cm., usually ovate, serrate, glabrous, with winged petiole up to 5 cm.; cauline-leaves pinnatifid, with terminal lobe usually wider than uppermost pair of laterals, with short-winged petiole and acute usually wide, spreading auricles, the uppermost leaves smaller and lanceolate, serrate; all glabrous when mature, ± glaucous. Capitula 20–25 mm. in diameter; involucral bracts 5–15×1–2 mm., lanceolate, acute, glabrous, rarely glandular-hairy, the outer shorter and more acute than the inner. Florets with tube *c.* 8 mm.; ligule 3–5×*c.* 1 mm., oblong, yellow, the outer purple-tinged beneath. Achenes *c.* 3×1 mm., oblanceolate, compressed, not winged, with three longitudinal ribs on each face, transversely striate, brown; pappus *c.* three times as long as achene, white.

Cultivated ground near settlements, sometimes on coastal sand near settlements; rare.

West Falkland. Introduced; native of Eurasia but a common weed of cultivation in many parts of the world.

Specimens. **WF**: TD40 *Sladen JB123/7* (BM).

2. *S. asper (L.) Hill 1760, *Fl. Brit.*, p. 395. Spiny Sow-thistle

Moore and Sladen, 1965, p. 32.

Resembles *S. oleraceus* in habit but differs in the stiffer leaves which are less often pinnatifid but if so, have the terminal lobe narrower than the uppermost pair of laterals, have rounded auricles appressed to the stem, are often crispate and spinous-ciliate on the margin and are usually dark, glossy green on the upper surface; florets golden-yellow; achenes *c.* 3×1·5 mm., obovoid, compressed, sometimes with narrow ciliolate wings, with three longitudinal ribs on each face, otherwise smooth, brown.

Disturbed ground around settlements, open ground along coasts, especially near settlements; fairly common.

West Falkland, East Falkland. Introduced; native of Eurasia but a common weed of cultivation in many parts of the world.

Specimens. **WF**: TC06 *Snyder 1.iii.1853* (CU); TC88 *Moore 830* (LTR). **EF**: VC16 *Sladen JB102/7* (BM).

23. *Hieracium* L.

Perennial herbs, sometimes stoloniferous. Leaves basal, but sometimes alternate, cauline leaves also present, simple. Capitula solitary and terminal, or grouped into corymbose panicle; receptacular bracts absent; involucral bracts in few to several imbricate series. Anther-cells shortly tailed. Achenes truncate, not beaked; pappus of 1–2 series of simple-rigid, brittle hairs.

1. Plant usually less than 15 cm.; leaves not pilose, usually with shortly stalked glands near margins .. .. **1. *antarcticum***
   Plant usually 15 cm. or more; leaves densely long-, white-pilose, usually without stalked glands 2
2. Plant not stoloniferous; ligules yellow; involucral bracts ± densely black glandular-pilose, somewhat white floccose .. .. **2. *patagonicum***
   Plant stoloniferous; ligules brick-red; involucral bracts densely white-pilose, with black glandular hairs intermingled, slightly floccose .. .. **3. *aurantiacum***

1. ***H. antarcticum*** D'Urv. 1825, *Fl. Is. Mal.*, p. 39.

Gaudichaud, 1847, p. 134; Wright, 1911, p. 324; Skottsberg, 1913, p. 59; Sleumer, 1956, p. 104.

Stems 3–14 cm., densely black-hairy, floccose, usually with stipitate glands intermingled. Basal leaves with lamina 20–55(–70)×4–14(–19) mm., elliptical to oblanceolate, acute to subobtuse, narrowing to petiole, obscurely sinuate-dentate, glabrous or sparsely floccose-pubescent beneath, usually with shortly stipitate glands at margins and often also beneath; petiole *c.* half as long, rarely as long, as lamina, rather slender; cauline leaves up to 25 mm., linear-lanceolate, acuminate, the uppermost linear, bract-like, usually floccose and glandular. Inflorescence of 1–2(–4) capitula; pedicels 2–25(–40) mm., floccose, with many black hairs and stipitate glands. Capitula 7–12×5–10(–15) mm., campanulate; involucral bracts 4–10×1·0–1·5 mm., linear-lanceolate, acute to obtuse, entire, dark green to black with pale green or white margins, densely black-pilose, sometimes with few stipitate glands. Florets with tube 2–3 mm.; ligule 2–3 mm., glabrous, yellow. Achenes 3·0–3·5×0·5–0·7 mm., cylindrical, serrulate on ribs, dark brown; pappus *c.* 1·5 times as long as achene, yellowish white. $2n = 18$. Self-compatible and self-pollinated. Fl. XII–II.

Dry open soil, especially in *Empetrum* heath; common. 0–*c.* 600 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 50°10′S., east Patagonia (*c.* lat. 51°33′S.), north along the Andes to *c.* lat. 37°S. as var. *myosotidifolium* (Sch. Bip.) Sleumer.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC32 *Moore 798* (LTR); TC51 *Moore 794* (K, LTR); TC66 *Skottsberg**; TC84 *Cunningham 31.i.1868* (K); TC86 *Sladen Fa83/49* (BM); TC87 *Sladen Fa103/49* (BM); TC99 *Vallentin iii.1911* (MANCH); UC27 *Skottsberg**; s. loc. *Vallentin* (BM), *Nichol in 1899* (BM). **EF**: UC58 *Skottsberg**; UC77 *Moore 594* (K, LTR); VC37 *Skottsberg**; VC47 *Hooker 106* (K), *Moore 537* (GH, K, LP, LTR, S), *Davies BF29* (K), *Bennett 12.i. & 24.iii.1935* (BM); s. loc. *Hooker* (BM).

2. ***H. patagonicum*** Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 324.

Sleumer, 1956, p. 130.

H. austroamericanum Dahlst. 1907, in Dusén, *Ark. Bot.*, **7**, Pt. 2, p. 51; Skottsberg, 1913, p. 59.

Stems 15–35 cm., ± densely covered with strigulose, black-based, white hairs and very shortly stipitate glands. Basal leaves with lamina 50–80(–120)×8–15(–30) mm., oblong-oblanceolate, subacute, gradually narrowing to petiole, entire to obscurely sinuate-dentate, densely covered with strigulose, patent, white hairs; petiole less than one-quarter as long as lamina, rather wide; cauline leaves up to 30 mm., linear-lanceolate, obscurely dentate, hairy, sessile. Inflorescence of ten or more capitula; branches 20–35 mm., usually forked, with white, black-stalked glands. Capitula 8–10×*c.* 5 mm., cylindrical-campanulate; involucral bracts 7–10×1·0–1·4 mm., lanceolate to ovate-lanceolate, acute, entire, dark green with wide pale margins, floccose, especially towards base, and with sparse to rather frequent black-stalked glands near mid-vein. Florets with tube *c.* 3 mm.; ligule *c.* 5 mm., sparsely pubescent dorsally, yellow. Achenes 3·0–3·5×*c.* 0·7 mm., cylindrical, serrulate on ribs, dark brown; pappus *c.* 1·3 times as long as achene, brownish white. $2n = 18$. Self-compatible and self-pollinated. Fl. I–II.

Dry soil, especially in *Empetrum* heath, on coast; rare. *c.* 3 m.

West Falkland. Fuegia, Andean Patagonia north to lat. 42°45′S., east Patagonia (lat. 47°–51°33′S.), southern Chile (*c.* lat. 37–35°S.).

Typus. Argentina: Prov. Santa Cruz; Río Gallegos, Cabo Buen Tiempo (Cape Fairweather). *King* (K).

Specimens. **WF**: TC66 *Skottsberg**; TC68 *Vallentin ii.1910* (MANCH); TC88 *Sladen Fa116/49, 118/49* (BM), *Moore 835* (K, LP, LTR, S); UC27 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *Firmin 40* (K), *Proges in 1920* (BM).

*3. ***H. aurantiacum*** L. 1753, *Sp. Pl.*, p. 801.

Moore, 1967*a*, p. 23.

Stoloniferous. Stems 20–40 cm., ± densely covered with patent, white hairs and with stipitate glands distally. Basal leaves with lamina *c.* 40–100×13–16 mm., obovate to elliptical, subacute to obtuse, narrowing to short rather wide petiole, entire or very obscurely sinuate-dentate, densely covered with strigulose patent white hairs; cauline leaves up to 35 mm., linear-oblanceolate, otherwise as basal leaves but sessile. Inflorescence of 6–15 or more capitula; branches 10–20 mm., sometimes forked, floccose and densely stipitate-glandular. Capitula 10–15×8–20 mm.; involucral bracts 5–7×*c.* 1 mm., oblong-lanceolate, obtuse, dark green with paler margins, often purplish towards apex, with long white hairs and

black-stalked glands, slightly floccose towards base. Florets with tube 3–4 mm.; ligule 7–8 mm., slightly floccose dorsally near base, deep orange-red. Achenes *c.* 2·0×0·5 mm., cylindrical, very slightly serrulate on ribs, dark chestnut-brown; pappus *c.* twice as long as achene, yellowish white. Fl. I.

Dry turf on shallow rocky soil near settlements; rare.

East Falkland. Introduced; probably a garden escape, native of central Europe.

Specimens. **EF**: VC37 *Moore 538* (BIRM, GH, K, LP, LTR, S).

24. *Taraxacum* Wiggers

Perennial herbs with stout tap-root. Leaves in basal rosette, simple to pinnatifid. Capitula solitary, terminal; receptacle flat, without bracts; involucral bracts in several imbricate series. Anthers acuminate but not tailed at base. Achenes ± long-beaked; pappus-hairs in several series, simple, strigose, white.

Capitula up to *c.* 2 cm. in diameter; receptacular bracts with conspicuous scarious margins, the outer appressed to spreading, never reflexed .. .. **1. *magellanicum***

Capitula usually 3 cm. or more in diameter; receptacular bracts without conspicuous scarious margins at least distally, the outer reflexed, rarely spreading .. .. **2. *officinale***

1. *T. magellanicum* Comm. ex Sch. Bip. 1855, *Flora, Jena*, **38**, p. 122.

Skottsberg, 1913, p. 61.

T. laevigatum auct., non (Willd.) DC.; D'Urville, 1825, p. 40; Gaudichaud, 1826, p. 134.
T. officinale var. *laevigatum* auct., non Kuntze; Wright, 1911, p. 324.
T. dens-leonis var. *laevigatum* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 323.

Leaves with lamina 2·5–10·0×0·4–1·2 cm., sublinear to obovate-oblong or oblanceolate in outline, obtuse, tapering to petiole, distantly crenate to crenate-dentate or shallowly to deeply runcinate-pinnatifid, the lobes becoming smaller distally, glabrous or sometimes sparsely white-hairy. Scapes one or more, 2–12(–17) cm., erect, slender, glabrous to sparsely hairy, especially distally. Capitula 0·6–2·0 cm. in diameter, campanulate; involucral bracts 2–12×1·2–2·5 mm., ovate, obtuse, glabrous but ciliate at apex, dark green, with paler wide scarious margins, often suffused with purple distally, the outer appressed at first and spreading later. Florets with tube *c.* 3–4 mm.; ligule 4–8×*c.* 1·0–1·5 mm., linear-oblong, 5-toothed at apex, yellow, but at least the outer dark green beneath. Achenes *c.* 3 mm., cylindrical to oblanceolate, compressed, strongly ribbed, muricate at least distally, brownish; beak 3–5 mm., slender; pappus about as long as achene and beak. Fl. XI–I.

Dry places in *Empetrum* heath; rather uncommon.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 43°30′S., New Zealand.

Typus. Chile: Magallanes; near Punta Arenas, "pampas". *Lechler 1103.*

Specimens. **WF**: TC06 *Snyder 7.xii.1852* (CU), *Skottsberg**; TC58 *Skottsberg**; TC66 *Skottsberg**; TC88 *Skottsberg**; TC96 *Sladen Fa82/49* (BM); s. loc. *Nichol in 1899* (BM), *Vallentin* (BM). **EF**: VC28 *Skottsberg**; VC47 *Skottsberg**; s. loc. *Hooker* (BM, K).

2. *T. officinale Weber ex Wiggers 1780, *Prim. Fl. Holsat.*, p. 56. Dandelion

Melvill, 1903, p. 7; Birger, 1907, p. 295; Skottsberg, 1913, p. 78; Moore and Sladen, 1965, p. 32.

Similar to *T. magellanicum* but generally larger and more robust. Capitula 3–6 cm. in diameter; outer involucral bracts linear-lanceolate to linear, green, without pale scarious margins at least distally, usually strongly reflexed.

Disturbed and cultivated ground near settlements; local.

East Falkland. Introduced; native of the Northern Hemisphere.

Specimens. **EF**: UC89 *Sladen 12.v.1949*†; VC09 *Sladen 4–5.xii.1949*†; VC47 *Moore ii.1964*†.

25. *Agoseris* Rafin.

Usually perennial herbs. Leaves basal, simple to pinnatifid. Capitula solitary, terminal; receptacle flat, without bracts; involucral bracts in several imbricate series. Anthers acuminate but not tailed at base. Achenes long-beaked; pappus-hairs in several series, simple, strigulose, white.

1. *A. coronopifolium* (D'Urv.) Chambers **comb. nov.**

Troximon pumilum (Gaudich.) Wildem. 1905, *Résult. Voyage S.Y. Belgica*, p. 182; Skottsberg, 1913, p. 61.
Macrorhynchus pumilus (Gaudich.) DC. 1838, *Prodr.*, **7**, p. 152; Hooker, 1847, p. 324; Wright, 1911, p. 324.
Taraxacum pumilum Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 103; D'Urville, 1825, p. 40; Gaudichaud, 1826, p. 134, 461.
T. coronopifolium D'Urv. 1825, *Fl. Is. Mal.*, p. 40; Gaudichaud, 1826, p. 134.

Leaves with lamina 20–80 × 2–15 mm., oblanceolate to oblong or linear-oblong in outline, subobtuse to acute, tapering to base, usually deeply cut into linear to triangular-ovate, acute segments, rarely subentire, glabrous to fimbrio-ciliate or hairy. Peduncles 1–12 cm., scapiform, erect, usually ± appressed-hairy. Capitula 8–15 × 3–8 mm., cylindrical to subcampanulate, wider in fruit; involucral bracts 4–15 × 1–2 mm., linear to linear-lanceolate, acute, entire, white-ciliate, the outer with white trichomes on midline, dark green, with paler or white, scarious margins. Florets with tube *c.* 3–6 mm.; ligule 3–5 × *c.* 0·8 mm., yellow, the outer often purplish brown beneath. Achene 4–5 × *c.* 0·7 mm., narrowly pyriform, deeply 9- to 10-ribbed, glabrous, pale to dark brown; beak three-fifths to as long as achene; pappus slightly shorter than to as long as achene. $2n = 18$. Self-compatible. Fl. XI–II.

Dry, open soil and sand, especially in *Empetrum* association; common. 0–*c.* 90 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 47°S.

Typus. East Falkland: Port Louis, 20.xi–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC06 *Snyder 22.xii.1852*; TC32 *Moore 800* (LTR), *Moore 745* (GH, LTR); TD40 *Moore 917* (C, LTR); TC50 *Moore 774* (LTR); TC55 *Skottsberg**; TC66 *Skottsberg**; TC84 *Sladen JB121/8* (BM); TC86 *Sladen Fa81/49* (BM); TC88 *Moore 836* (LTR, S), *Skottsberg**; TD80 *Vallentin iii.1911* (MANCH); s. loc. *Firmin 39* (K), *Vallentin* (BM), *Nichol* (BM). **EF**: UC65 *Moore 644* (K, LP, LTR), *Skottsberg**; VC28 *Sladen JB111/11* (BM), *Skottsberg**; VC47 *Sladen Fa1/51* (BM), *Hamilton JH44* (BM), *Skottsberg**; s. loc. *Darwin iii.1834* (CGE, K), *Hooker 51* (BM, K), *Hennis* (BM), *Bennett 3.xi.1937* (BM).

MONOCOTYLEDONES

JUNCAGINACEAE

1. *Tetroncium* Willd.

Dioecious, glabrous, perennial, rhizomatous herbs, resembling *Juncus*. Leaves distichous, simple. Flowers deflexed, many, in terminal ebracteate spike. Perianth-segments 4. Stamens 4, opposite and inserted at base of perianth-segments, absent in female. Carpels 4, united at base into incompletely 4-locular ovary, one ovule per loculus. Fruit indehiscent, 4-celled; seed usually single, with three aborted ovules.

1. *T. magellanicum* Willd. 1808, *Ges. Nat. Freunde Berl. Mag.*, **2**, p. 17.

Hooker, 1847, p. 359; Wright, 1911, p. 330; Skottsberg, 1913, p. 11; Moore and Sladen, 1965, p. 31.

Rhizome ascending, up to 6 mm. in diameter, producing stems towards apex. Stems 2·5–6·0 cm., ascending or erect, branched near base, densely covered with brown leaf-bases, and with leaves towards apex. Leaves 1·7–11·0 cm., 1·5–3·0 mm. wide, linear-oblong, acute, rigid, with membranous basal sheath, folded and overlapping in two rows. Inflorescence 1·3–3·5 cm.; scape 2·5–18·0 cm., erect; pedicels *c.* 0·5 mm., or absent. Perianth-segments 1·2–2·0 × 0·5–1·5 mm., the two upper larger, ovate to ovate-lanceolate, acute or subobtuse, entire or irregularly serrulate, reddish brown; anthers creamy white, subsessile. Fruit 4–8 × *c.* 1 mm., subulate, with four wide ribs which separate from the middle into four attenuate, distally curved horns formed by the persistent styles, smooth, reddish brown. Fl. XII–I. (Plate VIk)

Boggy ground in *Cortaderia* grassland; rare.

West Falkland, East Falkland. Fuegia, west Patagonia north to *c.* lat. 46°S., Chiloe, Andean Patagonia (*c.* lat. 51°S.).

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (BM!).

Specimens. **WF**: TC79 *Moore 866* (GH, K, LP, LTR); TC86 *Sladen Fa125/49* (BIRM, BM); s. loc. *Wright* (K). **EF**: VC37 *Skottsberg**; s. loc. *Hooker* (K).

POTAMOGETONACEAE

1. *Potamogeton* L.

Glabrous, perennial, rhizomatous, aquatic herbs. Leaves alternate, distichous, simple, floating and submerged leaves of different forms, with sheathing scale ("stipule") in leaf-axil. Flowers actinomorphic, hermaphrodite, many in axillary spikes. Perianth-segments 4. Stamens 4, sessile, at base of perianth-segments. Carpels 4, free, each with one ovule; stigma ± sessile. Fruit a drupe with fleshy exocarp and boney endocarp, up to four from each flower; seed 1, without endosperm.

1. ***P. linguatus*** Hagstr. 1901, in Dusén, *Öfvers. K. VetenskAkad. Förh.*, **58**, No. 4, p. 259.

"Native Pondweed"

Graebner, 1907, p. 74; Marquand, 1923, p. 370; Skottsberg, 1929, p. 304.

Stems 30–50 cm., rather rigid, simple or branched, subterete. Submerged leaves *c.* 40–70 × 18–25 mm., oblong-lanceolate, obtuse, entire, rather membranous; petiole 1–3 cm.; floating leaves 40–100 × 17–40 mm., elliptical or oblong to oblong-lanceolate, obtuse, cuneate at base, entire, coriaceous, often reddish, with petiole 3–8 cm.; stipules 30–60 × 8–14 mm., lanceolate or ovate-lanceolate, obtuse, sheathing at base, persistent. Peduncle 3·5–6·0 cm., erect; inflorescence 8–25 × 3–8 mm., cylindrical. Fruit 2·5–3·5 × 1·5–2·0 mm., obovoid, compressed, with dorsal margin conspicuously keeled and ventral margin convex, conspicuously beaked at apex, reddish brown. Fl. I–II.

Fresh-water lakes and ponds; rare.

West Falkland. Fuegia, Andean Patagonia north to *c.* lat. 47°S., southern Chile (*c.* lat. 41°S.).

Typus. Chile: "Patagonia austral; Kark", 30.iii.1899. *Dusén.*

Specimens. **WF**: TC42 *Moore 818* (CHR, GH, K, LP, LTR, S); TC69 *Vallentin ii.1910* (K); TC87 *Sladen Fa122/49* (BM), *Vallentin ii.1910* (K); TC99 *Vallentin ii.1911* (K), *iii.1911* (K, MANCH).

LILIACEAE

1. *Astelia* Banks & Sol. ex R. Br.

Dioecious, perennial herbs. Leaves in several closely imbricate whorls, simple; stipules absent. Flowers actinomorphic, bracteate, solitary or few in racemose panicle terminal on axillary peduncle. Perianth-segments in two whorls of three, petaloid, shortly united at base. Male flower with six stamens inserted at base of perianth-segments, with aborted ovary. Female flowers with six staminodes; ovary superior, 3-celled, with numerous ovules in each cell; style with three small stigma-lobes. Fruit a berry; seeds numerous; endosperm fleshy, abundant.

1. ***A. pumila*** (Forst. f.) Banks & Sol. ex R. Br. 1810, *Prodr. Fl. Nov. Holl.*, **1**, p. 291.

Gaudichaud, 1825, p. 101; 1826, p. 132; D'Urville, 1825, p. 35; Hooker, 1847, p. 357; Melvill, 1903, p. 7; Wright, 1911, p. 329; Skottsberg, 1913, p. 19.

Melanthium pumilum Forst. f. 1789, *Comment. Gotting.*, Ser. 2, **9**, p. 30.

Forming compact carpets up to several square metres in area. Stems up to 5 cm., branched, with few long silky hairs and leaf-scars below, densely leafy distally, reddish brown. Leaves 10–23 × 3–7 mm., linear- to triangular-lanceolate, acute, entire, rigid, thick, fimbriate on margins and midrib beneath, dark shiny green on upper surface, paler and duller beneath, with imbricate somewhat sheathing base which is densely covered with long silvery white linear scales at base. Peduncle 10–16 mm., erect, axillary, simple or branched from about middle, with minute triangular or linear-triangular, silvery, scarious scales. Flowers 1–3, terminal, subtended by greenish silvery bract *c.* 5 × 1 mm.; perianth-segments 3–5 × 1·0–1·4 mm., ± oblong, obtuse, creamy white; stamens about equalling perianth-segments; staminodes *c.* half as long as perianth-segments, green; ovary *c.* 5 mm.; style slightly exceeding perianth-segments, shortly 3-lobed. Fruit *c.* 7 mm., ovoid to subglobose. $2n = 64$. Fl. XI–I. (Plate IId)

Wet areas, often dominant or co-dominant to form conspicuous patches ("soft camp"); common. 6–*c.* 700 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 47°S.), Chiloe, southern Chile (*c.* lat. 40°S.).

Typus. Tierra del Fuego, 20.xii.1774–3.i.1775. *J.R. & G. Forster* (BM!).

Specimens. **WF**: TC68 *Vallentin ii.–iii.1910* (K, MANCH); TC88 *Skottsberg**; TC99 *Vallentin ii.1911* (K); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Nichol* (BM), *Vallentin* (BM). **EF**: UC77 *Corner 351* (LTR); VC37 *Moore 505* (GH, K, LP, LTR, S), *Greene 84a* (K), *Booth 74* (LTR), *Davies BF3* (K); VC46 *Holdgate 625* (BIRM); VC47 *Hamilton JH25* (BIRM, BM), *Cunningham i.1868* (K), *Hill xi.1902* (K), *Skottsberg 30.iii.1902* (BM); s. loc. *Havers in 1860* (BM).

PHILESIACEAE

1. *Enargea* Banks & Sol. ex Gaertn.

Prostrate, suffruticose perennial. Leaves alternate, distichous, simple; stipules absent. Flowers actinomorphic, hermaphrodite, solitary (rarely 2–3), terminal on axillary bracteate peduncles. Perianth-segments in two whorls of three, free, petaloid. Stamens 6, inserted at base of perianth-segments. Ovary superior, 3-celled, with 8–10 ovules per cell; style short, filiform, with three very short stigmatic lobes. Fruit a berry; seeds few, with endosperm.

1. ***E. marginata*** Banks & Sol. ex Gaertn. 1788, *Fruct. Sem. Pl.*, **1**, p. 283. Almond Flower

Skottsberg, 1913, p. 20.

Luxuriaga marginata (Banks & Sol. ex Gaertn.) Benth. & Hook. 1883, *Gen. Pl.*, **3**(2), p. 768; Wright, 1911, p. 329.
Callixene marginata (Banks & Sol. ex Gaertn.) Lam. 1819, *Tabl. Encycl.*, **2**, p. 387; Gaudichaud, 1825, p. 101; 1826, p. 133; D'Urville, 1825, p. 35; Hooker, 1847, p. 354; Melvill, 1903, p. 7; Vallentin and Cotton, 1921, pl. 56.

Stems up to 2 m., *c.* 2–3 mm. in diameter, creeping, branched, woody, rooted at lower nodes, glabrous, white or reddish, bearing small, triangular, brown, scarious scales at nodes below terminal leafy part. Leaves 6–18 × 2·0–5·5 mm., oblong or elliptical to elliptic-lanceolate, acuminate, apiculate, cuneate at base, entire, rigid, glabrous, setulose-spinulose on margins, pale glossy green on upper surface, duller and paler beneath; petiole 1–2(–3) mm., glabrous. Peduncle *c.* 4 mm., glabrous, with 2–4 bracts clustered at base; bracts 2·5–3·5 × *c.* 1·0–1·8 mm., ovate, acute, brown or greenish brown, membranous. Flowers sweetly scented. Perianth-segments 10–16 × 5–9 mm., oblong to oblong-oblanceolate, obtuse, white; stamens *c.* 4 mm.; stigma borne slightly above level of anthers. Berry 7–9 mm. in diameter, globose, dark purple; seeds *c.* 2·5 mm., oblong-ovoid, slightly compressed. $2n = 20$. Self-compatible and perhaps self-pollinated. Fl. XII–II.

Empetrum heath, among *Bolax* cushions, rock crevices; common. 6–*c.* 700 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to *c.* lat. 50°50′S., Andean Patagonia (lat. 51–48°S.).

Typus. Tierra del Fuego: "in humidis umbrosis", i.1769. *Banks and Solander* (BM!).

Specimens. **WF**: TC32 *Moore 678* (BIRM, K, LTR, P, UC); TC68 *Vallentin viii.1910* (K), *29.xii.1909* (MANCH); TC79 *Moore 843* (CHR, K, LP, LTR); TC88 *Vallentin iii.1911* (MANCH); TC99 *Vallentin i.1911* (K); s. loc. *Snyder 27.i.1853* (CU), *R. Vallentin in 1901–02* (MANCH), *Nichol 44* (BM), *Vallentin* (BM). **EF**: UC58 *Bennett 26.i.1937* (BM); UC68 *Moore 672* (C, K, LTR, US); UC69 *Bennett 30.i.1937* (BM); UC76 *Corner 343* (LTR); VC27 *Sladen Fa6/50* (BM); VC28 *Lesson* (K), *Gaudichaud* (K); VC37 *Holdgate 644* (BIRM), *Davies BF42B* (K); VC46 *Killingbeck 94* (BIRM), *Moore 544* (GH, K, LP, LTR, S); VC47 *Greene 33* (K), *Hill xi.1902* (K), *Booth 47* (LTR); s. loc. *Hooker 22* (BM, K), *Darwin iii.1834* (CGE, K), *Abbott in 1860* (K), *Cunningham ii.1867* (K), *Ingram in 1938* (BM).

IRIDACEAE

1. *Sisyrinchium* L.

Glabrous, perennial, rhizomatous herbs. Leaves basal, or from lower, rarely upper, part of stem, sheathing at base, simple and grass-like. Flowers actinomorphic, hermaphrodite, (1–)2–8 on slender pedicels, each subtended by a spathe of 1–2 bracts, in terminal umbel on scape-like stalk. Perianth-segments in two whorls of three, united at base to form a short campanulate tube, petaloid. Stamens 3, inserted in throat of perianth-tube; filaments connate for basal one-third to half. Ovary inferior, 3-celled,

with numerous ovules in each cell; style 3-lobed; stigmas terminal on style-lobes. Fruit a loculicidal capsule, opening by three valves; seeds numerous.

Flowers white with green or purple veins, pendulous .. .. **1. *filifolium***
Flowers yellow with purple-brown veins, erect .. .. **2. *chilense***

1. *S. filifolium* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 101. Pale Maiden

D'Urville, 1825, p. 35; Gaudichaud, 1826, p. 133; Hooker, 1847, p. 352; Melvill, 1903, p. 7; Wright, 1911, p. 329; Skottsberg, 1913, p. 20; Vallentin and Cotton, 1921, pl. 55.

Leaves 6–32 cm., 1–2 mm. wide, filiform to linear, acute, rather rigid, sheathing at base. Scape 9–50 cm., usually exceeding leaves, terete or slightly flattened. Spathe 1·6–8·0×0·5–0·8 cm., linear or linear-lanceolate, long-acuminate, sheathing at base. Flowers (1–)2–8; pedicels 9–30 mm., very slender, exserted from spathe, nodding. Perianth-segments 11–18×6–12 mm., obovate, obtuse or emarginate, often apiculate, white with purplish or greenish veins, greenish at base. Capsule 7–9×5–6 mm., obovoid- to globose-trigonous, membranous-coriaceous; seeds *c.* 1·5–2·0 mm., ovoid, reticulate, pale reddish brown. $2n = 18$. Somewhat protandrous but self-compatible and probably normally self-pollinated. Fl. X–II.

Empetrum and *Blechnum* heath, often near streams with *Hierochloë magellanica*; abundant. 3–*c.* 230 m.

West Falkland, East Falkland. Endemic.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC06 *Snyder 1.xii.1852* (CU); TC31 *Moore 730* (C, GH, K, LP, LTR, P, S, US); TC50 *Moore 786* (LTR); TC58 *Vallentin 15.xii.1909* (MANCH); TC88 *Vallentin iv.1911* (K, MANCH); TC99 *Vallentin xii.1910* (MANCH); s. loc. *Vallentin in 1909–11* (BM, K), *Blake xi.1924* (MANCH), *R. Vallentin in 1901–02* (MANCH), *Holmested in 1884* (BM), *Nichol* (BM). **EF**: VC28 *McCormick 7.xii.1842* (BM); VC37 *Moore 497* (K, LTR), *Killingbeck 102* (BIRM); VC46 *Hamilton JH19* (BM), *Holdgate 626* (BIRM), *Killingbeck 97* (BIRM); VC47 *Hill xi.1902* (K), *Booth 12* (LTR), *Davies* (K), *Cunningham 23.i.1868* (K), *Greene 30* (BIRM, K), *Smith 2* (BM), *Hooker 98* (K), *Bennett 5* (BM); s. loc. *Abbott in 1860* (K), *Hooker* (BM, K), *Lechler 105* (K).

2. *S. chilense* Hook. 1827, *Curtis's bot. Mag.*, **54**, pl. 2786.

Moore and Sladen, 1965, p. 30.

Leaves 1·6–10·0 cm., *c.* 1–2 mm. wide, linear, acuminate, rather rigid, sheathing at base. Scape 4·5–13·0 cm., usually somewhat exceeding leaves, rather flattened and slightly winged. Peduncle up to 5 mm. Spathe 1·5–3·0×0·4–0·6 cm., linear-lanceolate, long-acuminate, sheathing in lower half. Flowers 1–2; pedicels 5–20 mm., very slender, enclosed in spathe or slightly exserted, erect or sometimes slightly nodding distally. Perianth-segments 6·0–8·5×1·5–2·2 mm., oblanceolate to oblong-oblanceolate, obtuse and with mucro *c.* 1 mm., yellow with brownish veins. Capsule 3–4×3·0–4·5 mm., obovoid- to subglobose-trigonous, membranous-coriaceous; seeds *c.* 1 mm., ovoid, reticulate, black. Fl. XII–II(–V?).

Empetrum heath, *Cortaderia* grassland; rare. *c.* 10 m.

West Falkland. Fuegia, Islas Guaitecas (*c.* lat. 43°55'S.), Andean Patagonia, north along the Andes and in Chile to *c.* lat. 33°S.

Typus. Chile: Valparaiso; in 1826, seeds collected by Cruickshank and cultivated at Hort. Bot. Glasgow.

Specimens. **WF**: TC83 *Sladen JB121/15* (BM); TC86 *Hamilton 19.xii.1949* (BM), *Sladen Fa80/49* (BM); TC87 *Hamilton JH66* (BM).

JUNCACEAE

1. *Juncus* L.

Glabrous, perennial, rarely annual herbs, tufted or with creeping rhizomes. Leaves alternate, with open basal sheath bearing auricles; lamina long and grass-like, terete or channelled, often with internal septa, sometimes rudimentary. Inflorescence a cluster of terminal or apparently lateral cymes, subtended by two bracts. Flowers actinomorphic, hermaphrodite, protogynous, few to many, rarely solitary, often subtended by bracteoles. Perianth-segments in two whorls of three, greenish or brownish. Stamens 3 or 6, free. Ovary superior, 1- or 3-celled; ovules many; style 1, with three filiform stigmas. Fruit a loculicidal capsule; seeds many, sometimes with appendage; endosperm present.

Plant tufted; stems 30 cm. or more; leaves reduced to basal sheath; inflorescence apparently lateral .. .. **2. *effusus***

Plant rhizomatous; stems up to 20 cm.; leaves terete or slightly channelled, septate; inflorescence apparently terminal .. .. **1. *scheuzerioides***

1. *J. scheuzerioides* Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 100. "Native Rush"

D'Urville, 1825, p. 34; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 358; Buchenau, 1906, p. 171; Wright, 1911, p. 330; Skottsberg, 1913, p. 19; Vallentin and Cotton, 1921, pl. 58; Barros, 1953, p. 411.

J. inconspicuus D'Urv. 1825, *Fl. Is. Mal.*, p. 34; Gaudichaud, 1826, p. 132; Buchenau, 1906, p. 169; Barros, 1953, p. 411.

Perennial; rhizome long-spreading, 1–3 mm. in diameter, branched, purplish, bearing tufts of leaves. Stems (1–)2–18(–20) cm. when flowering, ascending or erect, simple or branched, leafy, often with scales towards base. Leaves 1·5–14·0 cm., usually exceeding flowering stems; lamina linear, terete or rather compressed, with obvious septa, somewhat flattened and acute at apex, often shallowly channelled near base; lamina of basal leaves short or absent; sheath conspicuous, produced above into semicircular or oblong, obtuse, scarious auricles which are usually wider than long. Inflorescence (1–)2- to 6(–7)-flowered, the outer bract 6–17 × 1–2 mm., narrowly ovate-acicular, equalling to 1·5 times as long as inflorescence. Flowers subsessile or on pedicels up to 2 mm.; bracteoles, if present, 1–2, 2–3 × 1·5–2·0 mm., ovate, acute, membranous. Perianth-segments 3–5 × 1·0–1·5 mm., ovate-lanceolate, acuminate, the outer somewhat keeled, reddish brown, greenish on midvein, with narrow, white, hyaline margins in basal two-thirds; stamens 6, the anthers ± as long as filaments. Capsule 3–4 × 1·3–1·8 mm., equalling or slightly exceeding perianth, cylindrical-ovoid, trigonous, narrowing to obtuse or subacute stylar beak, dark shiny brown; seeds *c.* 0·7 × 0·5 mm., oblong-obovoid, somewhat trigonous, pale brown, with small appendage. $2n = 40$. Self-compatible, probably self-pollinated. Fl. X–XII. (Fig. 18c)

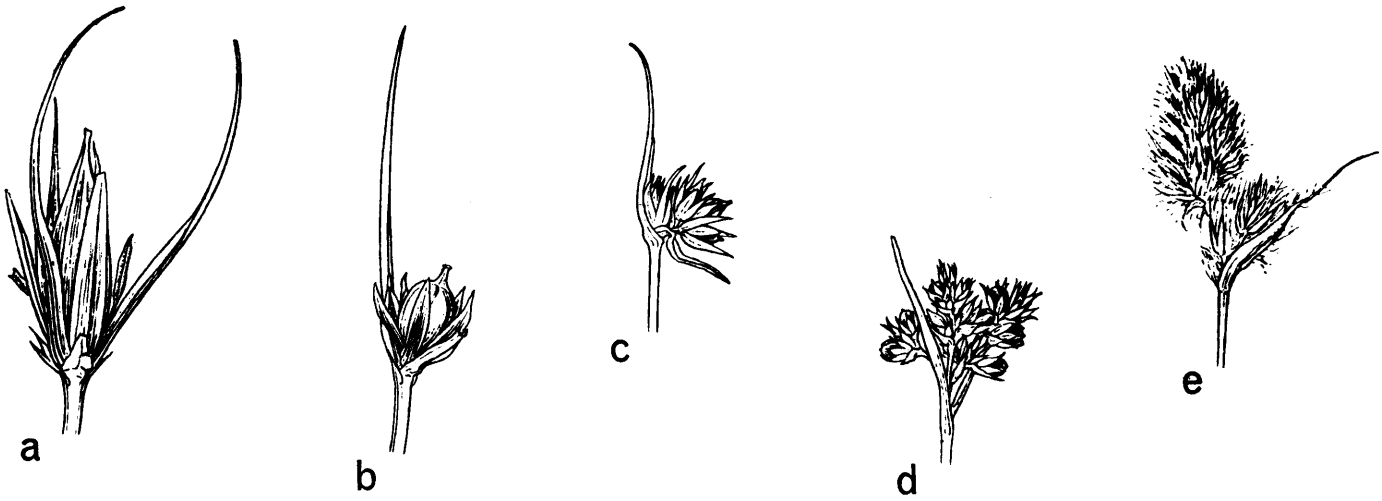


FIGURE 18

Fruiting inflorescences of Juncaceae.

a. *Marsippospermum grandiflorum.* b. *Rostkovia magellanica.*
c. *Juncus scheuzerioides.* d. *Luzula campestris.*
e. *Luzula alopecurus.*

All × $\frac{3}{2}$.

Damper parts of most communities, but most frequent on moist sand; abundant. 0–*c.* 360 m., perhaps higher.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 45°53′S., north along the Andes to *c.* lat. 33°S., east Patagonia (*c.* lat. 47°30′S.), South Georgia, Macquarie Island.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Small plants with the inflorescence reduced to a solitary flower have been referred to var. *inconspicuus* (D'Urv.) Hook. f., but these seem to be no more than depauperate specimens.

Specimens. **WF**: TC68 *Vallentin in 1909–11* (K); TC69 *Vallentin 14.ii.1910* (K, MANCH); TC79 *Moore 821* (K, LP, LTR, S); TC88 *Moore 871* (C, GH, LTR), *Sladen Fa93/49* (BM); TC99 *Vallentin i.1911* (K, MANCH), *iii.1911* (K); s. loc. *Vallentin 82* (K), *Nichol 46* (BM), *Hamilton JH68* (BM). **EF**: UC14 *Cunningham 29.i.1868* (K); VC09 *Sladen Fa33/49* (BM); VC28 *Sladen JB111/14* (BM), *Gaudichaud* (K); VC37 *Moore 501* (LTR); VC47 *Davies AF35–37* (K), *Booth 40* (LTR), *Greene 51* (BIRM, K), *Hill xi.1902* (K); s. loc. *Hooker 96* (K), *Havers in 1860* (BM).

2. *J. effusus L. 1753, *Sp. Pl.*, p. 326. Soft Rush

Skottsberg, 1913, p. 19; Moore and Sladen, 1965, p. 34.

J. pallidus auct., non R. Br.; Wright, 1911, p. 330.

Densely tufted perennial. Stems 30–70 cm., terete, rigid, erect, glossy and smooth, with continuous pith. Leaves reduced to reddish brown sheaths 1·5–7·0 cm., with subtruncate or emarginate apex which may have terminal, filamentous, rudimentary lamina. Inflorescence apparently lateral, placed about one-fifth to one-quarter of total length from top of stem, with flowers in several lax clusters, having ascending to deflexed branches; pedicels 2–5 mm., slender; bracteoles *c.* 1·5–2·0 mm., ovate, acuminate, membranous, at base of pedicels and two subtending each flower. Perianth-segments 2·5–3·5 × *c.* 0·7 mm., lanceolate, acuminate, the outer usually somewhat longer than the inner, rather soft, pale greenish brown with pale brownish membranous margins; stamens 3, the anthers shorter than filaments. Capsule 2·0–2·5 × *c.* 1·5 mm., about equalling perianth, obovoid, retuse, yellowish brown; seeds 0·5 × *c.* 0·2 mm., ellipsoid, pale brown, with small appendage.

Moderately wet places, usually near settlements; rare.

West Falkland, East Falkland. Introduced; native of North Temperate Zone but widely distributed in temperate parts of the Southern Hemisphere.

Specimens. **WF**: TC68 *Vallentin 66* (K). **EF**: VC47 *Moore 1239* (GH, K, LP, LTR, S).

J. bufonius L. 1753, *Sp. Pl.*, p. 328, Toad Rush, a cosmopolitan species especially prevalent in the North and South Temperate Zones, was reported near Port Stanley by Birger (1907, p. 278). It is a tufted annual with slender, erect to prostrate stems 3–20 cm. and several setaceous, deeply channelled, non-septate basal leaves. The flowers are borne singly on the branches of a much-branched panicle forming the upper one-third to half or more of the plant; the capsule is shorter than the perianth. The species may occur on disturbed ground near settlements.

2. *Rostkovia* Desv.

Caespitose, often rhizomatous, glabrous, perennial herbs. Leaves alternate, sheathing at base; lamina long and grass-like, channelled, without internal septa. Flowers actinomorphic, hermaphrodite, solitary and terminal on scape-like stem, subtended by two bracts, the lower bract much exceeding perianth. Perianth-segments in two whorls of three, free. Stamens 6, inserted on perianth-segments. Ovary superior, 1-celled; ovules many; style 1, elongated, with three filiform stigmas. Fruit a loculicidal capsule; seeds many, with endosperm.

1. *R. magellanica* (Lam.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 1, p. 81.

Hooker, 1847, p. 358; Buchenau, 1906, p. 40; Skottsberg, 1913, p. 19; Vallentin and Cotton, 1921, pl. 57, figs. 2–5; Barros, 1953, p. 312.

Juncus magellanicus Lam. 1789, *Encycl. Méth. Bot.*, **3**, p. 266; Gaudichaud, 1825, p. 100; 1826, p. 132; D'Urville, 1825, p. 33.

Rhizome, if present, *c.* 2 mm. in diameter, bearing clusters of stems. Flowering stems 7–16(–25) cm., *c.* 0·8 mm. in diameter, erect, branched near base, ± terete, faintly striate. Leaves 6–30(–35) cm., *c.* 1 mm. wide, usually exceeding flowering stems; lamina linear, acute, channelled, ± erect, green or brownish green, rudimentary in outermost leaves; sheath yellowish brown, with obtuse auricles about as long as wide. Lower bract 18–40 mm., ovate-lanceolate near base, subulate above; upper bract about equalling perianth. Perianth-segments 7·0–8·5 × 1·2–2·0 mm., oblong to oblong-lanceolate, acute or acuminate, coriaceous, reddish brown, with paler scarious margins, shiny, persistent; anthers longer than filaments; stigmas held above anthers and exserted from perianth. Capsule 6–10 × 4·5–7·0 mm., equalling or slightly exceeding perianth, cylindrical- to ovoid-globose, abruptly narrowing to short beak, blackish to reddish

brown, shiny, usually indehiscent; seeds 1·5–1·7 × *c.* 0·9 mm., ellipsoid-ovoid, with short acute appendage, yellowish brown, shiny. Fl. X–XI. (Fig. 18b)

Wet depressions, especially in *Cortaderia* associations, and often locally dominant; common. 3–*c.* 450 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia (north to *c.* lat. 48°S.), west Patagonia north to *c.* lat. 46°40′S., South Georgia, Campbell Island, Auckland Islands, New Zealand (South Island).

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

When flowering only likely to be confused with *Marsippospermum*, which differs in the single laminate leaf per stem, and in the short bracts which do not exceed the perianth. When vegetative, *Rostkovia* is distinguished from both *Marsippospermum* and similar *Juncus* species by its conspicuously channelled leaves.

Specimens. **WF**: TC32 *Moore 713* (BIRM, C, GH, K, LP, LTR, S); TC68 *Vallentin v.1910* (K, MANCH); TC78 *Vallentin ix.–x.1910* (K); TC88 *Moore 870* (CHR, K, LP, LTR, P, UC, US); TC99 *Vallentin i.1911* (K); s. loc. *Vallentin* (MANCH). **EF**: UC76 *Corner 345* (LTR); VC37 *Davies AF39* (K), *Lechler 111* (K), *Booth 34* (LTR); VC46 *Holdgate 627* (BIRM); VC47 *Hill xi.1902* (K), *Davies 4.i.1938* (K), *Davies AF38* (K), *Cunningham i.1868* (K), *Bossière iii.1901* (P), *Greene 27* (BIRM), *Smith 38* (BM), *Bennett 9.xii.1917* (BM); s. loc. *Weir iv.1937* (K), *Wright* (K), *Hamilton JH76* (BM), *Hooker* (K).

3. *Marsippospermum* Desv.

Similar to *Rostkovia* but with all except one leaf per stem reduced to basal sheath; lamina terete and stem-like; bracts usually three, shorter than perianth; capsule much longer than wide and partially 3-celled.

1. ***M. grandiflorum*** (L. f.) Hook. 1843, *Icon. Pl.*, **6**, pl. 533.

Buchenau, 1906, p. 38; Skottsberg, 1913, p. 19; Barros, 1953, p. 308.

Rostkovia grandiflora (L. f.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 1, p. 82; Hooker, 1847, p. 367; Melvill, 1903, p. 7; Wright, 1911, p. 330; Vallentin and Cotton, 1921, pl. 57, fig. 1.

Juncus grandiflorus L. f. 1781, *Suppl.*, p. 209; Gaudichaud, 1825, p. 100; 1826, p. 132; D'Urville, 1825, p. 34.

Rhizome *c.* 2–5 mm. in diameter, creeping, often branched, bearing clusters of stems at intervals. Flowering stems 16–30 cm., rarely more, *c.* 1·0–1·2 mm. in diameter, erect, terete, faintly striate. Leaf solitary, 13–45 cm., shorter than to exceeding flowering stems; lamina terete, stem-like, acute, shallowly channelled near base; sheath pale greenish, with brownish obtuse auricles about as long as wide; remaining leaves with pale greenish to reddish brown sheath and short, filiform, rudimentary lamina. Flower conspicuous; subtending bracts (2–)3(–4), 2–5 × 2–3 mm., ovate, acute to obtuse, reddish brown, scarious, much shorter than perianth. Perianth-segments 16–36 × 2·0–2·5 mm., the outer whorl longer than the inner, linear-lanceolate, long-acuminate, reddish brown, rather shiny, persistent; anthers much longer than filament; stigmas held above anthers, included within perianth. Capsule 15–20 × 4–5 mm., shorter than outer perianth segments, cylindrical-ovoid, subtrigonous, gradually tapering to short beak, dark reddish brown, shiny, dehiscing by three valves; seeds *c.* 3·5 × 1·0 mm., fusiform, acute at ends, pale yellowish, rather shiny, with loose testa. $2n = c.$ 50. Fl. X–XI. (Fig. 18a)

Dwarf shrub heath, *Bolax* and *Blechnum* associations; abundant.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 47°S.), Andean Patagonia, north along the Andes to *c.* lat. 37°S.

Typus. Tierra del Fuego, 20.xii.1774–3.i.1775. *J. R. & G. Forster.*

Specimens. **WF**: TC32 *Moore 766* (K, LP, LTR, S); TC68 *Vallentin x.1910* (K, MANCH); TC79 *Moore 852* (C, K, LTR); TC88 *Vallentin ii.1911* (K, MANCH); TC99 *Vallentin xii.1910* (K), *ii.1911* (MANCH); s. loc. *Blake in 1925–26* (MANCH), *R. Vallentin in 1901–02* (MANCH). **EF**: VC27 *Sladen Fa61/49* (BIRM, BM); VC37 *Booth 33* (LTR), *Holdgate 637* (BIRM), *Davies AF29* (K), *Smith 39* (BM); VC47 *Cunningham i.1868* (K), *Greene 26* (K); s. loc. *Wright* (K), *Hooker 94* (K), *Havers in 1860* (BM).

4. *Luzula* DC.

Caespitose, sometimes stoloniferous, perennial herbs, grass-like. Leaves basal, sometimes with alternate cauline leaves, with closed sheathing base lacking auricles; lamina flat or channelled, with long marginal hairs. Flowers actinomorphic, hermaphrodite, subtended by bracteoles, in few- to many-flowered cymes which are subtended by 1–4 bracts, sometimes condensed into a head. Perianth-segments in two whorls of three. Stamens 6, free. Ovary superior, 1-celled, with three ovules; style 1, long to very short, with three

filiform stigmas. Fruit a loculicidal capsule, dehiscing to base by three valves; seeds 3, usually with conspicuous appendage (aril), with endosperm.

Leaves acuminate; inflorescence a compact panicle, sometimes with smaller clusters below, conspicuously white-villous; bracteoles conspicuously ciliate .. .. **1. *alopecurus***

Leaves obtuse, often with small apical swelling; inflorescence of several stalked clusters, not villous; bracteoles not conspicuously ciliate .. .. **2. *campestris***

1. *L. alopecurus* Desv. 1808, *J. Bot. Rédigé*, **1**, p. 159. Native Woodrush

Gaudichaud, 1825, p. 100; 1826, p. 132; D'Urville, 1825, p. 34; Hooker, 1847, p. 358; Buchenau, 1906, p. 77; Wright, 1911, p. 330; Skottsberg, 1913, p. 19; Barros, 1953, p. 338.

Root-stock short, erect or suberect, densely clothed with leaves and leaf-bases. Leaves 5·5–20(–25) cm., 2–6 mm. wide, acuminate, with dense white marginal hairs; cauline leaves normally 1–2, 3–5 cm. Flowering stems (5–)10–30(–35) cm., usually exceeding leaves, terete, glabrous. Inflorescence 15–24 mm., ovoid to oblong, compact, terminal, sometimes with smaller cluster below, subtended by 1–4 bracts; lower bracts 1·2–3·0×*c.* 0·2 cm., equalling or exceeding inflorescence, leaf-like, the upper smaller, membranous and laciniate; bracteoles 3–6×0·3–1·3 mm., ovate-oblong to linear-lanceolate, long-acuminate, deeply laciniate, ciliate, whitish membranous. Outer perianth-segments 4–5×0·5 mm., linear-lanceolate, fimbriociliate, dark reddish brown, with pale scarious margins, the inner similar but two-thirds to three-quarters as long; anthers equalling to *c.* half as long as filament; style very short. Capsule *c.* 2·0×1·1 mm., ovoid-trigonous, usually shorter than perianth, reddish to dark brown, glabrous, shiny; seeds *c.* 1·5×0·5 mm., cylindrical, with pale, low, wing-like aril, dark brown, yellowish at base, with short, white coma. $2n = 24$. Self-compatible and probably usually self-pollinated. Fl. X–XII. (Fig. 18e)

Rocky places, coastal cliffs and slopes, among *Bolax* and *Empetrum*; common. 0–705 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 50°S.

Typus. "ad Fretum Magellanicum", xii.1767–i.1768. *Commerson* (P).

Specimens. **WF**: TC32 *Moore 682* (K, LTR, US); TC41 *Moore 689* (BIRM, K, LP, LTR, P, S, UC); TD40 *Moore 905* (LTR); TC68 *Vallentin xii.1910* (K, MANCH); TC79 *Moore 850* (C, GH, K, LTR, US); TC99 *Vallentin i.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH), *Nichol 63* (BM). **EF**: UC14 *Cunningham 29.i.1868* (K); UC65 *Corner 394* (LTR); UC77 *Corner 348* (LTR); VC09 *Sladen Fa22/49* (BM); VC28 *Lesson* (K), *Gaudichaud* (K); VC37 *Moore 514* (CHR, GH, LP, LTR, S), *Cunningham i.1868* (K); VC46 *Killingbeck 96* (BIRM), *Holdgate 629* (BIRM); VC47 *Gibbs 16.i.1940* (K), *Hamilton JH6, JH11* (BM), *Booth 37* (LTR), *Cunningham i.1868* (K), *Bennett 9.xii.1917* (BM, K), *Skottsberg 90* (K), *Skottsberg 31.xii.1901* (BM), *Greene 35* (BIRM, K), *Smith 27* (BM), *Hill xi.1902* (K), *Darwin iii.1833* (CGE, K); s. loc. *Wright* (K), *Middleton in 1923* (K), *Hooker 97* (K), *Weir iv.1937* (K), *Proges in 1920* (BM).

2. *L. campestris (L.) DC. 1805, in Lam. & DC., *Fl. Fr.*, Ed. 3, **3**, p. 161. Field Woodrush

Moore and Sladen, 1965, p. 33.

Root-stock short, erect, densely clothed with leaves and leaf-bases, sometimes with short stolons. Leaves 1·5–10·0 cm., 2–4 mm. wide, obtuse and usually somewhat swollen at apex, sparsely to rather densely ciliate, especially towards base; cauline leaves 2–4, 1·5–9·0 cm. Flowering-stems 2–15(–25) cm., exceeding leaves, terete, glabrous. Inflorescence 8–18 mm., a loose, conical to somewhat umbellate, often drooping panicle, with one sessile and 3–6 lateral, stipitate, 3- to 12-flowered clusters, subtended by 2(–3) bracts; bracts 7–20×*c.* 1 mm., shorter than to somewhat exceeding inflorescence, leaf-like; bracteoles 1·5–3·0×*c.* 1·5 mm., ovate, acute, sparsely laciniate especially towards base, whitish membranous. Perianth-segments 3–4×0·8–1·0 mm., ovate, lanceolate, long-apiculate, reddish brown, with pale scarious margins, subequal or the inner somewhat shorter; anthers 2–6 times as long as filaments; style long and filiform. Capsule 2·0–2·8×1·2–1·5 mm., cylindrical to obovoid, trigonous, dark reddish brown, glabrous, shiny; seeds 1·2–1·5×*c.* 0·8–1·0 mm., cylindrical-globose, with small apical wing, dark reddish brown, with yellowish wing-like basal aril up to half the total length. Fl. X–XI. (Fig. 18d)

Grazing paddocks and improved grassland, especially near settlements; occasional.

West Falkland, East Falkland. Introduced.

Although this species has a cosmopolitan native distribution, the Falkland Islands plants belong to the Eurasian ssp. *vulgaris* (Gaudin) Buch., which is undoubtedly introduced, perhaps with grass seed.

Specimens. **WF**: TC32 *Moore 803* (GH, K, LP, LTR, S). **EF**: UC65 *Corner 347* (LTR); VC37 *Booth 35* (LTR); VC47 *Booth 73* (LTR), *Hamilton JH5, JH12* (BM).

CENTROLEPIDACEAE

1. *Gaimardia* Gaudich.

Moss-like perennial herbs, densely tufted and forming cushions. Leaves closely distichous, glabrous, with wide membranous basal sheath having apical ligule. Flower solitary, terminal, hermaphrodite, enclosed by two bracts, rarely a lower sterile flower also present. Perianth absent. Stamens 2, alternating with carpels. Carpels 2, collaterally connate, with one ovule; styles 2, united at base, the curled stigmatic apex papillose and receptive beneath. Fruiting carpels 2-celled, dehiscing loculicidally by two valves; seed 1, minute.

1. ***G. australis*** Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 100.

D'Urville, 1825, p. 35; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 360; Melvill, 1903, p. 7; Wright, 1911, p. 330; Skottsberg, 1913, p. 18.

Stems 2–9 cm., erect or suberect, branched, densely clothed in imbricate leaves which are green only towards apices of stems. Leaves 4–9 × *c.* 0·5 mm.; lamina linear-subulate, acute or obtuse, strict, channelled on upper surface; sheath *c.* half total length, with obtuse ligule *c.* 0·5–1·0 mm. Flowers usually enclosed by upper leaves. Outer bract *c.* 4·0 × 1·5 mm., ovate, apiculate, green, with wide, pale, membranous margin, the upper bract about three-quarters as long, narrower and less apiculate; anthers exserted, purple or yellow, held above the reddish purple stigmas, protogynous. Fruit *c.* 4·5 × 0·9 mm., cylindrical to cylindrical-subfusiform, compressed, emarginate, golden-brown, dark purplish brown at apex, shiny. $2n = 16$. Fl. XII–I.

Damp areas, especially peat bogs; common. 0–705 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 49°10′S., Chiloe (lat. 42°15′S.).

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P, isotype K!).

Specimens. **WF**: TC88 *Moore 15.ii.1964*†. **EF**: UC77 *Moore i.1964*†; VC28 *Gaudichaud* (K), *Lesson* (K); VC29 *Davies 1.i.1938* (K); VC36 *Booth 19* (LTR); VC37 *Greene 84* (BIRM, K), *Holdgate 650* (BIRM), *Moore 504* (C, GH, K, LP, LTR, S); s. loc. *Hooker 8* (K).

GRAMINEAE

Stems usually branched at base, of two sorts in perennials—flowering stems (culms) and sterile or vegetative shoots; in annuals all the stems bear flowers. Culms terete or compressed, solid at the nodes and usually hollow in the internodes. Leaves solitary at nodes, comprising: sheath, encircling the stem with margins overlapping or sometimes connate; ligule, a small flap of tissue or a ring of hairs at the junction of sheath and lamina; lamina, usually long and narrow, grading into the sheath, sometimes with thickened projection (auricle) at base. Inflorescence a panicle, raceme or spike, composed of 1–many spikelets; spikelet comprising 1–many distichous, ± imbricate, sessile florets on a slender axis (rhachilla), usually with two bracts (glumes) at base. Florets hermaphrodite or unisexual, with or without two small delicate scales (lodicules) at base, enclosed between two bracts of which the lower (lemma) is coriaceous to membranous and the upper (palea) is usually thin and delicate but sometimes absent; stamens (1–)3; ovary superior, 1-celled, with one ovule; styles usually 2, normally with plumose stigmas. (Fig. 19)

Tribe FESTUCEAE (POEAE)

1. *Poa* L.

Sometimes dioecious, perennial herbs, often forming conspicuous dense tufts; leaf-sheaths without auricles. Inflorescence a lax or spike-like, compound panicle. Spikelets 2- to 7-flowered, compressed. Glumes shorter than spikelet, ± membranous, keeled, the lower 1- to 3-nerved, the upper 3-nerved, awnless. Lemma keeled, 5-nerved, awnless or with short, terminal awn, usually hyaline at tip. Palea

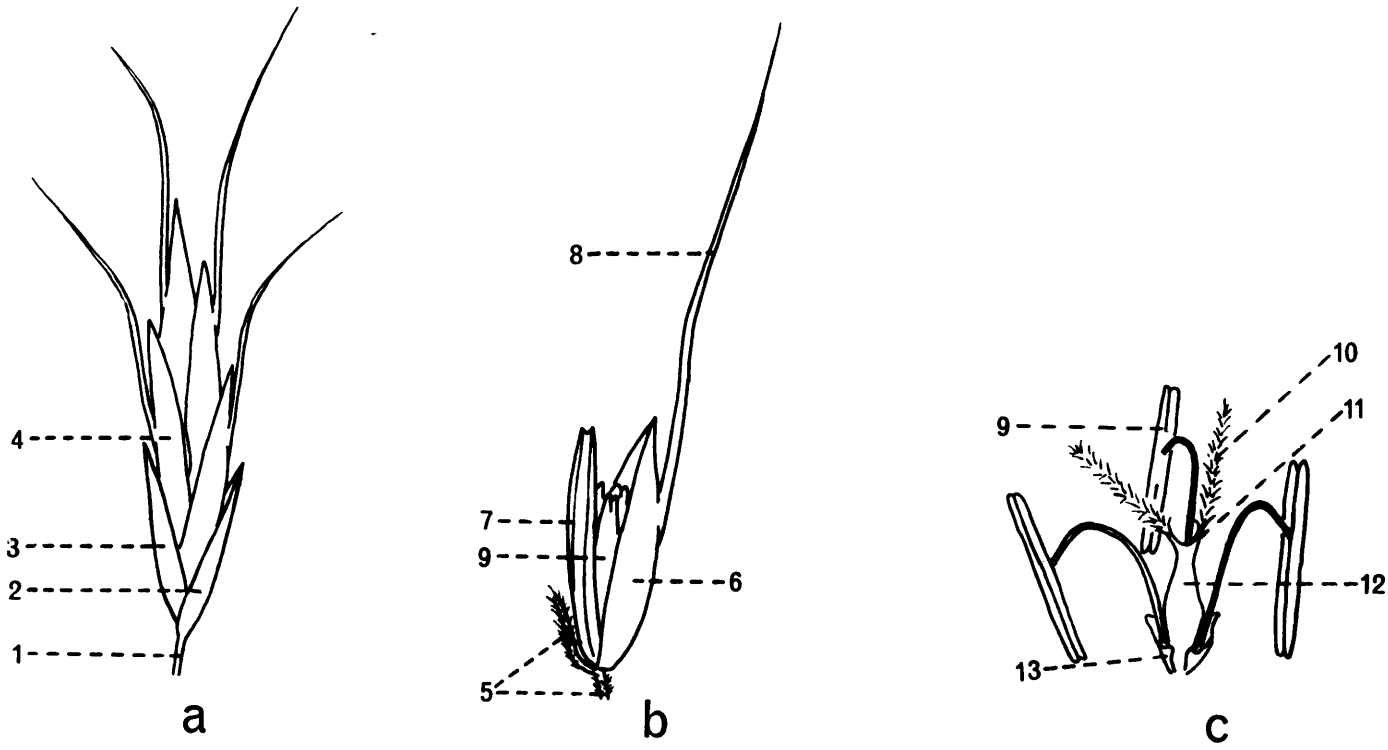


FIGURE 19

Structure of a grass spikelet.

a. Spikelet. b. Floret.

c. Floret with palea and lemma removed.

1. pedicel; 2. outer glume; 3. inner glume; 4. floret; 5. rhachilla; 6. palea; 7. lemma; 8. awn; 9. anther; 10. stigma; 11. style; 12. ovary; 13. lodicule.

2-nerved, bifid, shorter than to subequalling lemma. Lodicules ovate, 2-lobed, somewhat swollen below. Stamens 3; anthers 2–5 times as long as wide. Ovary glabrous; styles short, terminal.

1. Spikelets more than 6 mm.; panicle always spike-like 2
   Spikelets up to 6 mm.; panicle usually lax 4
2. Leaves usually conspicuously distichous, pungent, rigid; ligule less than 1 mm., obtuse **3. *robusta***
   Leaves not conspicuously distichous, not pungent or, if so, conspicuously glaucous and ligule acute; ligule 4 mm. or more 3
3. Plant dioecious, never with large stool; leaves glaucous, up to 5(–8) mm. wide; ligule acute, somewhat keeled and usually scabrid on keel; lemma awnless .. .. **2. *alopecurus***
   Plant hermaphrodite, often with stems aggregated into conspicuous stool; leaves green, 5–15 mm. wide; ligule obtuse, usually torn, not keeled or scabrid; lemma with short terminal awn .. .. **1. *flabellata***
4. Plant with distinctly creeping rhizome; lowest panicle-branches arising (2–)3–5 together at node .. .. **5. *pratensis***
   Plant tufted, without rhizome; lowest panicle-branches arising 1–2 together at node **4. *annua***

1. *P. flabellata* (Lam.) Hook. f. 1877, *Phil. Trans. R. Soc.*, **168**, p. 22. Tussac

Wright, 1911, p. 335; Skottsberg, 1913, p. 14.

Dactylis caespitosa Forst. f. 1789, *Comment. Gotting.*, Ser. 2, **9**, p. 22; Hooker, 1847, p. 38.

Festuca flabellata Lam. 1788, *Encycl. Méth. Bot.*, **2**, p. 462; Gaudichaud, 1825, p. 100; 1826, p. 132, 409; D'Urville, 1825, p. 32.

Poa caespitosa auct., non Poir.; Melvill, 1903, p. 8; Birger, 1907, p. 293.

Perennial, forming dense tufts up to 2·5 m.; stems aggregating to form stool up to 70(–100) cm. high, up to 100 cm. or more in diameter and crowned by the somewhat spreading leaves. Leaves 30–70 cm., 5–15 mm. wide; lamina linear, acute, narrowly channelled and scabrid on upper surface; sheath somewhat keeled, smooth; ligule *c.* 5 mm., obtuse, usually torn, membranous. Culms (30–)50–150 cm., 2–3 mm. in diameter, erect, rather compressed, glabrous. Panicle 8–21 × 1–4 cm., spike-like, dense, cylindrical or ovoid-cylindrical, yellowish green. Spikelets 7–9 mm., 3- to 4-flowered. Glumes unequal, the upper slightly the longer, *c.* two-thirds as long as spikelet, ovate-lanceolate, acute to acuminate, ciliolate on margins and keel, with hyaline margins, the lower 1-nerved. Lemma 5·0–6·5 mm., ovate-lanceolate, acuminate or subobtuse, with short, terminal, scabrid awn, keeled, scabrid on nerves, with ciliolate scarious margins; palea almost equalling to two-thirds as long as lemma, ciliolate, scabrid on nerves. Anthers *c.* 2·8–4·0 mm., 6–7 times as long as wide. Fl. IX–XI(–XII). (Plate Ia)

Coastal areas particularly on rock and shingle; locally common, forming dense stands when ungrazed. 0–*c.* 90 m.

West Falkland, East Falkland. Fuegia, north side of Straits of Magellan (lat. 52°15′–52°52′S.), South Georgia.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

When lacking its conspicuous stool, which is developed in mature stands, this species is likely to be confused with *P. alopecurus* which, however, is distinguished by its acute ligule, glaucous leaves, and dioecism.

Specimens. **WF**: TC06 *Skottsberg**; TC41 *Moore*†; TD40 *Vallentin 31.x.1909* (K, MANCH), *Skottsberg**; TC50 *Moore*†; TC58 *Skottsberg**; TC61 *Skottsberg**; TC65 *Skottsberg**; TC69 *Vallentin ii.1910* (K, MANCH); TC99 *Vallentin 12.x.1910* (K); s. loc. *Vallentin x.1910* (K), *R. Vallentin in 1901–02* (MANCH). **EF**: UC74 *Bossière iv.1901* (P); UC83 *Skottsberg**; UD80 *Davies AF1* (K); VC28 *Gaudichaud* (K); VC47 *Greene 39* (K), *Davies 5.ii.1938* (K), *Booth 38* (LTR), *Skottsberg**; VC48 *Holdgate 607* (BIRM); s. loc. *Abbott in 1860* (K), *Weir iv.1937* (K), *Hooker 104, 145* (K).

2. *P. alopecurus* (Gaudich.) Kunth 1829, *Rev. Gramin.*, **1**, p. 116. Mountain Blue Grass

Skottsberg, 1913, p. 14; Hauman and Parodi, 1929, p. 341.

Festuca arundo Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 381; Wright, 1911, p. 335.
F. antarctica (D'Urv.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt, 2, p. 382; Wright, 1911, p. 335.
Poa flabellata var. *antarctica* (D'Urv.) Raspail 1829, *Ann. Sc. Observ.*, **2**, p. 87.
P. antarctica (D'Urv.) St.-Yves, non (Hook. f.) Stapf; Skottsberg, 1913, p. 14.
Arundo antarctica D'Urv. 1825, *Fl. Is. Mal.*, p. 32; Gaudichaud, 1826, p. 132.
Festuca arenaria Lam. 1791, *Tabl. Encycl.*, **1**, p. 191, *pro parte.*
Arundo alopecurus Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 100; D'Urville, 1825, p. 32; Gaudichaud, 1826, p. 132.

Usually densely caespitose, erect, dioecious perennial. Leaves (4–)5–25(–30) cm., *c.* 1–5 mm. wide; lamina acute, flat, with involute margins, or folded or strongly involute, smooth to somewhat scabridulous on upper surface and margins, glabrous, usually rigid and somewhat pungent, usually glaucous; sheath somewhat keeled, smooth, glabrous, yellowish brown, often purplish; ligule 3–7 mm., triangular, acute, somewhat folded and scabridulous on midline, membranous. Culms (5–)10–75 cm., up to 2 mm. in diameter, erect, terete, glabrous. Panicle 3–15 × 1·0–1·8(–4·0) cm., cylindrical to obovoid, or linear-oblong to oblong-lanceolate, the male usually smaller than the female, yellowish brown, usually tinged with pale purple and green. Spikelets 7–11 mm., 2- to 5-flowered, the smaller, fewer flowered ones usually male; florets of female plants with basal tuft of white cottony hairs up to *c.* half as long as glume; hairs absent or usually much shorter in male plants. Glumes unequal, the upper slightly the longer, *c.* three-fifths to two-thirds as long as spikelet, ovate-lanceolate to lanceolate, acuminate, somewhat curved, usually strigose on keel, especially distally, with hyaline margins, the lower 1(–3)-nerved. Lemma 5–8 mm., oblong- to ovate-lanceolate, acute, usually strigose on keel, especially distally, with scarious margins, awnless; palea subequalling to *c.* five-eighths as long as lemma, scabrid on nerves. Anthers 1·8–2·2 mm., *c.* five times as long as wide. $2n = 28$. Fl. XI–I(–II). (Fig. 20c)

In most communities except with *P. flabellata* and not common where *Cortaderia* is dominant, most common in rocky parts of dwarf shrub heath, often with *Bolax* and locally sub- or co-dominant at higher elevations. 0–705 m.

West Falkland, East Falkland. Fuegia, southern Andean Patagonia near Straits of Magellan.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

A rather polymorphic species. In addition to the differences between male and female plants referred to

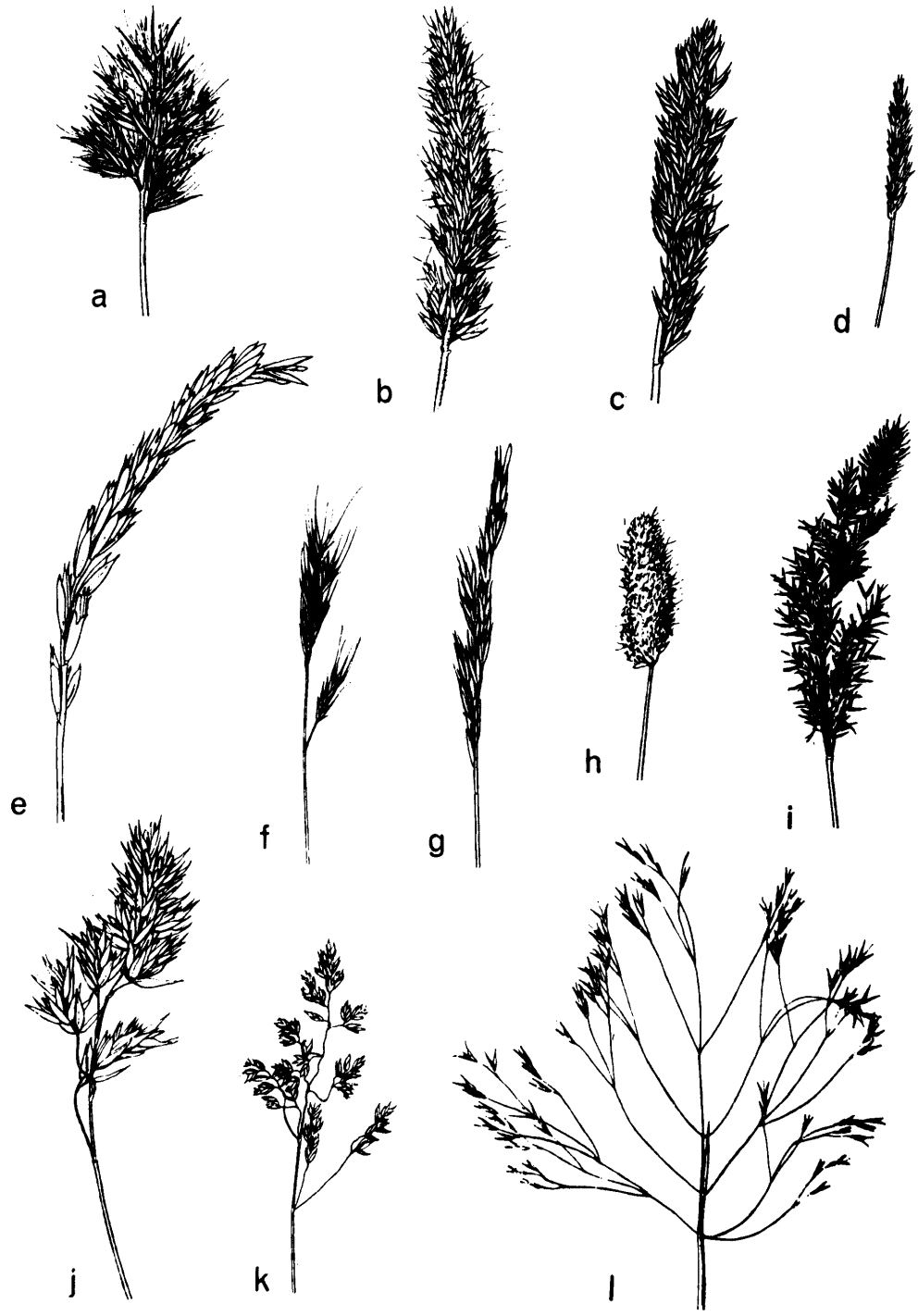


FIGURE 20

Inflorescences of Gramineae.

a. *Cortaderia pilosa.*
b. *Trisetum spicatum.*
c. *Poa alopecurus.*
d. *Agrostis canina.*
e. *Agropyron magellanicum.*
f. *Vulpia bromoides.*
g. *Festuca erecta.*
h. *Alopecurus antarcticus.*
i. *Agrostis magellanica.*
j. *Hierochloë redolens.*
k. *Poa pratensis.*
l. *Deschampsia antarctica.*

All $\times\frac{4}{5}$.

above, there is substantial variation in width and degree of involution of the leaves, shape of the inflorescence, development of the hairs at the base of the florets and the extent of strigosity on glumes and lemma.

Specimens. **WF**: TC06 *Davies 27.i.1938* (K); TC31 *Moore 731* (BIRM, C, GH, K, LP, LTR, P, S, UC, US); TD40 *Moore 897* (C, GH, K, LP, LTR, S, US), *914* (BIRM, CHR, GH, K, LP, LTR, S, US), *Vallentin in 1909–11* (K), *Skottsberg**; TC52 *Davies 28.i.1938* (K); TC55 *Skottsberg**; TC58 *Skottsberg**; TD51 *Gibbs 24 & 30.iii.1941* (K), *Davies BF36* (K); TC65 *Davies 26.i.1938* (K); TC66 *Vallentin 313* (K), *Skottsberg**; TC68 *Vallentin 13.i. & x.1910* (BM, K, MANCH); TC88 *Moore 881* (CHR, K, LTR, P, UC), *Skottsberg**; TC99 *Vallentin xii.1910* (K, MANCH); UC17 *Skottsberg**; UD40 *Davies BF48* (K); s. loc. *Nichol 65* (BM). **EF**: UC14 *Cunningham 29.i.1868* (K); UC69 *Young 5* (LTR); UC71 *Davies i.1938* (K); UC74 *Bossière iii.1901* (P); UC76 *Moore 568* (C, GH, K, LP, LTR, S, US); UC77 *Moore 608a* (K, LTR), *Skottsberg**; VC28 *Lesson* (K), *Gaudichaud* (K); VC29 *Davies 1.i.1938* (K); VC37 *Moore 516* (C, GH, K, LP, LTR, S, US), *517* (LTR, P, UC), *Greene 80* (K), *Sladen Fa12/50* (BM); VC47 *Bossière iii.1901* (P), *Hooker 103* (K), *Reid in 1926* (K), *Davies BF50* (K), *Greene 40* (K), *Davies BF56* (K), *Hill xi.1902* (K); s. loc. *Hooker 105, 109* (BM, K), *Lechler 3190* (K), *Weir iv.1937* (K), *Wright* (K), *Middleton in 1923* (K).

3. *P. robusta* Steud. 1855, *Syn. Pl. Glum.*, Pt. 1, p. 426.

Hauman and Parodi, 1929, p. 344.

Festuca arenaria Lam. 1791, *Tabl. Encycl.*, **1**, p. 191, *pro parte;* D'Urville, 1825, p. 32; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 382; Wright, 1911, p. 335; Skottsberg, 1913, p. 15.

Perennial; stems procumbent to ascending, rarely suberect, often rooted in lower part, with prickly conspicuously distichous leaves. Leaves 4·5–15·0 cm., 3–5(–8) mm. wide; lamina usually strongly involute, subulate at apex, rigid and pungent, strigose on upper surface, rather glaucous; sheath rounded, glabrous, shiny, yellowish brown; ligule *c.* 0·8 mm., obtuse, membranous, ciliate. Culms 6–28 cm., erect, terete, smooth. Panicle 5·5–15·0 × 1·0–1·3 cm., spike-like, usually dense, cylindrical, yellowish. Spikelets 9–11 mm., 2- to 3-flowered, the lowest flowers sometimes female. Glumes unequal, the upper slightly longer, about three-quarters to seven-eighths as long as spikelet, ovate-lanceolate, acute to acuminate, strigose on margins especially in basal two-thirds, with hyaline margins, the lower 3-nerved. Lemma 6–8 mm., ovate to ovate-lanceolate, acuminate or with short terminal awn, with scarious margins, sparsely strigulose on keel towards apex; palea subequalling to *c.* three-quarters as long as lemma, membranous, scabrid on nerves. Anthers 2·0–3·5 mm., 4–5 times as long as wide. $2n = c.$ 70–80. Fl. XI–I.

Sandy places and open shaley areas by sea; fairly common and sometimes forming pure stands. 0–*c.* 90 m.

West Falkland, East Falkland. Fuegia, west Patagonia (lat. 52°35′–53°10′S.).

Typus. Chile: Magallanes; Punta Arenas, "in paludosis maritimis", xii.1850. *Lechler 1191* (isotype K!).

Specimens. **WF**: TC04 *Skottsberg**; TC06 *Skottsberg**; TC31 *Moore 704* (C, GH, K, LP, LTR, P, S), *726* (BIRM, CHR, K, LP, S, UC, US); TD40 *Sladen JB123/13* (BM); TC55 *Skottsberg**; TC68 *Vallentin ii.1910* (K), *Skottsberg**; TC69 *Skottsberg**; TC99 *Vallentin xii.1910* (K). **EF**: UC32 *Skottsberg**; UC65 *Corner 342* (LTR); VC36 *Skottsberg**; VC37 *Sladen Fa63/49* (BIRM, BM), *Morton Middleton 24.xi.1904* (MANCH); VC47 *Hooker* (K), *Booth 31* (LTR), *Davies AF4* (K), *Reid in 1926* (K); s. loc. *Weir iv.1937* (K).

4. *P. annua L. 1753, *Sp. Pl.*, p. 68. Annual Meadow-grass

Gaudichaud, 1825, p. 99; 1826, p. 131; D'Urville, 1825, p. 30; Birger, 1907, p. 294; Moore and Sladen, 1965, p. 33.

Tufted annual or short-lived perennial; stems ascending to erect, sometimes with creeping base and rooted at the nodes, but without distinct creeping rhizome. Leaves (1·5–)3–4(–7) cm., 1–4 mm. wide; lamina flat or slightly keeled, often folded longitudinally, acute to subobtuse and cucullate at apex, strigulose on margins, rather weak, transversely wrinkled when young; sheath slightly keeled, glabrous, whitish; ligule 2–4 mm., obtuse, somewhat serrate, membranous. Culms 6–16 cm., erect or ascending, very slender, smooth. Panicle 1·8–*c.* 8·0 cm., ± triangular, lax to rather compact, the branches arising 1–2(–4) together and spreading or deflexed after flowering, green tinged with purple or red. Spikelets 3–5 mm., 3- to 5-flowered. Glumes unequal, the upper slightly the longer, about one-third to half as long as spikelet, ovate to lanceolate or elliptic-oblong, acute, scabrid dorsally on keel, with hyaline margins, the lower 1-nerved. Lemma 2·5–4·0 mm., ovate to oblong, obtuse, with hyaline margins, glabrous or pubescent on keel in basal half, awnless; palea slightly shorter than lemma, glabrous or pubescent on nerves. Anthers 0·7–1·0 mm., 2–4 times as long as wide.

Waste places and cultivated ground near settlements, along paths and other disturbed ground elsewhere, particularly in region of penguin rookeries or goose feeding grounds, where it forms dense green swards; common.

West Falkland, East Falkland. Introduced; cosmopolitan.

Specimens. **WF**: TC32 *Moore 27.i.1964*†; TC41 *Moore 28.i.1964*†; TD40 *Vallentin in 1909–11* (K); TC50 *Moore 783* (LTR); TD51 *Sladen 28.v.1949*†; TC83 *Sladen 22.v.1949*†; UD11 *Gibbs 3.ii.1942* (K). **EF**: UC89 *Sladen JB114/2* (BM); VD00 *Sladen JB120/6* (BM); VC08 *Sladen 13.v.1949*†; VC09 *Sladen 4–5.xii.1949*†; VC16 *Sladen JB102/17* (BIRM, BM); VC47 *Sladen 8.i.1950*†; s. loc. *Bossière in 1901* (P), *Hooker* (K), *Middleton in c. 1923* (K).

5. *P. pratensis L. 1753, *Sp. Pl.*, p. 67. Smooth-stalked Meadow-grass

Hooker, 1847, p. 379; Wright, 1911, p. 335; Skottsberg, 1913, p. 15; Moore and Sladen, 1965, p. 33.

?*P. compressa* auct., non L.; D'Urville, 1825, p. 30; Gaudichaud, 1826, p. 131.

Tufted perennial with slender, creeping rhizomes. Leaves 4–20(–30) cm., 2–5 mm. wide; lamina flat or ± folded, acute to subobtuse and cucullate at apex, glabrous or strigulose, usually not transversely wrinkled; sheath, at least the lower, keeled, smooth; ligule up to 1(–3) mm., obtuse, membranous. Culms 10–60(–80) cm., erect or bent below, slender to stout, terete, smooth. Panicle (2–)4–10(–20) cm., ovate or oblong, lax to rather compact, the branches arising (2–)3–5 together, spreading, purplish or greyish to green. Spikelets 4–6 mm., (2–)3- to 5-flowered. Glumes unequal, the upper slightly longer, about half as long as spikelet, ovate to elliptical, acute, scabrid on keel, with hyaline margins, the lower 1- to 3-nerved. Lemma 3–4 mm., oblong to ovate-oblong, subobtuse or acute, hyaline at margin, sparsely to densely hairy on keel and marginal nerves in basal half, awnless; palea about equalling lemma, scabrid on nerves. Anthers 1·5–2·0 mm., 3–5 times as long as wide. (Fig. 20k)

Waste places and disturbed ground usually, but not always, near settlements, particularly in open sandy areas along coast; common.

West Falkland, East Falkland. Introduced; native of Eurasia but introduced into temperate regions of both hemispheres as a hay and pasture grass.

Specimens. **WF**: TD40 *Vallentin in 1909–11* (K). **EF**: VC09 *Sladen Fa18/49* (BM); VC46 *Sladen Fa3/49* (BM); VC47 *Bossière iii.1901* (P), *Moore 1178* (LTR), *Davies BF31* (K); s. loc. *Hooker* (K), *Gibbs in 1943* (K), *Weir iv.1937* (K), *Wright* (K).

P. trivialis L. 1753, *Sp. Pl.*, p. 67, Rough-stalked Meadow-grass, noted by Davies (1939, p. 80) is likely to persist in improved pastures and can be distinguished from *P. pratensis* by its usually rough leaf-sheaths, by its longer (4–10 mm.) acute ligule, and by the non-scabrid marginal nerves of the lemma.

2. *Vulpia* C.C. Gmel.

Glabrous, annual herbs; leaf-sheaths without auricles. Inflorescence a slender, little-branched, 1-sided, panicle. Spikelets 4- to 8-flowered, somewhat compressed, shortly stalked or subsessile. Glumes shorter than spikelet, keeled, the lower 1-nerved, the upper 3-nerved, awnless. Lemma keeled, obscurely 5-nerved, awned. Palea 2-nerved, bifid, about equalling lemma. Lodicules ovate-oblong, 2-lobed, slightly swollen below. Stamen usually 1; anther *c.* twice as long as wide. Ovary glabrous or sparsely hairy at top; styles short, terminal.

1. *V. bromoides (L.) S. F. Gray 1821, *Nat. Arr. Brit. Pl.*, **2**, p. 124. Squirrel-tail or Barren Fescue

Moore and Sladen, 1965, p. 32.

Festuca bromoides L. 1753, *Sp. Pl.*, p. 75; D'Urville, 1825, p. 31; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 384; Wright, 1911, p. 336; Davies, 1939, p. 63.

Stems erect or ascending, slender, somewhat decumbent at base. Leaves 1–14 cm., 0·5–3·0 mm. wide; lamina flat or convolute, long acuminate, rather rigid, puberulent on upper surface, strigose towards apex and on margins; ligule up to 0·5 mm., membranous. Culms 10–25(–35) cm., simple or branched towards base, rigid, with wide, shiny ribs, smooth. Panicle 2–6(–10) cm., lanceolate or narrowly oblong, rather lax, green or purplish, with scabridulous axis and branches. Spikelets 6–10(–14) mm. (excluding awns). Glumes unequal, the upper lanceolate or oblong-lanceolate, acuminate, 1·3–2·0 times as long as the subulate-lanceolate lower glume, ciliolate towards apex, with narrowly hyaline margins. Lemma 5–9 mm., linear-lanceolate, with revolute margins, scabrid; awn terminal, straight, *c.* twice as long as lemma; palea membranous, scabrid on nerves. Fl. I–II. (Fig. 20f)

Disturbed ground around settlements, sandy or open soil along coast near settlements, often with *Aira praecox*; fairly common.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa but introduced into most temperate regions of both hemispheres.

This species is most likely to be confused with *Bromus condensatus*; for differences see under that species (p. 155).

Specimens. **WF**: TD40 *Vallentin in 1909–11* (K), *Sladen JB123/12* (BM); TC66 *Vallentin 310* (K); TC86 *Sladen Fa85/49* (BM); TC99 *Vallentin 7.ii.1911* (MANCH); UD11 *Gibbs 3.ii.1942* (K). **EF**: UC65 *Moore 647* (K, LTR); VC09 *Sladen Fa16/49* (BM); s. loc. *Weir iv.1937* (K).

3. *Festuca* L.

Perennial herbs; leaf-sheaths with auricles. Inflorescence a lax or spike-like, often 1-sided, compound panicle. Spikelets 2- to 9-flowered, compressed to subterete. Glumes shorter than spikelet, membranous, usually keeled, 1- to 3-nerved, awnless. Lemma usually keeled towards apex, 5- to 7-nerved, acute or shortly bifid, usually with terminal awn. Palea 2-nerved, shortly bifid, about equalling lemma, membranous. Lodicules acute or minutely lobed. Stamens 3; anthers 2–6 times as long as wide. Ovary glabrous, rarely slightly pubescent at top; styles short, terminal.

1. Lower glume 5 mm. or more; upper glume longer than lemma of lowest floret in spikelet **1. *erecta***
   Lower glume 4 mm. or less; upper glume usually shorter than lemma of lowest floret in spikelet 2
2. Plant not stoloniferous; leaf-sheath split for one-third to half its length; anthers *c.* 1 mm. .. .. **2. *magellanica***
   Plant usually stoloniferous; leaf-sheath split for more than half its length; anthers 2–3 mm. **3. *rubra***

1. *F. erecta* D'Urv. 1825, *Fl. Is. Mal.*, p. 31. Land Tussac

Gaudichaud, 1826, p. 132; Hooker, 1847, p. 384; Wright, 1911, p. 336; Skottsberg, 1913, p. 15; Parodi, 1953, p. 188.

Densely tufted, with sterile shoots ± distichous on culms to give a conspicuously flattened appearance. Leaves 6–25 cm., *c.* 1 mm. wide; lamina linear, setaceous distally, acute, strongly convolute, rigid, erect, ciliate with patent hairs or these confined to basal half and scabrid towards apex, usually glaucous; sheaths with conspicuous, rounded, obtuse auricles; ligule very short, membranous. Culms 6–26 cm., usually exceeding leaves, erect, terete, with conspicuous, rather shiny ribs, densely appressed-pubescent. Panicle 2·5–8·0 cm., lanceolate or narrowly oblong, spike-like, 1-sided, with erect, ± appressed branches, green or purplish green. Spikelets 6–8 mm. (excluding awns), compressed, with 3–5 florets, the terminal floret usually sterile and reduced to lemma; rhachilla appressed-pubescent. Glumes subequal, or unequal with the lower *c.* two-thirds as long as the upper, *c.* half to two-thirds as long as spikelet, lanceolate to ovate-lanceolate, acute, with ciliate scarious margins, ciliate-scabrid towards tip and on keel, the upper 3-nerved, the lower 1(–3)-nerved. Lemma 2·5–5·0 mm., ovate-lanceolate, acute, shortly bifid, with terminal scabrid awn one-fifth to half as long as lemma, coriaceous, ciliate, hirsute-scabridulous at least on keel; palea *c.* two-thirds as long as to ± equalling lemma, ovate-lanceolate, scabrid. Anthers 2–3 mm. Fl. XI–I. (Fig. 20g)

Most terrestrial communities except the *Poa flabellata* association; common. 0–705 m.

West Falkland, East Falkland. Fuegia, South Georgia, Iles de Kerguelen, Macquarie Island.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC31 *Moore 718* (C, K, LP, LTR, P, UC, US); TC32 *Moore 675* (GH, K, LP, LTR, S), *Moore 765* (BIRM, C, GH, K, LP, LTR, S, UC); TC79 *Moore 845* (LP, LTR, P, S, US); TC88 *Moore 880* (BIRM, C, CHR, GH, K, LP, LTR, P, S, SGO, UC, US); TC99 *Vallentin i.1911* (K); UC27 *Skottsberg**. **EF**: UC54 *Moore 623* (K, LTR); UC69 *Young 1* (LTR); VC27 *Hooker 15* (K); VC37 *Holdgate 635* (BIRM), *Sladen Fa12/50* (BM), *Davies 4.ii.1938* (K); VC47 *Gibbs ii.1934* (K), *Davies 13 & 14.i.1938* (K); s. loc. *Weir iv.1937* (K).

2. *F. magellanica* Lam. 1788, *Encycl. Méth. Bot.*, **2**, p. 461.

D'Urville, 1825, p. 31; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 384; Wright, 1911, p. 336; Skottsberg, 1913, p. 15; Parodi, 1953, p. 197.

F. ovina L. var. *magellanica* (Lam.) Hack. 1900, in Dusén, *Wiss. Ergebn. schwed. Exped. Magellansländ.*, **3**, p. 228; Davies, 1939, p. 62.

Densely tufted. Leaves 1·5–12·0 cm., 0·5–0·8 mm. wide; lamina setaceous, acute to subobtuse, strongly involute, glabrous to densely pubescent, rather rigid; sheaths rounded, split along one side up to one-third to half length, glabrous or pubescent, smooth, pale brownish to white, with conspicuous rounded and often ciliate auricles; ligule very short, membranous. Culms 4–30 cm., exceeding leaves, erect, terete, usually with somewhat conspicuous, rather shiny ribs, glabrous to appressed-pubescent. Panicle 3·5–6(–8) cm., linear-lanceolate or narrowly oblong, spike-like, with ± erect and appressed, pubescent to glabrous branches, green to dark purplish green. Spikelets 6–8 mm. (excluding awns), compressed, with (2–)3–6 florets; rhachilla glabrous to appressed-pubescent. Glumes unequal, the lower *c.* half to two-thirds as long as the upper, lanceolate, acute to acuminate, glabrous or ciliate or usually scabrid dorsally, at least distally, the upper 3-nerved, the lower 1-nerved. Lemma 4–6 mm., lanceolate, acute, glabrous to densely appressed-pubescent, with terminal scabrid awn half to two-thirds as long as lemma, coriaceous; palea ± equalling lemma, oblong to ovate-lanceolate, scabrid to glabrous. Anthers *c.* 1 mm., *c.* twice as long as wide. Fl. XII–I.

Rocky areas, open and shallow soil in most communities; fairly common. 0–705 m.

West Falkland, East Falkland. Fuegia, west Patagonia (lat. 45°24′S.), Andean Patagonia north to lat. 40°10′S., north along the Andes to *c.* lat. 36°30′S., east Patagonia (lat. 49°20′S.).

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P!).

Specimens. **WF**: TC04 *Skottsberg**; TC06 *Skottsberg**; TD40 *Davies 21.i.1938* (K), *Skottsberg**; TD51 *Hamilton JH65* (BM); TC66 *Skottsberg**; TC68 *Vallentin xii.1909* (K); TC79 *Moore 845b* (LTR); TC88 *Moore 824* (K, LTR), *Skottsberg**; TC99 *Vallentin i.1911* (MANCH). **EF**: UC69 *Young 3* (LTR); VC09 *Sladen Fa21/49* (BM); VC28 *Sladen Fa38/49* (BM), *Skottsberg**; VC29 *Davies BF38* (K); VC47 *Moore 1179* (LTR), *Hamilton JH65* (BIRM); s. loc. *Middleton in c. 1923* (K), *Weir iv.1937* (K).

3. *F. rubra L. 1753, *Sp. Pl.*, p. 74. Creeping or Red Fescue

Davies, 1939, p. 62–63; Moore and Sladen, 1965, p. 32.

Similar to *F. magellanica* but distinguished by being usually stoloniferous, with the leaf-sheath split for more than half its length, with inconspicuous auricles, and with the anthers 2–3 mm.

Waste places near settlements and in improved pastures; uncommon.

West Falkland, East Falkland. Introduced; native of Eurasia and North America but widely introduced into southern temperate regions for grassland improvement.

Specimens. **WF**: TC86 *Sladen 16.xii.1949*†; UC27 *Davies*†; TC88 *Sladen 18.xii.1949*†. **EF**: UC58 *Davies*†; UC89 *Davies*†.

F. pratensis Huds. 1762, *Fl. Angl.*, Ed. 1, p. 37, Meadow Fescue, a native of Eurasia, is likely to be encountered in improved pastures (Davies, 1939, p. 80). It can be distinguished from the other *Festuca* species by the flat or folded, not setaceous, leaves of the sterile shoots, by the narrow, spreading auricles, and by the awnless lemma.

4. *Cynosurus* L.

Erect, glabrous, annual or perennial herbs; leaf-sheaths without auricles. Inflorescence a spike-like, 1-sided panicle. Spikelets subsessile, compressed, dimorphic; upper spikelet of each branch fertile, 1- to 5-flowered; lower spikelets sterile, almost exceeding the upper, with up to 18 rigid, distichous lemmas only. Glumes equalling or somewhat shorter than spikelet, membranous, keeled, 1-nerved, awnless. Lemma rounded, coriaceous, obscurely 5-nerved, with short terminal awn. Palea 2-nerved, emarginate or very shortly bifid, rather shorter than to subequalling lemma. Lodicules short, acutely 2-lobed. Stamens 3; anthers 5–7 times as long as wide. Ovary glabrous; styles short, terminal.

Perennial; panicle narrowly cylindrical; fertile lemma with short awn .. .. .. **1. *cristatus***
Annual; panicle ovoid; awn as long as or longer than fertile lemma .. .. .. **2. *echinatus***

1. *C. cristatus L. 1753, *Sp. Pl.*, p. 72. Crested Dog's-tail

Davies, 1939, p. 80; Moore and Sladen, 1965, p. 32.

Compact, tufted perennial. Leaves 4–15 cm., 1–4 mm. wide; lamina flat, acuminate, scabridulous towards apex, glabrous, or hirsutulous on upper surface; sheaths rounded, smooth; ligule 0·5–1·5 mm.,

obtuse, membranous. Culms 5–75 cm., erect or slightly spreading, terete, smooth, rigid. Panicle 1–14 cm., narrowly cylindrical, dense, erect or slightly curved, rigid, green, sometimes purplish tinged, with scabrid or hirsutulous axis. Spikelets 3–6 mm.; sterile spikelets ovate to obovate, the lemmas setaceous to linear, acuminate, 1-nerved, with ciliate keel, slightly pubescent towards apex; fertile spikelets 2- to 5-flowered, oblong to obovate-cuneiform. Glumes subequal, linear-lanceolate, acuminate, glabrous, with wide, membranous margins. Lemma 3–4 mm., lanceolate to oblong-ovate, pubescent, scabrid on keel towards apex, with membranous margins, with awn up to one-quarter as long as lemma; palea ± lanceolate. Anthers *c.* 2 mm. Fl. XII.

Disturbed ground and improved grasslands near settlements; occasional.

West Falkland. Introduced; native of Eurasia but introduced into temperate regions of both hemispheres.

Specimens. **WF**: TD40 *Vallentin in 1909–11* (K); TC86 *Sladen 16.xii.1949*†; UD11 *Sladen Fa73/49* (BM).

2.** ***C. echinatus L. 1753, *Sp. Pl.*, p. 72. Rough Dog's-tail

Annual. Leaves 5–20 cm., 3–10 mm. wide; lamina flat, acuminate, scabrid on upper surface, smooth beneath; sheaths rounded, smooth, the upper slightly inflated; ligule up to 10 mm., obtuse, membranous. Culms 10–50 cm., erect or spreading, terete, smooth. Panicle 1–8 cm., ovoid to cylindrical-ovoid, dense, erect, shiny, green or purplish, with smooth axis. Spikelets 7–14 mm.; sterile spikelets broadly obovate, the lemmas narrowly lanceolate, 1-nerved, with ciliate keel and terminal awn; fertile spikelets 1- to 5-flowered, cuneiform. Glumes subequal, linear-lanceolate, acuminate. Lemma 5–7 mm., ovate to ovate-lanceolate, acute and entire or with bifid apex, pubescent in apical half, with straight, scabrid, subterminal awn as long as or longer than lemma; palea oblong. Anthers 2·5–4·0 mm. Fl. XII–II.

Disturbed and cultivated ground near settlements; occasional.

West Falkland, East Falkland. Introduced; native of Mediterranean region but widely introduced throughout temperate areas of both hemispheres.

Specimens. **WF**: TC88 *Davies BF7* (K). **EF**: VC37 *Davies BF27* (K).

5. *Dactylis* L.

Glabrous, perennial herb with strongly compressed vegetative shoots; leaf-sheaths without auricles. Inflorescence a compound panicle, the lowest branches usually long. Spikelets 2- to 5-flowered, subsessile to shortly pedicellate, densely crowded in thick, 1-sided clusters at ends of the branches, compressed. Glumes *c.* two-thirds as long as spikelet, keeled, (1–)3-nerved, mucronate or with short terminal awn, membranous. Lemma keeled, 5-nerved, with short subterminal awn. Palea 2-nerved, bifid, shorter than to equalling lemma. Lodicules linear, 2-lobed. Stamens 3; anthers 6–8 times as long as wide. Ovary glabrous; styles very short, terminal.

1.** ***D. glomerata L. 1753, *Sp. Pl.*, p. 71. Cock's-foot

Birger, 1907, p. 295; Davies, 1939, p. 62–63; Moore and Sladen, 1965, p. 32.

Coarse, densely tufted, usually glaucous. Leaves 10–45 cm., 2–14 mm. wide; lamina folded at first, later flat, acute, ± keeled, scabrid; sheaths keeled, smooth or scabrid, glabrous or shortly hairy; ligule 2–12 mm., subacute, torn, membranous. Culms 15–100 cm., erect or spreading, terete, rough or smooth. Panicle 2–20 cm., cylindrical to ovoid, green or purplish; branches erect, spreading or sometimes deflexed, scabrid or hairy, rigid. Spikelets 5–8 mm., oblong to obovate-cuneiform. Glumes subequal, lanceolate to ovate-lanceolate, acuminate, ciliate on keel, with short awn. Lemma 4–7 mm., lanceolate, acute to subobtuse, scabrid or ciliate on keel, with membranous margins, with scabrid awn up to one-quarter as long as lemma; palea lanceolate, scabrid or puberulent on keels. Anthers 3–4 mm.

Waste ground and improved pastures near settlements; fairly common.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa. An important pasture and meadow grass widely introduced into temperate regions of both hemispheres.

Specimens. **WF**: TD40 *Vallentin in 1909–11* (K); TD51 *Sladen 28.v.1949*†; TC88 *Sladen 18.xii.1949*†; UD11 *Sladen 15.xii.1949*†. **EF**: VC16 *Sladen 25.iv.1949*†; VC47 *Davies AF8* (K).

6. *Puccinellia* Parl.

Tufted, glabrous, perennial herbs; leaf-sheaths without auricles. Inflorescence a spreading or rather narrow, compound panicle. Spikelets 2- to 5-flowered, subterete, shortly pedicellate. Glumes unequal, the upper *c.* one-third to three-quarters as long as spikelet, somewhat keeled, membranous, awnless, the upper 3-nerved, the lower obscurely 1-nerved, *c.* one-third to half as long as the upper. Lemma rounded dorsally, 5-nerved, awnless. Palea 2-nerved, bifid, equalling lemma. Lodicules lanceolate, membranous. Stamens 3; anthers *c.* 3–4 times as long as wide. Ovary glabrous; stigmas sessile, terminal.

Culms 2–3 cm.; panicle less than 3 cm., narrow; spikelets up to 3 mm. .. .. .. **1. *pusilla***
Culms more than 10 cm.; panicle more than 6 cm.; spikelets more than 5 mm. .. **2. *glaucescens***

1. *P. pusilla* (Hack.) Parodi 1937, *Notas Mus. La Plata*, **2**, No. 11, p. 15.

Atropis preslii Hack. ssp. *pusilla* Hack. 1900, in Dusén, *Wiss. Ergebn. schwed. Exped. Magellansländ.*, **3**, No. 5, p. 227; Birger, 1907, p. 290; Skottsberg, 1913, p. 15.

Forming low, compact tufts. Leaves 9–30×0·3–*c.* 0·5 mm.; lamina strongly involute, obtuse, rather rigid; sheaths somewhat keeled, smooth, pale brownish; ligule *c.* 1 mm., obtuse, membranous. Culms 2–3 cm., erect or curved, somewhat angled, often scarcely exceeding leaves. Panicle 1·0–2·5 cm., linear, greenish to silvery, often slightly purplish tinged, often largely enclosed in sheath; branches up to 3 mm., erect, scabrid. Spikelets 2- to 3-flowered, 2–3 mm., linear-oblong. Glumes ovate-lanceolate, obtuse, the upper 1·5–1·7 mm., the lower 0·5–0·8 mm. Lemma 1·5–2·0 mm., ovate-oblong, subobtuse; palea lanceolate, scabrid on keels. Anthers 0·5–0·8 mm. Fl. I–II.

Sandy areas by sea; rare.

East Falkland. Fuegia.

Typus. Tierra del Fuego: Porvenir. *Dusén.*

Specimens. **EF**: VC36 *Birger 21.ii.1904* (S), *Skottsberg 123* (K); VC47 *Skottsberg**.

2. *P. glaucescens (Phil.) Parodi 1937, *Notas Mus. La Plata*, **2**, No. 11, p. 14.

Moore and Sladen, 1965, p. 32.

Plant loosely tufted, rather glaucous. Leaves up to 7 cm., *c.* 1 mm. wide; lamina strongly involute, obtuse to subacute, smooth; sheaths rounded, smooth; ligule 1·5–2·5 mm., obtuse, membranous. Culms 12–20 cm., longer in fruit, ascending to erect, often procumbent, terete or somewhat angled, smooth. Panicle 6–9 cm., spreading, silvery, often slightly purplish tinged distally; branches up to 11–13 mm., scabrid. Spikelets 3- to 5-flowered, 5·5–7·0 mm., ovate-oblong. Glumes ovate-lanceolate, obtuse, the upper *c.* 2·5 mm., the lower 1·7–2·0 mm. Lemma 3·0–3·5 mm., ovate-oblong, obtuse; palea oblong, scabrid on keels. Anthers *c.* 0·7–0·9 mm. Fl. I.

Disturbed ground near settlements; rare.

East Falkland. Probably introduced; native of Chile, Argentina and Uruguay.

Specimens. **EF**: VC47 *Sladen Fal/50* (BIRM, BM).

7. *Lolium* L.

Glabrous, perennial herbs; leaf-sheaths without auricles. Inflorescence a simple spike, with spikelets edgeways on to axis. Spikelets 4- to 12-flowered, compressed, alternating on opposite sides of axis, spaced their own length apart. Glumes shorter than spikelet, rounded dorsally, 5- to 7-nerved, awnless, the lower present only in terminal spikelet. Lemma rounded dorsally, 5-nerved, awnless. Palea 2-nerved, acute, about equalling lemma. Lodicules lanceolate, acute. Stamens 3; anthers 3–5 times as long as wide. Ovary sparsely hairy at apex; styles very short, terminal.

1. *L. perenne L. 1753, *Sp. Pl.*, p. 83. Perennial Rye-grass

D'Urville, 1825, p. 31; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 389; Wright, 1911, p. 336; Moore and Sladen, 1965, p. 32.

Loosely to densely tufted. Leaves 3–20 cm., 2–6 mm. wide; lamina folded at first, later flat, obtuse or acute, with small, narrow projections at base, smooth or rarely slightly scabrid on upper surface; sheaths

smooth; ligule *c.* 1 mm., truncate, membranous. Culms 10–60 cm., erect or spreading, terete, slender, smooth. Panicle 4–20 cm., slender to somewhat stout, rather rigid, green or purplish; axis smooth. Spikelets 5–15 mm., oblong to elliptical. Upper glume linear-lanceolate or rather subulate, obtuse or subacute, smooth, in terminal spikelet the lower glume similar and subequal. Lemma 5–7 mm., usually shorter than glume, oblong- to linear-lanceolate, acute to subobtuse, smooth or scabrid on nerves towards base, membranous on margins towards apex; palea oblong- to ovate-lanceolate, scabrid on keels. Anthers 3–4 mm.

Waste ground and improved pastures, sometimes coastal sands, near settlements; fairly common.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa but a valuable agronomic grass widely introduced into temperate regions of both hemispheres.

Specimens. **WF**: TD40 *Vallentin 70* (K); UD11 *Sladen 15.xii.1949*†. **EF**: VC09 *Sladen 4–5.xii.1949*†; VC16 *Sladen JBI02/13* (BM).

8. *Bromus* L.

Annual, biennial or perennial herbs; leaf-sheaths without auricles. Inflorescence a simple or compound panicle. Spikelets 5- to 12-flowered, somewhat compressed. Glumes shorter than spikelet, the lower 3- to 5-nerved, the upper 5- to 7-nerved, awnless. Lemma rounded dorsally, 7- to 9-nerved, with terminal or subterminal, straight, scabrid awn. Palea 2-nerved, entire or emarginate to bifid, equalling or slightly shorter than lemma. Lodicules oblong, obtuse, membranous. Stamens 3; anthers 1–5 times as long as wide. Ovary with apical hairy appendage; styles lateral below the apex.

Leaf-blades 2 mm. or more wide, flat, pubescent; lemma-awn 5 mm. or more .. .. **1. *mollis***
Leaf-blades less than 0·5 mm. wide, filiform, glabrous; lemma-awn up to 3 mm. **2. *condensatus***

1. *B. mollis L. 1762, *Sp. Pl.*, Ed. 2, p. 112. Soft Brome, Lop-grass

Davies, 1939, p. 61.

Annual or biennial. Leaves up to 20 cm., 2–7 mm. wide; lamina flat, acuminate, soft, pubescent; sheaths rounded, pubescent, or the upper glabrous; ligule up to 2·5 mm., truncate and dentate, membranous, hairy. Culms 5–80 cm., erect or spreading, slender to rather stout, terete, pubescent or glabrous. Panicle 5–10 cm., oblong, erect and lax when young, later contracted and nodding, greyish green or purplish; branches clustered, pubescent, bearing 1–5 spikelets; pedicels 2–10 mm., often shorter than their spikelet. Spikelets 10–20 mm., lanceolate. Glumes unequal, acute, the lower lanceolate, slightly shorter than ovate upper glume. Lemma 7–10 mm., ovate to obovate, obtuse, often retuse, with narrow membranous margins; awn 5–10 mm., subterminal; palea oblong-ovate, ciliate on nerves. Anthers 0·2–1·5 mm.

Waste places near settlements; rare.

West Falkland. Introduced; native of Eurasia but naturalized in temperate regions of both hemispheres.

Specimens. **WF**: UC27 *Davies*†.

2. *B. condensatus Hack. 1879, *Öst. bot. Z.*, **29**, p. 209.

Moore and Sladen, 1965, p. 32.

Slender annual. Leaves 3–5 cm., *c.* 0·4 mm. wide; lamina filiform, glabrous; sheaths rounded, glabrous; ligule, *c.* 0·2 mm., membranous. Culms *c.* 10 cm., erect, slender, with rather wide ribs, glabrous. Panicle *c.* 6 cm., lanceolate-cylindrical, with branches and axis rather scabrid on angles. Spikelets 8–11 mm., lanceolate, greenish purple. Glumes unequal, glabrous, coriaceous; upper glume *c.* half as long as spikelet, oblong-ovate, acute, 5-nerved; lower glume *c.* two-thirds as long as upper, oblong-lanceolate, acuminate, obscurely 3-nerved. Lemma *c.* 5 mm., ovate-lanceolate, acute to acuminate, glabrous; awn 1·5–3·0 mm., terminal; palea oblong-ovate, shortly bifid, scabridulous on nerves. Anthers *c.* 1 mm.

Waste ground near settlements; rare.

West Falkland. Introduced; native of south-eastern Europe.

The plant occurring in the Falkland Islands belongs to var. *australis* (Griseb.) Hayek, distinguished by its glabrous leaf-sheaths.

Likely to be confused with *Vulpia bromoides*, but that species has one stamen and the lemma-awn is about twice as long as the lemma.

Specimens. **WF**: TC86 *Sladen Fa84/49* (BM).

9. *Ceratochloa* P. Beauv.

Perennial; leaf-sheaths without auricles. Inflorescence a compound panicle. Spikelets 6- to 12-flowered, strongly compressed. Glumes shorter than spikelet, strongly keeled, awnless, the lower 3- to 5-nerved, the upper 5- to 7-nerved. Lemma strongly keeled, 9- to 13-nerved, mucronate or with short terminal or subterminal awn. Palea 2-nerved, emarginate, *c.* half to three-quarters as long as lemma. Lodicules oblong, entire, membranous. Stamens, ovary and style as in *Bromus*.

1.** ***C. unioloides (Willd.) P. Beauv. 1812, *Ess. Agrostogr.*, p. 75. Rescue Grass

Leaves *c.* 25–40 cm., 3–6 mm. wide; lamina flat, acuminate, glabrous or sparsely pubescent; sheaths rounded, the upper glabrous, the lower pubescent; ligule 2–5 mm., truncate and irregularly dentate. Culms 20–70 cm., erect or spreading, terete, usually glabrous. Panicle 10–20(–30) cm., ± spreading, greyish green or purplish; branches strigose on ribs. Spikelets 16–30 mm., lanceolate. Glumes somewhat unequal, ovate-lanceolate, acute and cucullate. Lemma 12–18 mm., ovate-lanceolate, acute, mucronate or with awn 1–3 mm., usually scabrid on nerves and towards margins; palea ciliate on nerves. Anthers 2–4 mm.

Waste land near settlements; rare.

East Falkland. Introduced; native of north-east Argentina and southern Brazil but widely introduced in both hemispheres.

Specimens. **EF**: VC47 *Davies AF19* (K).

Tribe HORDEAE (TRITICEAE)

10. *Agropyron* Gaertn.

Tough, rhizomatous, perennial herbs; leaf-sheaths with auricles. Inflorescence a spike of many distichous spikelets. Spikelets 3- to 6-flowered, subterete, solitary and broadside to axis. Glumes two-thirds to three-quarters as long as spikelet, rounded dorsally, the lower 3-, the upper 5-nerved, awnless. Lemma obtusely keeled, 5-nerved, awnless or with terminal awn. Palea 2-nerved, emarginate or bifid, slightly shorter than lemma. Lodicules ovate, acute, membranous. Stamens 3; anthers 3–5 times as long as wide. Ovary hairy; styles very short, distant.

Glumes at least the upper, bicuspidate at apex, persistent after fruit-shedding; leaves scabrid on upper surface, smooth beneath .. .. **1. *magellanicum***

Glumes acute, not persistent; leaves at least sparsely hairy on upper surface, scabrid beneath **2. *repens***

1. ***A. magellanicum*** (Desv.) Hack. 1900, in Dusén, *Wiss. Ergebn. schwed. Exped. Magellansländ.*, **3**, No. 5, p. 231.

Wright, 1911, p. 336; Skottsberg, 1913, p. 15; Parodi, 1940, p. 51.

Triticum glaucum auct., non Desf.; D'Urville, 1825, p. 31; Gaudichaud, 1826, p. 132.
T. repens auct., non L.; Hooker, 1847, p. 389; Melvill, 1903, p. 8.
T. repens L. var. *magellanicum* Desv. 1853, in C. Gay, *Fl. Chile*, **6**, p. 452.

Rather loosely tufted, glaucous, with creeping rhizomes. Leaves 10–40 cm., 3–7 mm. wide; lamina flat or somewhat involute, acuminate to somewhat subulate, with many prominent narrow ribs, scabrid on upper surface, glabrous and smooth beneath; sheaths rounded, with short, spreading auricles, glabrous, smooth; ligule up to 0·5 mm., truncate, membranous. Culms 8–50 cm., erect or ascending, terete, faintly ribbed, glabrous. Spike 7–19 cm., rigid, somewhat curved; axis smooth, glabrous. Spikelets 12–21 mm., ovate-lanceolate, usually 3-flowered; rhachilla pubescent. Glumes subequal, oblong-lanceolate, acuminate or mucronate, often in addition the upper bicuspidate at apex, smooth, but serrulate on apical tooth or

mucro, glabrous or very sparsely hairy, persistent, tough. Lemma 8–12 mm., oblong-lanceolate, shortly bifid, with termina lawn up to 3·5 mm. from notch, appressed-pubescent; palea oblong, with short, rigid, appressed hairs on nerves. Anthers 2·5–3·0 mm. Fl. XII–I. (Fig. 20e)

Sandy and rocky areas by sea; locally common, often forming almost pure stands. 0–24 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia (*c.* lat. 53°S.).

Typus. Chile: Straits of Magellan; Puerto Galant, 29–31.xii.1837. *Le Guillou.*

Specimens. **WF**: TC31 *Moore 727* (BIRM, C, CHR, GH, K, LP, LTR, P, S, UC, US); TD40 *Vallentin 74* (K); TD51 *Davies BF2* (K); TC65 *Davies BF39* (K); TC66 *Skottsberg**; TC68 *Vallentin ii.1910* (K), *R. Vallentin in 1901–02* (MANCH); TC86 *Sladen Fa77/49* (BM); TC88 *Skottsberg**; TC99 *Vallentin xii.1910* (K), *Vallentin 80* (K, MANCH). **EF**: UC32 *Skottsberg**; UC65 *Skottsberg**; UC74 *Skottsberg**; VC28 *Skottsberg**; VC47 *Sladen Fa5/51* (BM), *Davies 14.i.1938* (K), *Davies BF42* (K), *Hooker 9* (K); s. loc. *Weir iv.1937* (K), *Middleton in 1923* (K), *Chartres* (K), *Hooker* (K), *Wright* (K).

2.** ***A. repens (L.) P. Beauv. 1812, *Ess. Agrostogr.*, p. 102. Couch-grass, Twitch

Wright, 1911, p. 336; Moore and Sladen, 1965, p. 32.

Of similar habit to *A. magellanicum* but with the lamina smooth and sparsely or densely hairy on the upper surface, scabrid beneath; spikelets 3- to 6-flowered; glumes acute, scabrid on nerves towards tip, glabrous; lemma not bifid, glabrous; anthers 3·5–6·0 mm.

In waste places and cultivated ground near settlements; uncommon.

East Falkland. Introduced; native of Eurasia but a widely distributed weed of temperate regions in both hemispheres.

Specimens. **EF**: VC47 *Sladen JB106/6* (BM).

11. *Hordeum* L.

Annual or perennial herbs; leaf-sheaths without auricles. Inflorescence a somewhat compressed spike. Spikelets 1-flowered, in alternate, distichous groups of three, the central floret in each group hermaphrodite, the laterals sterile and reduced to 1–3 spreading awns; rhachilla produced beyond the floret. Glumes ± as long as spikelet, rounded dorsally, 1-nerved, with terminal awn. Lemma rounded dorsally, 5-nerved, with long, terminal awn. Palea 2-nerved, obtuse, about as long as lemma. Lodicules lanceolate, narrowed below, finely fimbriate. Stamens 3; anthers 4–6 times as long as wide. Ovary hairy towards apex; stigmas sessile.

Glumes ± as long as fertile lemma .. .. **1. *jubatum***
Glumes 2–3 times as long as fertile lemma .. .. **2. *comosum***

1.** ***H. jubatum L. 1753, *Sp. Pl.*, p. 85. Fox-tail Barley

Marquand, 1923, p. 371.

Tufted perennial. Leaves 2–18 cm., 2–5 mm. wide; lamina flat, acuminate, scabrid, with narrow spreading auricles at base; sheaths rounded, the upper usually glabrous, the lower hairy; ligule up to 1 mm., truncate, membranous. Culms 30–60 cm., terete, smooth, glabrous. Spike 5–10 cm., erect or nodding, soft, pale greenish grey. Fertile spikelet 2·5–6·0 cm. (including awns). Glumes equal, subulate, with long awn, ciliate towards base. Lemma 6–8 mm., lanceolate, with awn 3–6 times as long as lemma, the whole about equalling glumes. Anthers 1·6–2·0 mm.

Waste ground near settlements; rare.

West Falkland, East Falkland. Introduced; native of North America and Siberia.

Specimens. **WF**: TC68 *Vallentin* (K). **EF**: UC65 *Davies BF6* (K).

2.** ***H. comosum Presl 1830, *Reliq. Haenk.*, **1**, p. 327.

Moore and Sladen, 1965, p. 32.

Like *H. jubatum* but with the glumes 2–3 times as long as the lemma of the fertile floret, and the lemmas of the lateral florets acute to shortly awned.

Waste ground near settlements; rare.

East Falkland. Introduced; native of Chile.
Perhaps not distinct from *H. jubatum* (see Raven, 1963, p. 176).
Specimens. **EF**: VC 47 *Sladen JB106/4* (BM).

12. *Elymus* L.

Robust, perennial herbs; leaf-sheaths with auricles. Inflorescence a compact spike. Spikelets 3- to 6-flowered, the upper floret sterile, in groups of 2–3, alternately opposite and distichous; rhachilla pubescent and produced beyond the uppermost floret. Glumes ± as long as spikelet, keeled, 5-nerved, awnless. Lemma rounded dorsally, somewhat keeled towards apex, 5-nerved, awnless. Palea 2-nerved, obtuse or shortly bifid, as long as lemma, tough. Lodicules lanceolate, acute. Stamens 3; anthers several times as long as wide. Ovary hairy; stigmas sessile.

1. *E. arenarius L. 1753, *Sp. Pl.*, p. 83. Lyme-grass
Hubbard, 1937, p. 274.

Stems creeping and rooting to form large tufts or masses. Leaves up to 60 cm., 8–20 mm. wide; lamina flat or involute, rigid, acuminate, scabrid on ribs on upper surface, smooth beneath, glaucous; sheaths smooth, glabrous, with two narrow, spreading auricles; ligule up to 1 mm., truncate, membranous, pubescent. Culms 60–200 cm., erect or spreading, terete, smooth. Spike 15–30 cm., cylindrical, stout, rigid. Spikelets 20–30 mm., oblong or cuneiform, sessile. Glumes equal, lanceolate, acuminate, rigid, pubescent on keel towards apex. Lemma 10–25 mm., largest near base of spikelet, lanceolate, acute to subobtuse, pubescent; palea pubescent, scabrid on keels. Anthers 7–8 mm.
Open coastal sandy areas; common.
West Falkland, East Falkland. Introduced; used, together with *Ammophila*, to stabilize sand dunes. Native of north and west Europe.
Specimens. **WF**: TC65 *Davies AF18* (K). **EF**: VC47 *Marshall 17.i.1938* (K), *Reid* (K).

Tribe AVENEAE

13. *Holcus* L.

Softly pubescent, tufted, perennial herbs; leaf-sheaths without auricles. Inflorescence a compound panicle. Spikelets 2-flowered, compressed, the lower floret hermaphrodite, the upper male; rhachilla shortly produced beyond upper floret, glabrous. Glumes longer than spikelet, strongly keeled, the lower 1-nerved, mucronate, the upper 3-nerved, with short terminal awn. Lemma strongly keeled, obscurely 5-nerved, with subterminal awn in upper floret. Palea 2-nerved, shortly 3-lobed at apex, equalling or slightly shorter than lemma. Lodicules lanceolate, acuminate. Stamens 3; anthers 3–4 times as long as wide. Ovary glabrous; stigmas sessile, terminal.

1. *H. lanatus L. 1753, *Sp. Pl.*, p. 1048. Yorkshire Fog
Birger, 1907, p. 278; Davies, 1939, p. 61–63; Moore and Sladen, 1965, p. 32–33.

Leaves 4–20 cm., 3–10 mm. wide; lamina flat, acute to acuminate, pubescent, greyish green; sheaths rounded, appressed-pubescent, the upper inflated; ligule 1–2 mm., truncate, membranous. Culms 20–100 cm., erect or ascending from bent base, terete, slender to somewhat stout, puberulent, rarely glabrescent. Panicle 4–10 cm., cylindrical-ovoid to ovoid, erect or nodding, dense to rather lax, pale green, pinkish or purplish; branches short, pubescent. Spikelets 3–5 mm., oblong to elliptical, compressed. Glumes equal, or the upper somewhat larger, membranous, pubescent, ciliate on keel and margins, the lower lanceolate, the upper ovate, with terminal awn up to 1 mm. Lemma 2·0–2·5 mm., lanceolate, acute, smooth, shiny, with a few silky hairs near base; awn up to 2 mm., becoming recurved and hooked when dry; palea ciliate at apex. Anthers 2·0–2·5 mm.
In improved pasture near settlements and introduced into *Empetrum* and *Cortaderia* communities where it appears to be spreading; common.

West Falkland, East Falkland. Introduced; native of Eurasia and north-west Africa. Widely introduced into temperate regions of both hemispheres.

During the last two decades this species has been extensively planted, since it provides extremely useful grazing on soils where more desirable species do not seem to survive. However, it may have been accidentally introduced prior to this.

Specimens. **WF**: TD40 *Vallentin* (MANCH); TD51 *Sladen JB122/10* (BM); TC86 *Sladen 16.xii.1949*†; TC88 *Sladen 18.xii.1949*†; TC99 *Vallentin i.1911* (MANCH); UD11 *Sladen 15.xii.1949*†. **EF**: VC16 *Sladen JB102/14* (BIRM, BM); VC47 *Davies AF9* (K).

14. *Avena* L.

Stout, annual herbs; leaf-sheaths without auricles. Inflorescence a loose, spreading, compound panicle. Spikelets 2- to 3-flowered, terete, pendulous; rhachilla produced beyond uppermost florets, ± silky. Glumes as long as spikelet, awnless, the lower 7-, the upper 9-nerved. Lemma rounded dorsally, 7-nerved, with stout, scabrid, geniculate, dorsal awn from about the middle. Palea 2-nerved, somewhat shorter than lemma, coriaceous. Lodicules lanceolate, acute. Stamens 3; anthers several times as long as wide. Ovary pubescent; styles short, distant.

1.** ***A. fatua L. 1753, *Sp. Pl.*, p. 80. Wild Oat

Marquand, 1923, p. 371.

Leaves 10–45 cm., 3–15 mm. wide; lamina flat, acute, slightly scabrid; sheaths rounded, smooth; ligule 1–4 mm., obtuse, often torn, membranous. Culms 30–90 cm., erect, terete, smooth, glabrous, sometimes hairy at nodes. Panicle 10–25 cm., narrowly to broadly pyramidal, nodding, green; branches clustered, scabrid; pedicels unequal. Spikelets 18–25 mm., oblong when young. Glumes equal or subequal, lanceolate, acuminate, membranous, glabrous. Lemma 14–20 mm., ovate-lanceolate, shortly 2- to 4-fid at apex, coriaceous, hispid in basal half, scabrid above, with dense beard of long, silky hairs near base, the awn 25–40 mm., scabrid; palea subobtuse, pubescent on keels. Anthers *c.* 3 mm.

Waste ground near settlements; rare.

West Falkland. Introduced; native of Eurasia and North Africa but naturalized in cultivated areas of most temperate regions.

Specimens. **WF**: TC99 *Vallentin in 1909–11* (K).

A. sativa L. 1753, *Sp. Pl.*, p. 79, the Cultivated Oat, may be readily distinguished from *A. fatua* by the absence of the long hairs at the base of the lemma and on the rhachilla. It is widely cultivated for fodder in the Falkland Islands, where it rarely ripens.

15. *Koeleria* Pers.

Compact, tufted, perennial herbs; leaf-sheaths without auricles. Inflorescence a narrow, shiny, spike-like panicle. Spikelets 2(–3)-flowered, compressed; rhachilla silky, produced beyond uppermost floret. Upper glume somewhat shorter than spikelet, keeled, awnless, the lower 1-, the upper 3-nerved. Lemma keeled, obscurely 5-nerved, with short subterminal awn. Palea 2-nerved, bifid, membranous, about as long as lemma. Lodicules connate, rather falcate, fimbriate, membranous. Stamens 3; anthers 3–5 times as long as wide. Ovary glabrous; styles short, terminal.

1. ***K. bergii*** Hieron. 1879, *Boln Acad. nac. Cienc. Cordoba*, **3**, p. 376.

Domin, 1906, p. 90; 1907, p. 121; Skottsberg, 1913, p. 14.

K. kurtzii Hack. ex Kurtz 1900, *Boln Acad. nac. Cienc. Cordoba*, **16**, p. 261; Birger, 1907, p. 281.

Leaves 2·5–11·0 cm., 1–2 mm. wide; lamina somewhat convolute, subacute, glabrous to sparsely or more densely pubescent, at least towards base, ciliolate; sheath rounded, with few prominent ribs, pubescent, at least in upper part, often densely ciliate near base; ligule *c.* 0·5–1·0 mm., obtuse to acute, often torn, fimbriate-ciliate, membranous. Culms 3–30 cm., erect, terete, sparsely appressed-pubescent, more densely so near base and below panicle. Panicle 1·5–6·0 cm., cylindrical to cylindrical-ovoid;

branches clustered, ascending, pubescent; pedicels unequal. Spikelets 5–6 mm., obovate-cuneiform. Glumes unequal, acuminate, scabrid on keel, with wide membranous margins, the upper ovate-lanceolate, the lower linear-lanceolate, *c.* two-thirds as long as upper. Lemma 3·5–4·5 mm., lanceolate to ovate-lanceolate, subobtuse, with wide membranous margin, rather strigose at base, scabridulous on keel; awn *c.* 0·5–1·0 mm., straight, slightly scabrid; palea ciliate-scabrid on keels. Anthers *c.* 0·6 mm. Fl. I–II.

Sandy areas by sea; rare.

East Falkland. East Patagonia (lat. 40°48′–50°S.), north-west Argentina (*c.* lat. 27°S.).

Typus. Argentina: Rio Negro; "cerca de Carmen de Patagones", 8.xii.1874. *Berg* (B).

In general habit and spike shape like *Trisetum*, which differs most conspicuously in its long, geniculate lemma-awns.

Specimens. **EF**: VC47 *Birger 25.ii.1904* (S), *Davies BF45, 47* (K).

16. *Trisetum* Pers.

Rather densely tufted, perennial herbs; leaf-sheaths without auricles. Inflorescence a shiny compound panicle. Spikelets 2-flowered, compressed; rhachilla silky, produced beyond upper floret. Glumes rather shorter to rather longer than spikelet, keeled, awnless, the lower 1-, the upper 3-nerved. Lemma strongly keeled, obscurely 5-nerved, deeply bifid, with dorsal geniculate awn from *c.* one-third distance below apex. Palea 2-nerved, deeply bifid, membranous, slightly shorter than lemma. Lodicules lanceolate, minutely 2-lobed, membranous. Stamens 3; anthers 2–4 times as long as wide. Ovary glabrous; styles very short, terminal.

1. ***T. spicatum*** (L.) Richt. 1890, *Pl. Eur.*, **1**, p. 59.

Skottsberg, 1929, p. 305.

T. subspicatum (L.) P. Beauv. 1812, *Ess. Agrostogr.*, p. 88; Hooker, 1847, p. 377; Wright, 1911, p. 334; Skottsberg, 1913, p. 13.

Avena phleoides D'Urv. 1825, *Fl. Is. Mal.*, p. 30; Gaudichaud, 1826, p. 132.

Aira spicata L. 1753, *Sp. Pl.*, p. 63.

Leaves 1–12 cm., 1–3 mm. wide; lamina flat or folded, somewhat subulate at apex, the margins usually involute, midrib usually prominent beneath, glabrous to densely appressed-pubescent beneath, sparsely to densely appressed-pubescent or hairy on upper surface, with few long marginal hairs, pale or greyish green, often purplish distally; sheath rounded, pubescent, rarely subglabrous; ligule 0·5–1·8 mm., obtuse to subacute, usually torn, pubescent, membranous. Culms (2–)5–23 cm., erect, terete, densely appressed-pubescent. Panicle 1·5–7·0 cm., lanceolate-cylindrical, compact, sometimes interrupted or less dense near base, pale purplish green, becoming yellowish when mature. Spikelets 4·5–8·0 mm., lanceolate to obovate-cuneiform. Glumes unequal, the upper somewhat longer, ovate, the lower lanceolate, both acute, shiny, hyaline, scabrid on keel towards apex. Lemma 4·5–5·0 mm., equalling or somewhat exceeding glumes, ovate-lanceolate, densely villous at base, scabrid on keel, the terminal teeth usually scabrid; awn *c.* 3–6 mm., geniculate, often recurved, scabrid; palea ovate-oblong, scabrid on keels. Anthers 0·5–1·5 mm. Fl. I–II. (Fig. 20b)

Sandy or shallow and open soils, especially in dwarf shrub heath, usually by sea; fairly common. 0–275 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia (*c.* lat. 46°10′S.), north on the Andes to lat. 36°48′S., northern Andes (lat. 15°S.–5°N.), New Zealand, south-east Australia, North America, Eurasia.

Typus. In Europe.

Most likely to be confused with *Deschampsia parvula*, which lacks the densely pubescent culms and scabrid apical lemma-teeth, and has the lemma-awn at or below the middle. The Falkland Islands plant has been distinguished as var. *phleoides* (D'Urv.) Hack.

Specimens. **WF**: TC31 *Moore 728b* (K, LTR); TD40 *Moore 903* (BIRM, C, LTR, US), *Skottsberg*, Vallentin in 1909–11*; TD51 *Hamilton JH65* (BM); TC66 *Skottsberg**; TC69 *Vallentin ii.1910* (K); TC79 *Moore 848* (GH, K, LP, LTR, S); TC88 *Skottsberg**; TC99 *Vallentin xii.1910 & i.1911* (K); UC27 *Skottsberg**. **EF**: UC14 *Cunningham 29.i.1868* (K); UC58 *Gibbs 13.ii.1941* (K); UC65 *Skottsberg**; UC69 *Young 2* (LTR); UC71 *Davies AF20* (K); VC09 *Sladen 23, 43/49* (BM); VC46 *Moore 558* (K, LTR); VC47 *Davies AF21, BF46, 17.ii.1938* (K), *Greene 17* (K), *Sladen Fa32/50* (BM); s. loc. *Hooker 7* (K), *Middleton in 1923* (K), *Weir iv.1937* (K).

17. *Agrostis* L.

Tufted or creeping perennial herbs; leaf-sheaths without auricles. Inflorescence an open or contracted compound panicle. Spikelets 1-flowered, terete. Glumes longer than floret, keeled, 1-nerved, awnless or with short terminal awn. Lemma rounded dorsally, 3- to 5-nerved, awnless or with straight dorsal awn. Palea 2-nerved or nerveless, often bifid, membranous, shorter than lemma. Lodicules lanceolate, acute. Stamens 3; anthers 2–4 times as long as wide. Ovary glabrous; styles short, terminal.

1. Leaf-lamina folded or markedly convolute, less than 0·5 mm. wide; palea absent .. **2. *canina***
   Leaf-lamina flat or slightly convolute, more than 0·5 mm. wide; palea present or absent .. 2
2. Spikelets 3·5 mm. or more; glumes usually with short terminal awn; lemma-awn exceeding glumes; palea present or absent .. .. **1. *magellanica***
   Spikelets up to 3·5 mm.; glumes without terminal awn; lemma awnless or with awn not exceeding glumes; palea present 3
3. Panicle contracted in fruit; rhizomes absent .. .. **3. *stolonifera***
   Panicle open in fruit; rhizomes present .. .. **4. *tenuis***

1. *A. magellanica* Lam. 1791, *Tabl. Encycl.*, **1**, p. 160.

Gaudichaud, 1825, p. 100; D'Urville, 1825, p. 30; Hooker, 1847, p. 373; Wright, 1911, p. 333; Skottsberg, 1913, p. 12.

A. antarctica Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 374; Wright, 1911, p. 333.

Loosely tufted. Leaves 4–25 cm., 1·5–3·5 mm. wide; lamina flat, acuminate, scabridulous, sometimes smooth beneath, green, sometimes purple; sheath rounded, distinctly ribbed, glabrous; ligule 3–7 mm., obtuse, fimbriate-serrate, membranous. Culms (10–)15–45 cm., erect or spreading, terete, distinctly ribbed, glabrous or somewhat scabrid towards panicle. Panicle (4–)5–10 cm., oblong to lanceolate-, rarely ovate-, oblong, rather compact, often interrupted or less dense near base, usually nodding, yellowish green tinged with purple; branches and pedicels scabrid. Spikelets 3·5–5·0 mm., oblanceolate to oblanceolate-cuneiform. Glumes subequal, ovate-lanceolate, acuminate, scabrid on keel, membranous, usually with short terminal awn which is longer on lower glume. Lemma 1·8–2·0 mm., *c.* one-third to half as long as glumes, oblong-ovate, 4- to 5-dentate at apex, 4-nerved, glabrous, membranous, with dorsal geniculate awn from about middle; awn *c.* three times as long as lemma, equalling or exceeding glumes; palea nerveless, emarginate, glabrous, subequalling to *c.* one-fifth as long as lemma, or absent. Anthers *c.* 0·6 mm., 2–3 times as long as wide. Fl. XII–II. (Fig. 20i)

Wet or marshy ground, often with *Hierochloë*; fairly common. 0–*c.* 25 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 47°S., ? north-east Argentina, Iles Crozet, Iles de Kerguelen, Prince Edward Islands, Macquarie Island.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TC06 *Davies 26.i.1938* (K); TC31 *Moore 755* (BIRM, C, GH, K, LP, LTR, P, S, US); TC32 *Moore 748b* (C, GH, K, LP, LTR, S); TD40 *Vallentin* (K); TD51 *Gibbs iii.1943* (K); TC68 *Vallentin vii.1910* (K); TC69 *Vallentin iii.1911* (K); TC99 *Vallentin i., ii. & iii.1911* (K). **EF**: UC69 *Young 4* (LTR); VC47 *Gibbs 13.iv.1946* (K), *Davies BF21–23* (K), *Bossière iii.1901* (P); s. loc. *Darwin 526* (CGE), *Weir iv.1937* (K), *Hooker* (BM).

2. *A. canina* L. 1753, *Sp. Pl.*, p. 62. Velvet or Brown Bent

Wright, 1911, p. 333; Skottsberg, 1913, p. 12.

A. falklandica Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 373.

Densely tufted. Leaves 2–7 cm.; lamina filiform, folded or convolute, acuminate, scabrid to glabrous with scabrid margins; sheath rounded, with rather conspicuous ribs, scabridulous or glabrous; ligule 1·4–2·1 mm., obtuse to subacute, torn and ± fimbriate-ciliate. Culms 4–24 cm., erect or spreading, terete, striate, glabrous. Panicle 2·0–4·5 cm., linear to linear-lanceolate, rather compact, brown or purplish brown; branches ascending, sparsely scabrid. Spikelets 3–4 mm., lanceolate to narrowly oblong. Glumes equal, or the upper somewhat shorter, ovate-lanceolate, acuminate, scabrid on keel, membranous. Lemma 2·0–2·5 mm., *c.* two-thirds as long as upper glume, ovate-oblong, finely dentate at apex, 5-nerved, glabrous, membranous, with straight dorsal awn from about middle; awn exceeding lemma by up to 1·5 mm., or absent; palea absent. Anthers *c.* 1 mm., 2–3 times as long as wide. Fl. XII–II. (Fig. 20d)

Most non-aquatic communities, especially dwarf shrub heath; common. 0–460 m.

West Falkland, East Falkland. Fuegia, southern Andean Patagonia, Eurasia, north-east North America.

Typus. In Europe.

The Falkland Islands plant is separated as var. *falklandica* (Hook. f.) Hack., which is most like the European ssp. *montana* Hartm. in having a very contracted panicle but differs in lacking the basal geniculate lemma-awn which exceeds the glumes.

Specimens. WF: TC32 *Moore 767* (K, LP, LTR), *807a* (LP, LTR); TD40 *Moore 904* (LTR); TC79 *Moore 846* (GH, LTR, S), *847* (K, LTR, US); TC83 *Cunningham 31.i.1868* (K); TC99 *Vallentin ii.1911* (K). EF: UC87 *Davies BF19* (K); VC47 *Davies BF8, BF20* (K), *Skottsberg*, Hooker 11* (BM, K), *Wright* (K).

3. *A. stolonifera L. 1753, *Sp. Pl.*, p. 62. Creeping Bent, Fiorin

Birger, 1907, p. 294; Moore and Sladen, 1965, p. 32.

A. prostrata Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 373; Wright, 1911, p. 333; Skottsberg, 1913, p. 12.
A. alba auct.; Hooker, 1847, p. 372; Wright, 1911, p. 333; Skottsberg, 1913, p. 12.
A. caespitosa Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 100; D'Urville, 1825, p. 30; Gaudichaud, 1826, p. 131, 407.

Tufted, spreading by leafy stolons. Leaves 1–10 cm., 0·5–5·0 mm. wide; lamina convolute when young, later flat, acuminate, scabridulous, striate; sheath rounded, smooth or slightly scabrid; ligule 1–6 mm., obtuse, often torn, membranous. Culms 8–40 cm., erect or ascending, bent or prostrate at base, often rooting at lower nodes, terete, smooth. Panicle 1–13 cm., linear to lanceolate or oblong, spreading in flower, contracted later, often dense and interrupted below, green to whitish or purplish; branches clustered, often ascending, scabrid. Spikelets 1·75–3·0 mm., lanceolate to linear-oblong; rhachilla shortly hairy. Glumes equal or somewhat subequal, equalling spikelet, linear- to oblong-lanceolate, acute, scabrid on keel, membranous. Lemma 1·5–2·0 mm., *c.* two-thirds as long as glumes, ovate or oblong, truncate, obscurely 5-nerved, slightly scabrid towards base, membranous, awnless or with short terminal awn; palea half to two-thirds as long as lemma, 2-nerved, slightly bifid or truncate. Anthers 1·0–1·5 mm., 2–3 times as long as wide.

Waste places and along coast near settlements; common.

West Falkland, East Falkland. Introduced; native of Eurasia and North America but widely introduced and naturalized in temperate regions of the Southern Hemisphere.

Specimens. WF: TD40 *Vallentin in 1909–11* (K); TD51 *Sladen 28.v.1949*†. EF: UC65 *Skottsberg**; VC28 *Hooker 13* (K), *Skottsberg**; VC37 *Sladen Fa8/51* (BIRM, BM); s. loc. *Gibbs 13.iv.1946* (K), *Hooker* (BM).

4. *A. tenuis Sibth. 1794, *Fl. Oxon.*, p. 36. Common Bent, Brown Top

Davies, 1939, p. 61–62; Moore and Sladen, 1965, p. 32.

A. vulgaris With. 1796, *Arr. Brit. Pl.*, Ed. 3, **2**, p. 132; Birger, 1907, p. 294.

Tufted, spreading by short rhizomes and sometimes by leafy stolons. Leaves 1–15 cm., 1–5 mm. wide; lamina flat or slightly convolute, acuminate, slightly scabrid; sheaths rounded, smooth; ligule 0·5–2·0 mm., truncate or obtuse, membranous. Culms 10–50(–70) cm., erect or spreading, terete, smooth or sometimes scabrid above. Panicle 1–20 cm., ovoid, cylindrical or pyramidal, spreading, rarely rather dense, green or purplish; branches clustered, spreading, smooth or scabrid. Spikelets 2·0–3·5 mm., lanceolate to narrowly oblong; rhachilla shortly hairy. Glumes equal or the upper somewhat shorter, equalling spikelet, lanceolate, acute, the lower scabrid on keel towards apex. Lemma 1·5–2·5 mm., *c.* two-thirds to three-quarters as long as glume, ovate or elliptical, truncate, with 3–5 small apical teeth, 3- to 5-nerved, scabridulous towards base, very thin, awnless or with short dorsal awn towards apex; palea half to two-thirds as long as lemma, 2-nerved, bifid. Anthers 1·0–1·5 mm., *c.* twice as long as wide.

Waste places and improved pastures near settlements; fairly common.

? West Falkland, East Falkland. Introduced; native of Eurasia but widely naturalized in temperate regions of both hemispheres.

Specimens. EF: VC16 *Sladen JB102/16* (BM); VC37 *Moore 1247* (K, LP, LTR), *Gibbs 30.iii.1943* (K); VC47 *Gibbs 18.iv.1946* (K); s. loc. *Weir iv.1937* (K).

18. *Deschampsia* P. Beauv.

Tufted, glabrous, perennial herbs; leaf-sheaths with auricles. Inflorescence an open or contracted compound panicle. Spikelets (1–)2-flowered, somewhat compressed; rhachilla silky, produced beyond upper floret. Glumes about equalling spikelet, keeled, 1- to 3-nerved, awnless. Lemma rounded, obscurely 5-nerved, truncate and jagged at apex, with straight or geniculate dorsal awn. Palea equalling or slightly shorter than lemma, 2-nerved, bifid, hyaline. Lodicules linear-lanceolate, acute. Stamens 3; anthers 1–5 or more times as long as wide. Ovary glabrous; styles distinct, distant.

1. Ligule less than 3 mm. .. .. **3. *flexuosa***
   Ligule 3 mm. or more 2
2. Panicle open; lemma-awn ± straight .. .. **1. *antarctica***
   Panicle contracted; lemma-awn spirally twisted towards base .. .. **2. *parvula***

1. *D. antarctica* Desv. 1853, in C. Gay, *Fl. Chile*, **6**, p. 338. Antarctic Hair-grass

Wright, 1911, p. 334; Skottsberg, 1954, p. 331.

D. elegantula (Steud.) Parodi 1949, *Darwiniana*, **8**, p. 452.

Aira antarctica Hook., non Forst. f.; Hooker, 1847, p. 377; Skottsberg, 1913, p. 13.

Rather laxly tufted. Leaves 2–15 cm., 0·3–*c.* 1·0 mm. wide; lamina convolute or folded, rarely flat, acute, smooth; sheath rounded dorsally, smooth; ligule 2–6 mm., acuminate, membranous. Culms 4–15 cm., erect, slender. Panicle 3–13 cm., lax and usually spreading, ± pyramidal, greenish, often purple tinged; branches filiform, at least the lower arising 3–6 together. Spikelets 4·0–6·5 mm. Glumes subequal, linear-lanceolate, acuminate, scabridulous on nerves and keel, the upper 3-nerved, the lower 1-nerved. Lemma 1·6–3·5 mm., oblong, irregularly 4-dentate at apex, membranous, with basal tuft of hairs up to one-third (–two-thirds) as long as lemma; awn 5·0–7·5 mm., arising from lower one-third of lemma, straight or curved, sometimes bent about middle, scabrid; palea oblong, scabrid on keels. Anthers 0·25–0·5 mm., *c.* 1–2 times as long as wide. $2n = 26$. Self-compatible and at least usually self-pollinated. Fl. I–II. (Figs. 20l, 21a)

Damp sand or clayey soils by sea or fresh-water ponds; local. 0–*c.* 10 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 43°35′S., north along the Andes to *c.* lat. 34°10′S., east Patagonia, South Georgia, Iles de Kerguelen, South Orkney Islands, South Shetland Islands, South Sandwich Islands, Antarctic Peninsula.

Typus. South Shetland Islands. *Eights* (K!).

Specimens. **WF**: TC06 *Davies BF10* (K); TC32 *Davies BF24* (K); TC50 *Moore 781* (BIRM, C, CHR, GH, K, LP, LTR, P, S, SGO, UC, US); TC99 *Vallentin 14.ii.1911* (K), *Vallentin i.1911* (MANCH). **EF**: UC32 *Skottsberg**; UC65 *Skottsberg**; UC74 *Skottsberg**; VC16 *Sladen JB102/18* (BM); VC36 *Skottsberg**; s. loc. *Hooker* (K), *Weir iv.1937* (K).

2. *D. parvula* (Hook. f.) Desv. 1853, in C. Gay, *Fl. Chile*, **6**, p. 339.

Parodi, 1949, p. 455; Moore, 1967*a*, p. 24.

Aira parvula Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 377; Skottsberg, 1913, p. 13.

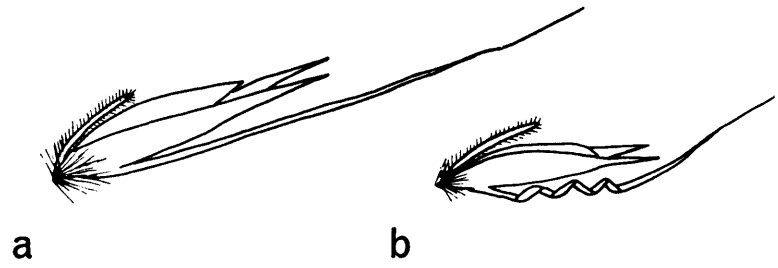


FIGURE 21

Florets of *Deschampsia*.
a. *D. antarctica*. b. *D. parvula*.
Both ×12.

Densely tufted. Leaves 3–6 cm., *c.* 0·5 mm. wide; lamina filiform, subulate, smooth; sheath rounded, smooth; ligule 4–8 mm., acuminate, membranous. Culms up to 15 cm., erect, terete, smooth. Panicle 3–5 cm., cylindrical, contracted, greenish or purplish; branches short, usually ascending. Spikelets 5–7 mm. Glumes subequal, linear-lanceolate, acuminate, scabridulous on nerves and keel, the upper 3-nerved, the lower 1-nerved. Lemma *c.* 2–4 mm., oblong-ovate, irregularly 4-dentate at apex, membranous, with basal tuft of hairs; awn 5–7 mm., arising from lower one-third of lemma, geniculate, spirally twisted in basal part, scabrid; palea oblong, scabrid on keels. Anthers 2–2·5 times as long as wide. Fl. I. (Fig. 21b)

Open sandy or rocky areas by sea and in feldmark on mountain summits; rare. 0–10 and 705 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia (lat. 50°50′S.).

Typus. Chile: Fuegia; Isla Hermite, "rocks near mountain tops", 20.ix.–7.xi.1842. *Hooker* (K!).

Specimens. **WF**: TC06 *Skottsberg**; TC31 *Moore 728a* (GH, K, LP, LTR, S). **EF**: UC77 *Moore 608b* (K, LTR).

3. *D. flexuosa* (L.) Trin. 1836, *Mém. Acad. Sci. Pétersb.*, Ser. 6, **4**, p. 9. Wavy Hair-grass

Wright, 1911, p. 334; Skottsberg, 1913, p. 13; Parodi, 1949, p. 430.

D. macloviana Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 28.

Aira flexuosa L. 1753, *Sp. Pl.*, p. 65; Gaudichaud, 1825, p. 100; 1826, p. 131; D'Urville, 1825, p. 30; Hooker, 1847, p. 375.

Loosely to densely tufted, sometimes with slender rhizomes. Leaves up to 20 cm., 0·3–0·8 mm. wide; lamina setaceous, strongly convolute, acute to obtuse, scabrid towards apex, rather rigid; sheath rounded dorsally, smooth, or scabrid above; ligule 0·5–3·0 mm., obtuse, membranous. Culms 20–100 cm., erect or bent at base, slender, wiry. Panicle 4–15 cm., very lax, purplish, brownish or silvery; branches long, flexuous, somewhat scabrid. Spikelets 4–6 mm., oblong to oblong-cuneiform. Glumes unequal, acuminate, membranous, smooth or somewhat scabrid, the upper longer, elliptic-ovate, 1- to 3-nerved, the lower ovate, 1-nerved. Lemma 3·5–5·5 mm., somewhat shorter than glumes, ovate-oblong to lanceolate, truncate or denticulate at apex, scabridulous, pubescent at base, very thin, with awn from near base; awn exceeding lemma, twisted in basal half; palea lanceolate-oblong, membranous, scabrid on keels. Anthers 2–3 mm., *c.* five or more times as long as wide. Fl. I–II.

Dwarf shrub heath and drier parts of *Cortaderia* grassland; locally common.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 42°32′S., east Patagonia (lat. 51°40′S.), Eurasia, North America.

Typus. In Europe.

Specimens. **WF**: TC32 *Moore 737* (C, GH, K, LP, LTR, P, S, US); TD40 *Vallentin* (K), *Skottsberg**; TC66 *Skottsberg**; TC68 *Skottsberg**, *Vallentin 10.ii.1910* (K, MANCH); TC84 *Cunningham 31.i.1868* (K); TC99 *Vallentin i.1911* (K). **EF**: UC14 *Cunningham 29.i.1868* (K); UC71 *Davies AF11* (K); VC09 *Sladen Fa166/49* (BM); VC28 *Skottsberg**; VC36 *Skottsberg**; VC37 *Booth 41* (LTR); VC47 *Davies 13.i.1938* (K), *Davies AF12* (K), *Gibbs ii.1946* (K); s. loc. *Weir iv.1937* (K), *Middleton in 1921–22* (K), *Abbott in 1860* (K), *Hooker 3* (K), *Coleman in 1903* (MANCH).

19. *Aira* L.

Slender, usually glabrous, annual herbs; leaf-sheaths without auricles. Inflorescence a compound panicle. Spikelets 2-flowered, somewhat compressed; rhachilla not produced beyond upper floret. Glumes equalling or longer than spikelet, slightly keeled, 1(–3)-nerved, awnless. Lemma rounded dorsally, obscurely 5-nerved, finely bifid, with twisted geniculate dorsal awn arising in basal half and projecting beyond glumes. Palea shorter than lemma, 2-nerved, obtuse or bifid, membranous. Lodicules ovate-lanceolate, acute. Stamens 3; anthers scarcely longer than wide. Ovary glabrous; stigmas sessile, subterminal.

Leaf-sheaths smooth; panicle compact, rather narrow and spike-like .. .. .. **1. *praecox***
Leaf-sheaths rough; panicle loose and spreading .. .. **2. *caryophyllea***

1. *A. praecox L. 1753, *Sp. Pl.*, p. 65. Early Hair-grass

Skottsberg, 1913, p. 13; Davies, 1939, p. 61–63; Moore and Sladen, 1965, p. 32–33.

Airopsis praecox (L.) Fr. 1842, *Nov. Fl. Suec. Mantissa*, **3**, p. 180; Birger, 1907, p. 294.

Small, usually tufted. Leaves up to 5 cm., 0·3–0·5 mm. wide; lamina involute, obtuse, smooth or scabrid; sheaths smooth; ligule 2–3 mm., obtuse to subacute, membranous. Culms 2–20 cm., erect,

spreading or prostrate, very slender, glabrous or puberulent. Panicle 0·5–5·0 cm., oblong, spike-like, silvery, purplish or pale green; branches erect, scarcely longer than spikelets. Spikelets 2·0–3·5 mm., ovate to oblong, crowded. Glumes equal, ovate, acute, scabrid on keel, shiny, with thin membranous margins and apex. Lemma slightly shorter than glumes, lanceolate, scabrid towards apex, with tuft of short hairs at base; awn arising *c.* one-third distance from base. Anthers 0·3 mm.

Waste and disturbed ground and coastal slopes near settlements; fairly common.

West Falkland, East Falkland. Introduced; native of southern and western Europe, but widely naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC32 *Moore 807b* (LTR); TC41 *Moore 688* (GH, K, LTR, S); TD51 *Davies AF5* (K), *Hamilton JH64* (BM); TC66 *Vallentin in 1911* (K), *Skottsberg**; TC68 *Vallentin in 1909* (K). **EF**: UC65 *Skottsberg**; UC71 *Davies AF10* (K); UC74 *Bossière iii.–iv.1901* (P); VC37 *Moore 510* (K, LP, LTR); VC47 *Davies BF10* (K), *AF13* (K), *Taylor 199* (BIRM); s. loc. *Weir iv.1937* (K).

2.** ***A. caryophyllea L. 1753, *Sp. Pl.*, p. 66. Silvery Hair-grass

Hooker, 1847, p. 375; Wright, 1911, p. 333; Skottsberg, 1913, p. 13; Davies, 1939, p. 62; Moore and Sladen, 1965, p. 32.

Similar in habit to *A. praecox*. Leaves 0·5–5·0 cm., *c.* 0·3 mm. wide; lamina involute, obtuse, scabrid on nerves; sheath scabrid; ligule up to 5 mm., subacute and somewhat dentate, membranous. Culms 3–40 cm., erect or spreading, very slender, smooth. Panicle 1–12 cm., broadly ovoid, very loose, silvery or purplish; branches very slender, much longer than spikelets. Spikelets 2·5–3·5 mm., ovate to oblong, in small loose clusters at ends of branches. Glumes equal, ovate-lanceolate, acute, scabrid on keel, shiny, thin and membranous. Lemma slightly shorter than glumes, ovate, scabrid towards apex, firm, with tuft of short hairs at base; awn arising *c.* one-quarter distance from base. Anthers 0·3–0·6 mm.

Waste ground around settlements; uncommon.

West Falkland, East Falkland. Introduced; native of Eurasia and North Africa, but naturalized in temperate regions of both hemispheres.

Specimens. **WF**: TC86 *Sladen 16.xii.1949†*; UD11 *Sladen 15.xii.1949†*. **EF**: VC28 *D'Urville* (K); s. loc. *Hooker 20* (K).

20. *Ammophila* Host

Glabrous, rhizomatous, perennial herbs; leaf-sheaths without auricles. Inflorescence a dense, spike-like panicle. Spikelets 1-flowered, large, compressed; rhachilla silky, produced beyond floret. Glumes rather longer than spikelet, keeled, awnless, the lower 1-, the upper 3-nerved. Lemma keeled, 5- to 7-nerved, bifid, with minute subterminal awn. Palea almost equalling lemma, 2(–4)-nerved, acute, keeled, membranous. Lodicules long-acuminate. Stamens 3; anthers *c.* ten times as long as wide. Ovary glabrous; styles short, terminal.

1.** ***A. arenaria (L.) Link 1827, *Hort. Reg. Bot. Berol.*, **1**, p. 105. Marram Grass

Hubbard, 1937, p. 274; Moore and Sladen, 1965, p. 33.

Forming compact tufts with tough, long-creeping rhizomes. Leaves up to 60 cm., up to 6 mm. wide; lamina involute, rigid, pungent, closely ribbed and puberulent on upper surface, smooth beneath, greyish green; sheaths rounded, smooth; ligule 10–30 mm., acuminate, firm. Culms 50–120 cm., erect or spreading, terete, rigid. Panicle 7–20 cm., cylindrical to lanceolate-cylindrical, whitish; branches erect. Spikelets 10–16 mm., narrowly oblong to cuneiform, closely imbricate. Glumes equal to subequal, linear-lanceolate, acuminate, scabrid on keel, membranous, with thin margins. Lemma 8–12 mm., lanceolate, obtuse, with two short bristle-points, scabrid, with fine, white, basal hairs up to one-third length; awn 0·2–0·8 mm., scabrid; palea lanceolate, compressed, ciliate on keel. Anthers 4–7 mm.

Coastal sand dunes; locally common.

West Falkland, East Falkland. Introduced about 1924 (Hubbard, 1937) to stabilize drifting sand; native of west Europe; widely naturalized in temperate coastal regions of both hemispheres.

Specimens. **WF**: TC31 *Moore 723* (BIRM, CHR, GH, K, LP, LTR, S, US); TD51 *Davies BF41* (K). **EF**: UC65 *Corner 340* (LTR); VC47 *Gibbs 8.v.1942* (K), *Sladen Fa5/51* (BIRM, BM).

Tribe ARUNDINEAE

21. *Cortaderia* Stapf

Gynodioecious, tussock-forming, perennial herbs; leaf-sheaths without auricles; ligule represented by a ring of hairs. Inflorescence a large, plume-like panicle. Spikelets 4- to 6-flowered, large, somewhat compressed, with long, white, silky hairs on axis and branches, the upper 1–2 florets sterile and often reduced. Glumes about equalling spikelet, keeled, 1-nerved, with straight, terminal awn. Lemma keeled, 3-nerved, truncate to emarginate, with long, terminal awn. Palea about two-thirds as long as lemma, 2-nerved, bifid, keeled, scarious. Lodicules oblong, obtuse, often ciliate near tip. Stamens 3; anthers 5–6 times as long as wide, much shorter or absent in female flowers. Ovary glabrous; styles short, subterminal.

1. ***C. pilosa*** (D'Urv.) Hack. 1900, in Dusén, *Wiss. Ergebn. schwed. Exped. Magellansländ.*, **3**, No. 5, p. 222. White-grass

Skottsberg, 1913, p. 13; Connert, 1961, p. 118.

Arundo pilosa D'Urv. 1825, *Fl. Is. Mal.*, p. 33; Gaudichaud, 1826, p. 132; Hooker, 1847, p. 375; Wright, 1911, p. 334.

Tussocks low, dense, hemispherical. Leaves 5–22 cm., 1·5–2·5 mm. wide; lamina usually ± convolute, acuminate, often scabrid on nerves beneath, ciliate at base, pale green; sheath rounded, glabrous or sparsely appressed-pilose; ligule a dense fringe of short, white hairs. Culms 15–30 cm., erect, terete or somewhat compressed, smooth, glabrous or with short bristles at some nodes. Panicle 3·5–6·0 cm., ovoid to oblong-ovoid, rather dense, often laxer and interrupted near base, purplish or pale brownish; branches ascending. Spikelets 8–12(–16) mm., obovate to obovate-cuneiform. Glumes ± equal, lanceolate or linear-lanceolate, glabrous, with membranous margin; awn up to one-fifth as long as glume, scabrid. Lemma 3·5–5·0 mm., ovate-lanceolate, with membranous ciliate margin, with long hairs dorsally arising near base and about equalling lemma; awn about as long as lemma, scabrid; palea ovate-lanceolate, scabrid on nerves, ciliate. Anthers 2·5–3·0 mm. $2n = 36$. Fl. XII–I. Both female and hermaphrodite plants seen (see also Connor, 1965, p. 21). (Fig. 20a)

Dominant over large areas except on very swampy or dry shallow soils, and forming association having many facies; abundant. 0–640 m.

West Falkland, East Falkland. Fuegia, west Patagonia (lat. 52°30′S.), Andean Patagonia (lat. 52°35′–47°50′S.), ? southern Chile (*c.* lat. 39°S.).

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P).

Connert (1961) recognized two taxa within *C. pilosa*, restricting *C. pilosa* to the Falkland Islands and south Fuegia, and including plants from Argentina and Chile in *C. minima* Connert.

Specimens. WF: TC32 *Moore 742* (BIRM, C, CHR, GH, K, LP, LTR, P, S, UC, US); TD40 *Vallentin in 1909–11* (K); TC68 *Vallentin i. & ii.1910* (K, MANCH); TC99 *Vallentin xii.1910 & i.1911* (K, MANCH). EF: UC74 *Bossière iii.1901* (P); VC09 *Sladen Fa15/49* (BIRM, BM); VC28 *Lesson* (K); VC37 *Booth 32* (LTR); VC46 *Moore 546* (GH, K, LP, LTR, S); VC47 *Greene 16* (BIRM, K), *Davies A15* (K), *Bossière in 1901* (P); s. loc. *Abbott in 1860* (K), *Hooker 10* (K), *Wright* (K), *Davies AF16* (K).

Tribe PHALARIDAE

22. *Hierochloë* R. Br.

Rhizomatous, perennial herbs; leaf-sheaths without auricles. Inflorescence a nodding panicle. Spikelets 3-flowered, somewhat compressed, the upper floret hermaphrodite or female, the two lower male. Glumes about equalling spikelet, keeled, 1- to 3-nerved, awnless. Lemma keeled, 5(–6)-nerved; awn straight or subterminal in male flowers, shorter or absent in upper flower. Palea usually somewhat shorter than lemma, 2-nerved, bifid, keeled, scarious. Lodicules ovate-lanceolate, shortly 2-lobed. Stamens 3 in male, 2(–3) in upper, flowers; anthers 6–8 times as long as wide. Ovary glabrous, somewhat attenuate; styles long, terminal, connate at base.

1. *H. redolens* (Sol. ex Vahl) Roem. & Schult. 1817, *Syst. Veg.*, Ed. 15, **2**, p. 514. Cinnamon Grass

Wright, 1911, p. 332; Parodi, 1941, p. 189.

H. magellanica (P. Beauv.) Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 375; Skottsberg, 1913, p. 12.
H. antarctica (Labill.) R. Br. var. *redolens* (Sol. ex Vahl) Brongn. 1829, *Voy. Coquille*, p. 144.
Avena redolens (Sol. ex Vahl) D'Urv. 1825, *Fl. Is. Mal.*, p. 30; Gaudichaud, 1826, p. 132.
Holcus redolens Sol. ex Vahl 1791, *Symb. Bot.*, **2**, p. 102.

Forming large, rather lax clumps; rhizomes shortly spreading. Leaves 14·5–35·0(–40·0) cm., 4–7 mm. wide; lamina flat, convolute towards apex, long-acuminate, ciliate-scabrid on margins, glabrous, smooth and shiny green beneath, the upper surface appressed-pubescent towards base, with many narrow scabrid ribs, glaucous; sheath rounded, smooth, glabrous; ligule 1·5–2·0 mm., obtuse, membranous. Culms 30–60 cm., erect or somewhat spreading, slender, terete, glabrous, shallowly ribbed or smooth. Panicle 6–9 cm., ovoid or lanceolate-cylindrical, moderately dense but interrupted, often widely so, and laxer at base, nodding, brownish purple; branches ascending, sparsely appressed-pubescent. Spikelets 8–12 mm., ovate to lanceolate-ovate. Glumes unequal, ovate, acuminate or retuse and shortly mucronate, glabrous or ciliate towards apex, the upper 3-nerved, the lower 1-nerved and slightly shorter. Lemma 4·5–6·5 mm., oblong-ovate, obtuse or shortly bifid, shortly hispid-scabrid, but the hairs longer on keels, rather long ciliate-hispid on margins; awn in male florets *c.* two-thirds as long as lemma, scabrid to sparsely ciliate; palea narrowly oblong, ciliate on nerves. Anthers 3·5–4·0 mm. in male flowers, shorter or rudimentary in upper flower. $2n = 56$. Fl. IX–I(–II). (Fig. 20j)

Damp ground, usually beside running water; fairly common. 0–550 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 50°55'S., Andean Patagonia, Chiloe, Chile north to *c.* lat. 30°S., Ecuador, New Zealand, south-east Australia, ? New Guinea.

Typus. Tierra del Fuego, 20.xii.1774–3.i.1775. *J. R. & G. Forster.*

Australian material has been separated as *H. antarctica* (Labill.) R. Br. by Parodi (1941) and distinguished by its glumes being equal to or shorter than the anthers and its subterminal awn. The latter character is generally typical of Falkland Islands plants and it seems more reasonable to include Australian plants in the present species as has been done by Willis (1962).

Specimens. **WF**: TC32 *Moore 748a* (LTR); TD40 *Moore 906* (LTR), *Vallentin 30.x.1909* (K, MANCH); TC66 *Skottsberg**; TC68 *Vallentin x.1910* (BM, K, MANCH); TC79 *Moore 851* (LTR); TC99 *Vallentin xii.1910* (K); s. loc. *Nichol 59* (BM). **EF**: UC76 *Corner 337a* (LTR); VC09 *Sladen Fa45/49* (BIRM, BM); VC28 *Lesson* (K); VC37 *Sladen Fa11/51* (BM); VC47 *Greene 25* (BIRM, K), *Davies AF23* (K), *BF40* (K); VC48 *Sladen Fa4/49* (BIRM, BM), *Holdgate 611* (BIRM); s. loc. *Weir iv.1937* (K), *Wright* (K), *Hooker* (K), *Coleman in 1903* (MANCH).

23. *Phleum* L.

Tufted, glabrous, perennial herbs; leaf-sheaths without auricles. Inflorescence a dense, spike-like panicle. Spikelets 1-flowered, compressed. Glumes longer than lemma, keeled, 3-nerved, with short terminal awn. Lemma rounded dorsally, obscurely 5- to 7-nerved, awnless. Palea equalling lemma, 2-nerved, obtuse or slightly emarginate, slightly keeled, membranous. Lodicules irregularly obovate, acute to truncate. Stamens 3; anthers 4–5 times as long as wide. Ovary glabrous; styles long, slender, terminal.

1. *P. pratense L. 1753, *Sp. Pl.*, p. 59. Timothy Grass

Birger, 1907, p. 295; Marquand, 1923, p. 371; Davies, 1939, p. 62–63.

Leaves up to 45 cm., 3–9 mm. wide; lamina flat, long-acuminate, glabrous, smooth to ± scabrid; sheaths rounded, smooth, glabrous; ligule *c.* 2–6 mm., obtuse, membranous. Culms 40–100 cm., erect or ascending, terete, smooth. Panicle (1·5–)2·0–10·0×0·5–0·7 cm., cylindrical, dense, green to greyish green or purplish. Spikelets 3–4 mm., oblong. Glumes equal, oblong, truncate, with scabrid terminal awn one-quarter to half as long as glume, with stiff spreading white hairs on keel, the membranous margins scabrid in upper, and softly hairy in lower glume. Lemma half to three-quarters as long as glumes, broadly oblong, truncate and shallowly toothed, glabrous to pubescent, membranous; palea oblong, glabrous. Anthers *c.* 2 mm.

Disturbed ground, waste places and improved pastures near settlements; locally common.

East Falkland. Introduced; an important fodder plant native to north-west and central Europe which has been introduced into most temperate regions of both hemispheres.

Specimens. **WF**: TD40 *Vallentin in 1909–11* (K); TC99 *Vallentin i.1911* (K). **EF**: VC47 *Davies i. & ii.1938* (K); s. loc. *Gibbs* (K).

24. *Alopecurus* L.

Subglabrous, perennial herbs with shortly creeping stems; leaf-sheaths without auricles. Inflorescence a narrow, spike-like panicle. Spikelets 1-flowered, compressed. Glumes equalling or slightly longer than lemma, keeled, 3-nerved, awnless. Lemma keeled, 5-nerved, with straight dorsal awn, the margins connate towards base. Palea absent. Lodicules absent. Stamens 3; anthers 4–6 times as long as wide. Ovary glabrous; styles long-connate below, terminal.

1. ***A. antarcticus*** Vahl 1791, *Symb. Bot.*, **2**, p. 18. Antarctic Foxtail

Skottsberg, 1913, p. 12; Parodi, 1931, p. 351.

A. alpinus Sm. var. *aristatus* Hook. f. 1847, *Fl. Antarct.*, **1**, Pt. 2, p. 370.
A. magellanicus Lam. 1791, *Tabl. Encycl.*, **1**, p. 168; Gaudichaud, 1825, p. 100; 1826, p. 131; D'Urville, 1825, p. 30.
A. alpinus auct., non Sm.; Wright, 1911, p. 333.

Rather slender. Leaves 8–22 cm., 3–6 mm. wide; lamina flat or somewhat involute, long-acuminate, smooth, greenish blue; sheaths rounded, smooth, glabrous; ligule 2·0–3·5 mm., obtuse, often torn, membranous. Culms 30–70 cm., erect, terete, smooth, glabrous. Panicle 1·5–4·0×0·8–1·3 cm., ovoid to cylindrical, silvery-purple. Spikelets *c.* 5 mm., obovate-oblong. Glumes subequal, ovate-lanceolate, acute, with dense, brownish white, appressed hairs. Lemma 3·5 mm., ovate, obtuse to truncate, scabrid towards apex and sparsely appressed-hairy near margins; awn 4–5 mm., arising half to one-third distance from base, slightly exceeding lemma and projecting between glumes. Anthers 2·0–2·5 mm. Fl. XII–I. (Fig. 20h)

Damp places among *Poa flabellata*; rare.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 43°15′S., north along the Andes to *c.* lat. 33°S., South Georgia.

Typus. "ad fretum magellanicum", xii.1767–i.1768. *Commerson.*

Specimens. **WF**: TD40 *Skottsberg**; TC69 *Vallentin xii.1910* (K); UD40 *Davies AF17* (K). **EF**: VC28 *Lesson* (K); s. loc. *Hooker* (K), *Wright* (K).

A. pratensis L. 1753, *Sp. Pl.*, p. 60, Meadow Foxtail, a native of Eurasia, is listed by Davies (1939) and may be introduced and encountered in pastures near settlements. It is readily distinguished from *A. antarcticus* by the acute lemma, which is at most half as long as its awn.

25. *Anthoxanthum* L.

Tufted, perennial herb smelling strongly of coumarin; leaf-sheaths without auricles. Inflorescence a dense, spike-like panicle. Spikelets 3-flowered, compressed, the two lower florets sterile, the upper hermaphrodite. Glumes longer than spikelet, keeled, the lower 1-, the upper 3-nerved, acute or with short terminal awn. Fertile lemma rounded dorsally, 5- to 7-nerved, awnless; sterile lemma rounded dorsally, 3-nerved, with straight or twisted dorsal awn. Palea shorter than to equalling lemma, lanceolate, 1-nerved. Lodicules absent. Stamens 2; anthers 5–7 times as long as wide. Ovary glabrous; styles long, subterminal.

1.** ***A. odoratum L. 1753, *Sp. Pl.*, p. 28. Sweet Vernal-grass

Birger, 1907, p. 295; Moore and Sladen, 1965, p. 32.

Leaves 1–12 cm., 1·5–5·0 mm. wide; lamina flat, acuminate, glabrous or sparsely hairy, smooth or somewhat scabrid; sheath rounded, smooth, glabrous or sparsely hairy, pubescent upwards; ligule 1·5 mm., obtuse, rarely the upper acute, membranous. Culms 10–50 cm., erect or spreading, terete, rather stiff, smooth, glabrous. Panicle 2–6(–10) cm., cylindrical or ovoid-cylindrical, dense to rather lax, sometimes interrupted near base, green or purplish; branches short, hairy. Spikelets 6–9 mm., lanceolate. Glumes unequal, hyaline, pubescent and minutely punctate, the lower ovate, acute, about half as long as

the upper; upper ovate-lanceolate, mucronate. Sterile lemma 3·0–3·5 mm., oblong, emarginate, with brown silky hairs in basal half, the lower with straight awn about as long as lemma in distal half, the upper with a geniculate awn, twisted below and 2–3 times as long as lemma, arising near base. Fertile lemma *c.* 2 mm., semi-suborbicular, subobtuse, smooth, shiny, glabrous. Anthers 3·0–4·5 mm.

Waste ground around settlements; occasional.

West Falkland, East Falkland. Introduced; native of Eurasia but introduced into temperate regions of both hemispheres.

Specimens. **WF**: TC86 *Sladen 16.xii.1949*†. **EF**: VC47 *Davies BF28* (K), *Sladen JB106/5* (BM); s. loc. *Proges in 1920* (BM).

CYPERACEAE

1. *Schoenoplectus* (Rchb.) Palla

Stout, glabrous, perennial herbs. Stems triquetrous, almost leafless, with numerous air canals in transverse section. Inflorescence apparently lateral. Lower bract appearing as continuation of stem beyond inflorescence. Flowers hermaphrodite. Perianth usually of three bristles. Stamens 3. Stigmas 2. Fruit a nut.

1. ***S. riparius*** (Presl) Palla 1888, *Bot. Jb.*, **10**, p. 299.

S. triquetrus auct., non (L.) Palla; Moore and Sladen, 1965, p. 33.
Scirpus riparius Presl 1830, *Reliq. Haenk.*, **1**, p. 193; Skottsberg, 1913, p. 16; Barros, 1935, p. 167.

Rhizome robust, creeping. Stems up to 300 cm., erect, dark green; sheaths thin, membranous, the upper usually with a short lamina. Inflorescence 2–5 cm., with branches 0·5–5·0 cm. Lower bract *c.* three-quarters to one and a half times as long as mature inflorescence. Spikelets many, 5–10 mm., ovoid, reddish brown; pedicels up to *c.* 6 mm. Glumes 4·0–4·5 mm., oblong- to suborbicular-ovate, somewhat emarginate, with terminal mucro up to 1·7 mm., ciliate, hyaline, brownish, with green midrib. Bristles flat, about equalling nut, scabrid. Nut 2·0–2·5 mm., obovoid, compressed, shiny, reddish brown. Fl. I.

Muddy margins of ponds and lagoons near coast; rare.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to lat. 46°10′S., north along the Andes to *c.* lat. 10°S.

Typus. "In Peruvia."

Specimens. **WF**: TC88 *Hamilton JH51* (BM); TC89 *Vallentin i.–iii.1910* (K), *i.1911* (K, MANCH). **EF**: UC83 *Skottsberg**.

2. *Isolepis* R. Br.

Slender, tufted, glabrous, perennial herbs. Stems terete. Leaves few, filiform, channelled. Inflorescence apparently lateral. Lower bract subterete, appearing as continuation of stem beyond inflorescence. Spikelets 1(-3) together. Flowers spirally arranged, hermaphrodite. Perianth-bristles 0. Stamens 2. Stigmas 3; style-base persistent. Fruit a nut.

1. ***I. cernua*** (Vahl) Roem. & Schult. 1817, *Syst. Veg.*, Ed. 15, **2**, p. 106. Nodding Scirpus

I. pygmaea Kunth 1837, *Enum.*, **2**, p. 191; Hooker, 1847, p. 361; Wright, 1911, p. 331.
I. magellanica Gaudich. 1826, *Freyc. Voy.*, p. 414.
Scirpus brevis D'Urv. 1825, *Fl. Is. Mal.*, p. 29; Gaudichaud, 1826, p. 131.
S. setaceus auct., non L.; Gaudichaud, 1826, p. 131.
S. cernuus Vahl 1805, *Enum. Pl.*, **2**, p. 245; Wright, 1911, p. 331; Skottsberg, 1913, p. 16; Barros, 1935, p. 143.

Stems 2–13 cm., filiform. Leaves 1–2, usually shorter than stem. Lower bract shorter or slightly longer, occasionally much longer, than inflorescence. Spikelets 2–5 mm., ovoid. Glumes 1·3–1·8 mm., broadly ovate, mucronate, with hyaline margins, greenish or reddish brown with green midrib or green spot on either side of midrib. Nut *c.* 1 mm., broadly trigonous-obovoid or subglobose, smooth, greyish or reddish brown, rather dull. $2n = 48$. (Fig. 22b)

Moist places near sea, ponds, streams, etc.; abundant. 0–*c.* 300 m.

West Falkland, East Falkland. Virtually cosmopolitan.

Typus. Europe.

Specimens. **WF**: TC40 *Moore 780* (C, CHR, GH, K, LTR, S, US); TC41 *Moore 696* (BIRM, K, LP, LTR, P, UC); TD40 *Skottsberg**; TC66 *Vallentin 307* (K); TC68 *Vallentin 83* (K); TC69 *Vallentin iii.1910* (K, MANCH); TC88 *Sladen Fa92/49* (BM), *Fa119/49* (BIRM, BM); TC99 *Vallentin i. & ii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH), *Nichol 41* (BM), *Vallentin* (BM). **EF**: UC32 *Skottsberg**; UC65 *Skottsberg**; UC76 *Moore 578* (C, K, LTR, US); VC09 *Sladen 44/49* (BM); VC36 *Skottsberg**; VC37 *Greene 38* (BIRM, K); VC47 *Skottsberg**, *Booth 42* (LTR), *Moore 523* (GH, K, LP, LTR, S); VC57 *Sladen Fa4/51* (BM); s. loc. *Havers in 1860* (BM), *Hooker 101* (BM, K), *Weir iv.1937* (K).

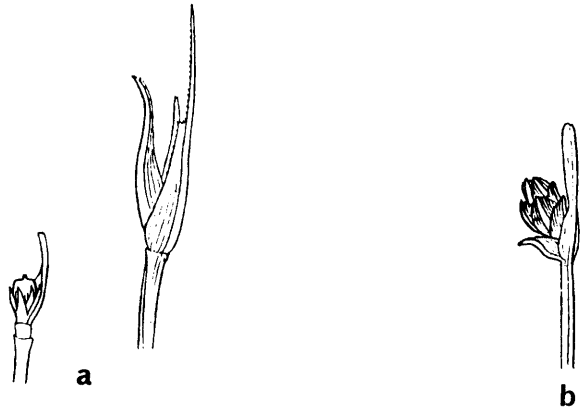


FIGURE 22

Fruiting inflorescences of Cyperaceae.
a. *Oreobolus obtusangulus.* b. *Isolepis cernua.*
All ×4.

3. *Eleocharis* R. Br.

Glabrous, perennial herbs. Stems terete. Sheaths leafless. Spikelet solitary, terminal, many-flowered, the lowest glume usually sterile and differing in shape from the others. Flowers hermaphrodite. Perianth usually of three bristles, shorter than or slightly exceeding nut. Stamens 3. Stigmas 2–3. Style with a swollen persistent base. Fruit a nut.

1. ***E. melanostachys*** (D'Urv.) C. B. Clarke 1901, *Bot. Jb.*, **30**, Beibl. 68, p. 20. Spike-rush

Skottsberg, 1913, p. 16; Barros, 1928, p. 441.

E. macrorrhiza Boeck. 1858, *Flora*, **41**, p. 413; Wright, 1911, p. 331.
E. palustris auct., non (L.) Roem. & Schult.; Hooker, 1847, p. 360.
Scirpus melanostachys D'Urv. 1825, *Fl. Is. Mal.*, p. 29; Gaudichaud, 1826, p. 131.

Rhizome far-creeping, producing clusters or dense stands of stems. Stems (4–)9–45 cm., 1·5–3·0 mm. in diameter, usually reddish at base; sheaths obtuse to subacute, green to yellowish brown. Spikelet 6–17 mm., cylindrical to cylindrical-obconical, dark reddish or brownish purple. Lowest 1(–2) glumes sterile, up to half as long as spikelet but usually much less. Glumes ovate, obtuse to subacute, reddish purple, darker or almost black towards apex, with green midrib, with scarious margins, the lowest often green and purplish only at margins. Stigmas 2. Nut *c.* 1·5–1·8 mm., obovoid, somewhat compressed, yellowish, with short, conical, terminal beak. $2n = 24$. Fl. XII–II. (Plate Vc, d)

Pools, streams and lake margins; fairly common. 0–*c.* 400 m.

West Falkland, East Falkland. Andean Patagonia (lat. 42°30′–43°40′S.).

Typus. East Falkland: Port Louis; "in paludosis", 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **WF**: TC32 *Moore 810* (CHR, GH, K, LTR, S); TC68 *Vallentin 67* (K); TC87 *Sladen Fa98, 105/49* (BM); TC99 *Vallentin i., iii. & xii.1911* (K, MANCH); UC27 *Skottsberg**. **EF**: UC43 *Skottsberg**; UC54 *Moore 619* (C, K, LTR); UC65 *Skottsberg**; UC66 *Moore 641* (BIRM, K, LP, LTR, P, UC, US); UC83 *Skottsberg**; VC28 *Skottsberg**; VC47 *Moore 545* (GH, K, LP, LTR, S); s. loc. *Abbott in 1860* (K), *Hooker 100* (K), *Wright* (K).

E. albibracteata Nees and Meyen ex Kunth 1837, *Enum.*, **2**, p. 143, which occurs from Peru to southern Chile (Valdivia), and can be distinguished from *E. melanostachys* by its smaller spikelets (2–5 mm.) and

three stigmas, was doubtfully reported from Mount Maria in West Falkland by Skottsberg (1913, p. 16). It is quite possible that these were immature plants of *E. melanostachys*, and further collections from the area are necessary.

4. *Oreobolus* R. Br.

Densely tufted, glabrous, perennial herbs, forming low, compact cushions. Leaves densely imbricate, subulate, with conspicuous sheaths. Culm axillary, short, compressed. Spikelet terminal, 1-flowered. Glumes (2–)3–4, deciduous. Perianth of six persistent scales in two whorls. Stamens 3. Style with swollen base; stigmas 3. Fruit a nut.

1. ***O. obtusangulus*** Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 99.

D'Urville, 1825, p. 27; Gaudichaud, 1826, p. 131, 417; Hooker, 1847, p. 360; Wright, 1911, p. 331; Skottsberg, 1913, p. 16.

Cushions *c.* 10–25 cm. in diameter. Stems 5–10 cm., ascending or erect, branched, densely leafy. Leaf-lamina 1–3 cm., acicular-subulate, long-acuminate, channelled on upper surface, rigid, scabrid on margins, glossy green, often brownish towards apex; sheath 0·5–1·0 cm., *c.* three times as wide as lamina, tapering to lamina, ciliate-scabrid on margins, reddish brown, shiny. Culm not exceeding uppermost leaves, compressed, rectangular in cross-section above, smooth or slightly scabrid on angles. Lower glume 4·5–8·0 mm., acicular, keeled, scabrid on margins and keel, pale greenish or yellowish brown in centre and reddish brown towards margins. Perianth-scales 1·4–1·6×0·5 mm., ovate-triangular, acute to long-acuminate, sparsely ciliate, chestnut-brown. Nut 1·0–1·5 mm., pyriform, with raised margin at apex, smooth or with few narrow ribs, dark purplish. $2n = 48$. Fl. (XI–)XII–I. (Fig. 22a)

Astelia communities, wetter parts of *Cortaderia* meadow; common. 0–*c.* 600 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Chiloe (lat. 43°20′S.), the Andes at lat. 36°30′S., ? Andes of Ecuador–Colombia.

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC32 *Moore 749* (BIRM, C, GH, K, LP, LTR, S); TC68 *Vallentin v.1910* (K, MANCH); TC99 *Vallentin ii.1911* (K, MANCH); s. loc. *Blake in 1925–26* (MANCH). **EF**: VC28 *Gaudichaud* (K); VC37 *Davies AF30* (K), *Holdgate 651* (BIRM), *Killingbeck 104* (BIRM); VC47 *Greene 45* (BIRM, K); s. loc. *Antarct. Exped. in 1901–04* (BM), *Havers in 1860* (BM), *Hooker 93* (K).

5. *Uncinia* Pers.

Tufted, glabrous, perennial herbs. Leaf-lamina with ligule at base. Stems solid, usually leafy and ± triquetrous. Inflorescence a solitary, terminal spike, of many 1-flowered spikelets. Flowers unisexual, each subtended by a glume. Male flowers with three stamens; perianth 0. Female flowers surrounded by a compressed, urceolate sac (perigynium) having terminal beak from which project the three stigmas and a long, rigid, exserted bristle with hooked tip, which arises from the base of the ovary within the perigynium. Fruit a trigonous, compressed nut, enclosed in perigynium.

1. ***U. brevicaulis*** Thouars 1808, *Fl. Tristan d'Acugna*, p. 35.

Kükenthal, 1909, p. 52; Skottsberg, 1913, p. 17; Marquand, 1923, p. 370; Moore and Sladen, 1965, p. 31.

U. macloviana Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 99; D'Urville, 1825, p. 27; Gaudichaud, 1826, p. 131, 412; Hooker, 1847, p. 370; Wright, 1911, p. 331.

Shortly creeping. Leaves 10–25 cm., 3–5 mm. wide, shorter than culms; lamina flat, long-acuminate, scabrid on margins; ligule very short, ciliate. Culms 19–40 cm., erect, rigid, ribbed. Spike 3·5–6·5× *c.* 0·4 cm., narrowly cylindrical or slightly obconical-cylindrical, the apical 0·5–1·0 cm. narrower and male, the remainder female. Male glumes 2–3×1·5–2·5 mm., ovate-oblong, rounded-obtuse, ciliate, brown, with pale scarious margins; female glumes 3·5–5·0×2–3 mm., oblong or oblong-lanceolate, obtuse, ciliate, brown, sometimes green near midvein, with pale, scarious apex. Nut 3·5–4·5 mm., equalling or exceeding glume, ellipsoid-ovoid, ± appressed-pubescent and pale brown distally, ± glabrous and paler towards base. Bristle exserted 2–3 mm. above perigynium, slightly curved below hook. $2n = 38$. Fl. XII–II. (Plate VII)

Damp parts of *Cortaderia* meadow; locally fairly common. 3–30 m.

West Falkland, East Falkland. West Patagonia north to *c.* lat. 45°30'S., Andean Patagonia (*c.* lat. 51°S.), southern Chile (*c.* lat. 39°S.), Ile Saint Paul and Ile Amsterdam, Tristan da Cunha.

Typus. Tristan da Cunha. 1780. *Thouars.*

The Falkland Islands plant has been referred to var. *macloviana* (Gaudich.) C. B. Clarke but there appears to be little justification for such a separation.

Specimens. **WF**: TC41 *Moore ii.1964*†; TC51 *Moore 791* (C, GH, K, LP, LTR, S, US); TC52 *Moore 816* (BIRM, C, CHR, GH, K, LP, LTR, P, S, SGO, UC, US); TC78 *Moore 865* (K, LP, LTR); TC99 *Vallentin i. & 14.ii.1911* (K, MANCH). **EF**: UC68 *Moore 668* (LTR); VC28 *Gaudichaud* (K); s. loc. *Sladen 108/11* (BM).

6. *Carex* L.

Perennial, rhizomatous herbs. Stems solid, usually leafy, usually triangular in cross-section. Leaves linear, ± keeled or involute, sometimes flat, the base usually sheathing; sheaths entire; ligule present, all except apical 0·5–1·0 mm. adnate to lamina. Inflorescence of one or more spikes, each of which may be subtended by a bract. Flowers unisexual, in 1-flowered spikelets, each subtended by a glume. Male flowers with 2–3 stamens; perianth absent; female flowers as in *Uncinia* but usually without basal bristle and this, if present, not hooked; ovary trigonous and stigmas 3, or ovary biconvex and stigmas 2. Fruit a trigonous or biconvex nut enclosed in perigynium.

The distribution of male and female flowers in the inflorescence is of taxonomic value in this genus. Usually the terminal spike and often some of the upper lateral spikes are male and the rest female (spp. **1–7**), although the female spikes often have some male flowers distally and the male spike may have female flowers at the base. Other species have male and female flowers in the same spike, the male flowers being either basal (spp. **8–9**) or distal (spp. **10–12**) in the spike.

1. Spike solitary, terminal; leaves filiform, less than 2 mm. wide 2
   Spike 2 or more; leaves flat or keeled, 2 mm. or more wide 4
2. Fruit deflexed when ripe; bristle (rhacheole) present, exserted from perigynium with stigmas .. .. **10. *microglochin***
   Fruit not deflexed when ripe; rhacheole absent 3
3. Stigmas 2; culms 6 cm. or more; leaf-margins scabridulous .. .. **11. *caduca***
   Stigmas usually 3; culms up to 5 cm.; leaf-margins smooth .. .. .. **12. *vallis-pulchrae***
4. Spikes all similar in appearance, the terminal not entirely male 5
   Spikes dissimilar in appearance, the terminal entirely male 7
5. Bracts leafy, much longer than inflorescence .. .. **7. *decidua***
   Bracts glumaceous, much shorter than inflorescence 6
6. Spikes dark brown, crowded into a head; perigynium with serrate wing on margin **9. *macloviana***
   Spikes pale whitish brown, not crowded into a head; perigynium not winged .. **8. *curta***
7. Perigynium pubescent .. .. **4. *aematorryncha***
   Perigynium glabrous 8
8. Leaves 4–12 mm. wide; terminal male spike 35–50 mm.; female glumes with a serrate excurrent midrib 3–8 mm.; perigynium 4–6 mm. .. .. **3. *trifida***
   Leaves 2–4(–6) mm. wide; male spikes 20 mm. or less; female glumes without or with excurrent midrib less than 3 mm.; perigynium less than 4 mm. 9
9. Peduncles 15 mm. or more, usually nodding; female glumes long-acuminate .. **5. *magellanica***
   Peduncles less than 12 mm., erect or nodding; female glumes not long-acuminate 10
10. Male spike 14 mm. or more; female glumes obtuse, not mucronate .. .. .. **7. *decidua***
    Male spike up to 12 mm.; female glumes acute, or obtuse and mucronate 11
11. Peduncles 4 mm. or less; fruit with bifid beak 1–3 mm. 12
    At least lower peduncles more than 5 mm.; fruit with truncate beak less than 1 mm. **6. *flacca***
12. Stigmas usually 2; female glume with midvein at most shortly excurrent; fruit with 3–5 prominent, raised lateral nerves .. .. **2. *acaulis***
    Stigmas 3; female glume with prominent terminal mucro; fruit smooth or with very indistinct lateral nerves .. .. **1. *fuscula***

Subgenus CAREX

Spikes several, unbranched, often pedunculate, dissimilar in appearance, normally unisexual. Peduncles subtended by sterile, often sheathing bracts. Stigmas 2 or 3.

1. ***C. fuscula*** D'Urv. 1825, *Fl. Is. Mal.*, p. 28.

Gaudichaud, 1826, p. 131; Kükenthal, 1909, p. 667; Skottsberg, 1913, p. 17; Barros, 1935, p. 239.
C. indecora Kunth 1837, *Enum.*, **2**, p. 448; Hooker, 1847, p. 367; Melvill, 1903, p. 8; Wright, 1911, p. 332.

Tufted, with rather short rhizome. Leaves 4·5–25·0 cm., 2–6 mm. wide, shorter to longer than culms; lamina flat or somewhat keeled, rather rigid, scabrid on margins and midvein beneath, rather dark shiny green, often yellowish, sometimes rather glaucous; ligule 1·8–4·5 mm., obtuse to truncate; upper sheaths pale yellowish brown, the lower dark brown and rather fibrous. Culms (1–)5–25(–35) cm., trigonous, smooth. Bracts leaf-like, all longer than their spikes, at least the lower exceeding inflorescence. Male spike 1·5–12·0 mm., narrowly cylindrical, often subclavate, subsessile or with erect peduncle up to 4 mm.; male glumes 2·5–7·0 mm. (including mucro), ovate to oblong-ovate, obtuse or acute, mucronate, purplish brown, hyaline, ciliate on mucro. Female spikes 2–4, 8–14 mm., cylindrical or cylindrical-ovoid, on suberect peduncle 2–5 mm., sometimes subsessile, the lower often remote; female glumes 2–3 mm., oblong to oblong-ovate, obtuse or acute, often emarginate when mature, with terminal mucro up to as long as glume, ciliate on mucro and on midvein, purplish brown with green midrib, sometimes entirely green. Stigmas 3. Fruit 2·5–3·5 mm., ovoid, tapering to beak, smooth, golden-brown, with prominent marginal nerve which is often somewhat winged, the lateral nerves indistinct; beak *c.* 1 mm., shortly bifid, rather winged, scabrid. $2n = c.$ 50. Fl. XI–XII(–I). (Fig. 23c, d; Plate VId)

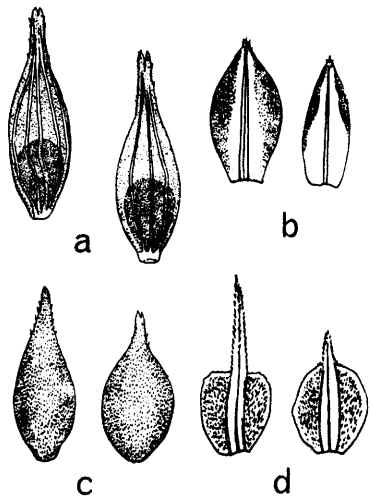


FIGURE 23
Fruits (a, c) and female glumes (b, d) of *Carex acaulis* (a, b) and *C. fuscula* (c, d). All ×6.

Moist areas by sea, often with *Juncus*, and moist parts of *Cortaderia* grassland; common. 0–*c.* 150 m. West Falkland, East Falkland. Fuegia, Andean Patagonia (*c.* lat. 46°20′–48°50′S.).
Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P!).

Specimens. **WF**: TC32 *Moore 712* (CHR, K, LTR); TC51 *Moore 792* (BIRM, K, LTR, P, US); TD51 *Hamilton 63* (BM); TC66 *Skottsberg**; TC68 *Vallentin ii.1910* (K); TD80 *Vallentin ii.1911* (K); TC99 *Vallentin i.1911* (K); UD11 *Sladen Fa72/49* (BM); s. loc. *Blake in 1925–26* (MANCH). **EF**: UC32 *Skottsberg**; UC58 *Moore 654* (GH, K, LTR, S); UC65 *Skottsberg**; UC76 *Moore 577* (K, LTR); UC89 *Gibbs 13.xii.1940* (K); VC09 *Sladen 17, 48/49* (BM); VC19 *Sladen Fa57/49* (BM); VC28 *Gaudichaud* (K), *Sladen JB110/3* (BM); VC36 *Skottsberg**, *Sladen JB104/2* (BM); VC37 *Booth 30* (LTR); VC47 *Moore 532* (K, LP, LTR, P, UC), *1241* (GH, K, LP, LTR, S, US), *Skottsberg**; s. loc. *Hooker 91, s.n.* (BM, K), *Lechler 3294* (K), *Wright* (K).

2. *C. acaulis* D'Urv. 1825, *Fl. Is. Mal.*, p. 29.

Gaudichaud, 1826, p. 131; Hooker, 1847, p. 363; Kükenthal, 1909, p. 669; Wright, 1911, p. 331; Skottsberg, 1913, p. 17; Barros, 1935, p. 253; Moore and Sladen, 1965, p. 31.

Similar to *C. fuscula* but rhizomes usually much longer; culms up to 3 cm., always much shorter than leaves; male glumes 2·0–2·5 mm., ovate, acute or subacute, serrate and scabridulous towards apex, white and scarious with green midvein; female glumes similar to male glumes but up to 5·5 mm., ovate or oblong-ovate, rarely with midvein shortly excurrent; stigmas 2(–3); fruit 2–3 mm., ovoid, tapering to beak, with prominent often somewhat winged marginal nerves, with 3–5 prominent veins on each side; beak up to 3 mm., smooth or sparsely scabrid at tip. $2n = 50$. Fl. XI–XII. (Fig. 23a, b)

Moist sandy ground by sea, moist areas in *Cortaderia* grassland; rare. 0–15 m.

West Falkland, East Falkland. Andean Patagonia (*c.* lat. 40°10′–50°15′S.), ? Fuegia.

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *D'Urville* (P!).

Easily confused with small specimens of *C. fuscula* and perhaps more frequent than at present thought. Mature fruits and female glumes are necessary for certain differentiation of the two species (Fig. 23).

Specimens. **WF**: TC87–88 *Sladen Fa89/49* (BM). **EF**: VC28 *D'Urville 182* (P); VC47 *Moore 1240* (K, LTR).

3. *C. trifida* Cav. 1799, *Icon. Descr.*, **5**, p. 41. Sword-grass

Hooker, 1847, p. 368; Kükenthal, 1909, p. 731; Wright, 1911, p. 332; Skottsberg, 1913, p. 18; Barros, 1935, p. 245.

C. aristata auct., non R. Br.; D'Urville, 1825, p. 27; Gaudichaud, 1826, p. 131.

Rhizome stout, with short stolons. Leaves 15–50 cm., 4–12 mm. wide, usually longer than culms; lamina plicate towards base, towards apex scabrid on margins and veins beneath; ligule 3–6 mm., obtuse; upper sheaths pale yellowish brown, the lower dark brown and rather fibrous. Culms 30–120 cm., trigonous, sometimes scabrid on the angles. Lower bracts leaf-like, exceeding inflorescence, the upper setaceous, longer than their spikes, conspicuously scabrid, brownish. Male spikes 2–4, the terminal one 35–50 mm., the others smaller, all cylindrical and subclavate; male glumes 4–5 mm., ovate to oblong, acute to obtuse, usually deeply bifid, scarious, reddish brown, with whitish midvein excurrent into scabrid awn 3–8 mm. Female spikes 4–6, 20–60 mm., cylindrical to obovoid-cylindrical, the upper congested, with erect peduncles *c.* 3–8 mm., the lower often remote on peduncles up to 50 mm.; pedicels erect, scabrid distally; female glumes similar to male. Stigmas 3. Fruit 4–6 mm., cylindrical to obovoid, tapering to beak, obscurely nerved on faces, smooth, yellowish green, often purplish; beak *c.* 0·5–1·0 mm., shortly bifid, stout, glabrous. Fl. XII–I. (Plate VIa)

Associated with *Poa flabellata* in coastal communities; rare. 0–6 m.

West Falkland, East Falkland. Fuegia, west Patagonia north to lat. 43°35′S., Macquarie Island, New Zealand (South Island), Auckland Islands, Campbell Island, Snares Island.

Typus. West Falkland: Port Egmont. *Née* (M).

Specimens. **WF**: TD40 *Skottsberg**; TD51 *Hamilton JH61, 62* (BM), *Smith 47* (BM); TC84 *Cunningham 31.i.1868* (K); TC99 *Vallentin 250* (K), *i.1911* (MANCH). **EF**: UC14 *Cunningham 29.i.1868* (K); VC48 *Bennett 24.ii.1937* (BM), *Strange* (LTR); s. loc. *Hooker 6, s.n.* (BM, K).

4. *C. aematorryncha* Desv. 1853, in C. Gay, *Fl. Chile*, **6**, p. 224.

Kükenthal, 1909, p. 748; Skottsberg, 1913, p. 17; Barros, 1935, p. 251; Moore, 1967*a*, p. 24.

C. filiformis auct., non Gooden.; Wright, 1911, p. 332.

Rhizome creeping, rather slender. Leaves 13–60 cm., 4–6 mm. wide; lamina flat or somewhat plicate towards base, scabrid on margins and midvein beneath; ligule *c.* 0·5 mm., subacute; upper sheaths brownish green, the lower purplish or darker brown. Culms 20–80 cm., somewhat shorter than to just exceeding leaves, trigonous, scabrid on the angles. Lower bracts leaf-like, exceeding their spike and usually exceeding inflorescence; bracts of terminal spikes setaceous, longer or shorter than their spikes, brown. Male spikes 2–3, 17–35 mm., narrowly cylindrical, often rather trigonous, the lower ones sometimes much reduced; peduncles 2–9 mm., scabrid; male glumes 4·5–6·5 mm., oblong to lanceolate-oblong, acute to obtuse and emarginate, scarious, reddish brown, with paler or greenish midrib excurrent into scabrid awn *c.* 1–2 mm. Female spikes 2–3, 20–30 mm., cylindrical, remote from each other and male

spikes, the uppermost often with male flowers distally; peduncles 2–14 mm., erect or slightly nodding, scabrid; female glumes similar to male but with awn up to 5 mm. Stigmas 3. Fruit 3–5 mm., ovoid, somewhat trigonous, tapering to beak, densely golden- to reddish brown-pubescent; beak up to 1 mm., shortly bifid, stout, ciliate, purplish. Fl. I. (Plate VIb)

Moist areas, particularly in *Cortaderia* grassland; rare. 0–15 m.

West Falkland, East Falkland. Fuegia, west Patagonia (*c.* lat. 45°30′S.), Andean Patagonia, southern Chile (*c.* lat. 36°40′S.), north along the Andes to *c.* lat. 32°S., and ? at lat. 0°10′N.

Typus. Chile: Talcahuano. *Poeppig.*

Falkland Islands plants have been placed in var. *corralensis* (Phil.) Kük., which is distinguished by its more slender culm and narrower leaves and spikes.

Specimens. **WF**: TC68 *Vallentin in 1909–11* (BM, K); TC99 *Vallentin 30.xii.1910* (K), *i. & iii.1911* (K); UC27 *Skottsberg**; s. loc. *Firmin 20* (K). **EF**: UC68 *Moore 667a* (CHR, GH, K, LP, LTR, S); s. loc. *Abbott in 1860* (K).

5. *C. magellanica* Lam. 1792, *Encycl. Méth. Bot.*, **3**, p. 385.

Hooker, 1847, p. 365; Birger, 1907, p. 281; Kükenthal, 1909, p. 505; Skottsberg, 1913, p. 18; Barros, 1935, p. 230.

Rhizome usually shortly creeping. Leaves (6·5–)10·0–30·0 cm., 2–3 mm. wide; lamina flat, scabrid on margins and distally on midvein beneath; ligule 4–5 mm., acute; sheaths purplish to pale brown. Culms 10–30 cm., equalling or exceeding leaves, trigonous, smooth, somewhat nodding. Bracts leaf-like, the lowest longer than inflorescence; peduncles 15–30 mm., slender, smooth, usually nodding. Male spike 1, 10–20 × 2–3 mm., narrowly cylindrical; male glumes *c.* 4 mm., lanceolate, acute or subacute, reddish brown. Female spikes 2–3, 6–15 × 4–8 mm., ovoid to oblong-ovoid, nodding; female glumes ovate-lanceolate, long-acuminate, smooth, 3-nerved, purplish brown, caducous. Stigmas 3. Fruit *c.* 3 mm., much wider than glume, ovoid or subglobose, trigonous, compressed, obtuse, with very short emarginate beak, minutely papillose, brownish green. ? Fl. I. (Plate VIc)

Wet areas at creek margins; rare.

East Falkland. Fuegia, west Patagonia (lat. 53°25′S.), Andean Patagonia north to *c.* lat. 40°10′S., circumboreal.

Typus. Straits of Magellan, xii.1767–i.1768. *Commerson* (P).

Southern Hemisphere plants belong to ssp. *magellanica* while the circumboreal populations are separated as ssp. *irrigua* (Wahlenb.) Hultén.

Specimens. **EF**: VC47 *Birger in 1904* (S).

6. *C. flacca Schreb. 1771, *Spic. Fl. Lips., Appendix*, [p. 178]. Carnation-grass

Moore and Sladen, 1965, p. 33.

Rhizome shortly creeping. Leaves 3·5–9·0 cm., 2–4 mm. wide; lamina slightly keeled, scabrid on margins and midvein beneath, pale green on upper surface, glaucous beneath; ligule 1·5–2·0 mm., obtuse; lower sheaths reddish brown, leafy. Culms 7–15 cm., exceeding leaves, trigonous to subterete, smooth. Bracts leaf-like, the lower usually equalling or exceeding inflorescence. Male spikes 1–2, 6–11 × 2 mm., narrowly cylindrical, somewhat clavate, erect; male glumes 3·5–4·0 mm., linear-obovate, rounded to subacute, reddish brown, with pale midvein and white scarious margins. Female spikes (1–)2(–3), 10–20 × 2–4 mm., oblanceolate-cylindrical, flowers rather remote towards base, often male distally; peduncles 3–10 mm., slender, slightly scabrid, erect or nodding; female glumes 2·5–4·0 mm., oblong-ovate, acute or mucronate, purplish brown with paler hyaline margins and the midvein often pale. Stigmas 3. Fruit *c.* 2 mm., rather wider than glume, obovoid-ellipsoid, somewhat trigonous, minutely papillose, purplish or reddish brown; beak very short, stout, truncate. Fl. XI–I. (Plate VIf)

Shallow soil in drier parts of *Empetrum* heath; rare. *c.* 3 m.

East Falkland. Introduced; native of Eurasia and North Africa, introduced into other temperate regions of both hemispheres.

Specimens. **EF**: VC46 *Holdgate 624* (BIRM), *Moore 557* (C, GH, K, LP, LTR, S).

7. *C. decidua* Boott 1846, *Trans. Linn. Soc. Lond. Botany*, **20**, p. 119.

Hooker, 1847, p. 363; Kükenthal, 1909, p. 306; Wright, 1911, p. 332; Skottsberg, 1913, p. 17; Barros, 1935, p. 214; Moore and Sladen, 1965, p. 31.

Rhizome creeping, rather slender. Leaves 15–35 cm., 2–3 mm. wide; lamina flat or somewhat keeled, scabrid on margins and midvein beneath, especially distally; ligule 3–5 mm., obtuse; sheaths pale green to straw-coloured, slightly shiny, leafy. Culms 15–30 cm., shorter to longer than leaves, trigonous, scabrid on angles distally. Bracts leaf-like, the lower two distinctly exceeding inflorescence. Male spike 1, 14–20 × 2·5–3·0 mm., oblanceolate-cylindrical, erect, often with some female flowers present; male glumes 3·5–4·0 mm., oblong to ovate-oblong, obtuse, purplish brown, with green midvein. Female spikes 3–6, 12–22 × 4–6 mm., cylindrical, erect on short smooth peduncles, the lowest often rather remote; female glumes 3·0–3·5, oblong-ovate, obtuse, brownish purple to blackish with green midvein. Stigmas 2. Fruit 2·5–3·5 mm., longer and wider than glumes, oblong-ovate, compressed, abruptly narrowed to beak, 5- to 7-nerved on outer face, minutely papillose, green; beak short, stout, truncate or slightly emarginate. Fl. XII–I. (Plate VIe)

Wet areas at creek margins; rare.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 45°55′S.

Typus. Tierra del Fuego, 14.–20.i.1769. *Banks and Solander* (BM).

Specimens. **WF**: TC32 *Moore 710* (BIRM, C, CHR, GH, K, LP, LTR, P, S, US); TC87 *Sladen Fa99/49* (BM); TC99 *Vallentin i.1911* (K, MANCH). **EF**: s. loc. *Hooker 90, s.n.* (BM, K).

Subgenus VIGNEA (P. Beauv.) Kük.

Spikes several, often branched, sessile, all ± similar, usually with male and female flowers, rarely the upper or lower unisexual. Peduncles subtended by usually small bracts. Stigmas 2.

8. ***C. curta*** Gooden. 1794, *Trans. Linn. Soc. Lond. Botany*, **2**, p. 145. White Sedge

Hooker, 1847, p. 363; Wright, 1911, p. 332; Moore and Sladen, 1965, p. 31.

C. skottsbergii Gandoger 1913, *Bull. Soc. bot. Fr.*, **60**, p. 27.
C. canescens auct., non L.; Kükenthal 1909, p. 216; Skottsberg, 1913, p. 17; Barros, 1935, p. 211.
C. similis D'Urv. 1825, *Fl. Is. Mal.*, p. 28; Gaudichaud, 1826, p. 131.

Tufted, glabrous, with shortly creeping rhizomes. Leaves 10–30 cm., 2–3 mm. wide; lamina almost flat, scabridulous on margins and midvein beneath, especially distally, pale green; ligule 2·5–3·0 mm., obtuse to subacute; lower sheaths leafless, rather fibrous, brown. Culms 12–25 cm., usually equalling or exceeding leaves, triquetrous, scabrid on angles, especially distally. Bracts usually shorter than spike, resembling the glumes but with scabrid midvein and the lower with prominent scabrid seta. Inflorescence 9–30 mm.; spikes (2–)4–8(–10), 5–9 mm., ovoid, ± remote. Male glumes 2·0–2·5 mm., oblong-obovate to sub-orbicular, cuspidate, hyaline, pale brownish, usually with green midvein; female glumes similar. Fruit 2·0–2·5 mm., equalling glume, ovoid, plano-convex, gradually narrowed to beak, pale yellowish green; beak *c.* 0·5 mm., emarginate, sparsely scabrid, brownish. $2n = 56$. Self-compatible. Fl. XII–I. (Plate VIh)

Wet places beside creeks and in wetter parts of *Cortaderia* grassland; fairly common. 0–*c.* 150 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia north to *c.* lat. 42°40′S., south-east Australia, New Guinea, circumboreal.

Typus. Europe.

The southern American populations have been separated as var. *robustior* Blytt ex Anderson.

Specimens. **WF**: TC32 *Moore 711* (BIRM, C, CHR, GH, K, LP, LTR, P, S, US); TC68 *Vallentin 72* (K); TC87 *Sladen Fa100/49* (BIRM, BM); TC88 *Moore 872* (C, GH, K, LP, LTR, S); TC99 *Vallentin i. & iii.1911* (K, MANCH). **EF**: UC65 *Skottsberg**; UC68 *Moore 669* (LTR); UC74 *Skottsberg**; VC36 *Skottsberg**; VC37 *Moore 562* (C, GH, K, LP, LTR, P, S, UC, US); VC47 *Skottsberg**; s. loc. *Abbott in 1860* (K), *Hooker* (BM, K).

9. ***C. macloviana*** D'Urv. 1825, *Fl. Is. Mal.*, p. 28.

Gaudichaud, 1826, p. 131; Kükenthal, 1909, p. 195; Skottsberg, 1913, p. 17; Barros, 1935, p. 208.

C. ovalis auct., non Gooden.; Hooker, 1847, p. 363.
C. leporina auct., non L.; Wright, 1911, p. 332.

Tufted, glabrous, with shortly creeping rhizomes. Leaves 3·5–10·0 cm., 2–3 mm. wide; lamina flat or somewhat keeled near base, rather rigid, scabrid on margins and midvein beneath, bright green; ligule 1·5–2·5 mm., subacute to obtuse; lower sheaths leafless, rather fibrous, brown. Culms 7–30 cm., usually much exceeding leaves, trigonous, scabrid on angles distally. Bracts shorter than spike, resembling glumes

but usually with short scabrid seta. Inflorescence 10–25 mm., ± ovoid, spikes 4–9, sessile, congested. Male glumes 3·0–3·5 mm., ovate, acute to shortly acuminate or subobtuse, hyaline, brownish, with pale, often green, midvein and paler margins; female glumes similar but often ovate-lanceolate. Fruit 3·0–4·5 mm., longer and wider than glumes, elliptic-ovate, narrowed to beak, plano-convex, with narrow wing, ciliate and serrulate on margins distally, distinctly nerved, light brown; beak *c.* 1·0–2·5 mm., bifid, scabrid. Fl. I. (Plate VIg)

Damp places in *Cortaderia* meadows; rare. 0–*c.* 30 m.

East Falkland. Fuegia, Andean Patagonia, north along the Andes to lat. 36°48′S., North America, arctic-alpine Eurasia.

Typus. East Falkland: Port Louis; "in apricis", 20.xi.–18.xii.1822. *D'Urville* (P).

Specimens. **EF**: UC43 *Skottsberg**; UC65 *Skottsberg**.

Subgenus PRIMOCAREX Kük.

Spike solitary, terminal, monoecious or dioecious; rhachilla often present. Bracts absent. Stigmas 2 or 3.

10. ***C. microglochin*** Wahlenb. 1803, *K. svenska VetenskAkad. Handl.*, **24**, p. 140.

Kükenthal, 1909, p. 108; Birger, 1907, p. 284; Skottsberg, 1913, p. 18; Barros, 1935, p. 190; Moore, 1967*a*, p. 24.

Glabrous, with slender, shortly creeping rhizome. Leaves 3–9 cm., *c.* 0·5 mm. wide; lamina flat to filiform, shallowly channelled on upper surface, rather obtuse, rigid, smooth; ligule *c.* 1 mm., subacute to truncate; lower sheaths leafless or almost so, rather fibrous, brown. Culms 7–15 cm., much exceeding leaves, subterete, channelled towards base and ridged distally. Spike 6–8 × *c.* 4–5 mm., cylindrical to subovoid, 3- to 6-flowered, monoecious, male distally. Male glumes *c.* 3 mm., lanceolate, subacute to obtuse, reddish brown, with pale midrib and pale hyaline margins; female glumes rather shorter, oblong-ovate, obtuse, reddish brown, with pale midrib, with hyaline margins and apex, caducous. Stigmas 2. Fruit 4–6 mm., narrowly conical and rather curved, obscurely ribbed, brownish yellow, with stout, smooth, brown bristle projecting for up to 2 mm. beyond the tip of the perigynium; peduncle short and deflexed when fruit ripe. Fl. XII–I. (Plate VIj)

Wet areas with *Rostkovia* and *Juncus scheuzerioides*; rare. 15–*c.* 150 m.

West Falkland, East Falkland. Fuegia, west Patagonia (lat. 53°25′S.), Andean Patagonia (*c.* lat. 49°S.), north-east Argentina (*c.* lat 29°S.), North America, northern Eurasia.

Typus. Northern Europe.

Southern Hemisphere plants have been distinguished as var. *oligantha* (Boott) Kük., with generally fewer flowers and longer fruits than northern specimens, but the differences are not at all constant.

Specimens. **WF**: TC88 *Moore 873* (BIRM, C, CHR, GH, K, LP, LTR, S). **EF**: VC36 *Sladen Fal0/50* (BM); VC47 *Skottsberg**.

11. ***C. caduca*** Boott 1867, *Illustr.*, **4**, p. 157.

Skottsberg, 1913, p. 17; Barros, 1935, p. 188; Moore, 1967*a*, p. 24.

Tufted, glabrous, with shortly creeping rhizome. Leaves 3–20 cm., *c.* 1 mm. wide; lamina rather filiform, channelled, curved, rigid, scabridulous on margins; ligule *c.* 0·5 mm., rounded; lower sheaths leafless, rather fibrous, brown or reddish brown. Culms 6–28 cm., subequalling to exceeding leaves, terete below, subtrigonous distally, shallowly ridged. Spike 6–10 × 5–7 mm., ovoid-globose, 10- to 16-flowered, usually male distally. Male glumes 3·0–3·5 mm., ovate-lanceolate, subacute to obtuse, shortly apiculate, hyaline, reddish brown with paler midvein; female glumes often caducous, similar to male but usually wider and with prominent, pale, scabrid, terminal awn rather bract-like in the lower 1–2 flowers and usually much exceeding the spike. Stigmas 2. Fruit 3·0–3·5 mm., larger than glumes, ovoid, tapering to beak, plano-convex, smooth, greenish brown; beak emarginate, smooth or slightly scabrid; peduncle *c.* 1 mm., erect. Fl. XII–II. (Plate VIi)

Wet areas, beside creeks and in *Cortaderia* grassland, with *Rostkovia* and *Juncus scheuzerioides*, wet mountain ledges; local. 0–580 m.

West Falkland, East Falkland. Fuegia, Andean Patagonia (lat. 49°S.).

Typus. Tierra del Fuego: Isla Hoste; Bahía Orange, in 1839. *Wilkes Exped.* (GH, isotype K!).

Falkland Islands plants have been included in var. *ortegae* (Phil.) Kük., which is larger than the typical plant and with the fruits exceeding the glumes (Kükenthal, 1899, p. 497). Falkland Islands specimens differ from all other material seen in the smooth or only slightly scabrid beak.

Specimens. **WF**: TC42 *Moore 815* (BIRM, GH, K, LP, LTR, S); TC88 *Moore 882* (CHR, GH, K, LP, LTR, S), *874* (C, K, LTR, P, UC, US). **EF**: UC65 *Skottsberg**; UC68 *Moore 667b* (LTR); UC69 *Skottsberg**; UC74 *Skottsberg**; UC76 *Skottsberg**; VC19 *Sladen Fa58/49* (BIRM); VC28 *Sladen Fa39/49* (BM); VC47 *Skottsberg 98* (K).

12. ***C. vallis-pulchrae*** Phil. 1896, *An. Univ. Chile*, **93**, p. 487.

Birger, 1907, p. 291; Kükenthal, 1909, p. 100; Skottsberg, 1913, p. 18; Barros, 1935, p. 188.

Like *C. caduca* but culms and leaves not exceeding 5 cm., leaf-margins smooth; seta of basal glumes not scabrid; stigmas usually 3; beak of fruit never scabrid. Fl. XII.

Loose drifting sand and drier parts of *Empetrum* heath; very rare.

East Falkland. Fuegia, Andean Patagonia (lat. 52°30′S.), Andes (*c.* lat. 33°–36°S.).

Typus. Chile: Colchagua; Valle Hermoso, ii.1872. *Ortega* (SGO, isotype K!).

Although the above characters serve to distinguish the very few specimens of this species seen from the more abundant material of *C. caduca*, none of the characters can be considered completely reliable and the validity of distinguishing *C. vallis-pulchrae* as a distinct species must remain in doubt until more collections are available.

Specimens. **EF**: VC47 *Birger 25.ii.1904* (S).

ORCHIDACEAE

1. *Chloraea* Lindl.

Perennial herbs, with short rhizome and fleshy roots. Stem simple, leafy. Leaves spirally arranged, with overlapping bases, simple. Inflorescence a terminal spike. Flowers hermaphrodite, strongly zygomorphic, subtended by large, leaf-like bracts. Perianth-segments in two whorls of three, all petaloid; outer whorl free; median segment (labellum) of inner whorl directed downwards, wider than others and simple to indistinctly 3-lobed. Stamen 1; anther 2-celled, the pollen adhering in 1–4 granular masses (pollinia). Stigmas 3, 2 fertile, the other sterile and forming a ± beak-like process (rostellum) between anther and fertile stigmas. Stigmas and anther sessile on summit of long, erect, axial structure (column). Ovary inferior, 1-celled; ovules numerous. Fruit an erect capsule opening by three longitudinal slits; seeds minute, with endosperm.

1. ***C. gaudichaudii*** Brongn. 1834, *Voy. Coquille*, p. 189.

Hooker, 1847, p. 350; Skottsberg, 1913, p. 23.

C. falklandica Kraenzlin 1910, *Bot. Jb.*, **44**, Beibl. 101, p. 5; Wright, 1911, p. 328.

Arethusa lutea Gaudich. 1825, *Annls Sci. nat.*, **5**, p. 101; D'Urville, 1825, p. 35; Gaudichaud, 1826, p. 133.

Stem 14–30 cm., erect, fleshy. Leaves 4–10 × 1·2–2·0 cm., oblong to ovate-oblong, acute, entire, dark shiny green, the upper often pinkish. Bracts 25–35 × 7–12 mm., ovate-oblong, acute to acuminate, green, often whitish with green veins distally. Outer perianth-segments 14–16 × 3–5 mm., oblong to oblong-ovate, acute to subobtuse, often slightly cucullate at apex, pale green with darker green veins, membranous; two upper inner perianth-segments similar to outer whorl; labellum 8·5–10·5 × 4–8 mm., ovate in outline, entire or indistinctly 3-lobed with the lateral lobes having irregularly lacerate margins and the median lobe longer, subobtuse, somewhat cucullate, entire, covered with greenish papillae. Column *c.* 7 mm. Capsule 20–25 × 7–10 mm., cylindrical-ovoid. Self-compatible, usually cleistogamous.

Moist places in *Cortaderia* and *Empetrum* associations; locally common.

West Falkland, East Falkland. Andean Patagonia (lat. 41°S.), southern Chile (lat. 40°S.).

Typus. East Falkland: Port Louis, 14.ii.–28.iv.1820. *Gaudichaud* (P).

Specimens. **WF**: TC87 *Sladen Fa126/49* (BM); TC96 *Sladen 129/49* (BM); TC99 *Skottsberg**, *Vallentin ii.1911* (MANCH); UC19 *Booth 77* (LTR); s. loc. *Vallentin in 1909–11* (K). **EF**: VC28 *Sladen Fa79/49* (BM); VC47 *Moore*†, *Skottsberg**; s. loc. *Newnham* (K), *Wright* (K).

2. *Gavilea* Poepp.

Like *Chloraea* but labellum always distinctly 3-lobed, column less than 6 mm., and central or central and lateral stigmas fertile.

Flowers white with green nerves; labellum as long as or slightly longer than wide, the terminal lobe 3·5 mm. or more wide; lateral outer perianth-segments abruptly narrowed and thickened distally .. .. **1. *australis***

Flowers yellow with green nerves; labellum usually wider than long, the terminal lobe up to 3 mm. wide; lateral outer perianth-segments not abruptly narrowed and thickened distally .. **2. *macroptera***

1. *G. australis* (Skottsb.) Correa 1956, *Boln Soc. argent. Bot.*, **6**, p. 77.

Correa, 1966, p. 65.

Asarca commersonii auct., non Brongn.; Hooker, 1847, p. 351, *pro parte*; Wright, 1911, p. 329, *pro parte*.
A. australis Skottsb. 1913, *K. svenska VentenskAkad. Handl.*, **50**, No. 3, p. 22; Skottsberg, 1924*b*, p. 222.

Stem 20–40 cm., sometimes leafy only in basal half. Basal leaves in rosette, 5–7 × 2·5–3·0 cm., ovate to ovate-oblong, acute, tapering to wide, sheathing petiole; cauline leaves narrower. Lower bracts 22–27 × 3–5 mm., linear-lanceolate, decreasing upwards. Flowers 3–10, white with green nerves. Upper outer perianth-segment 12–14 × 6–7 mm., ovate, acuminate; lateral segments 15–16 × 3·5–*c.* 5·0 mm., obliquely lanceolate, abruptly contracting at apex to thickened tube *c.* 5 mm. Upper inner perianth-segments *c.* 10 × 4 mm., ovate, obtuse, sparsely papillose on nerves in basal half. Labellum 8–10 × 8–12 mm., as long as or slightly longer than wide, subcordate; lateral lobes suborbicular, with lacerate outer margins; median lobe 3·5–4·0 mm. wide, oblong-ovate, subacute, with thickened and glandular-lacerate margins, papillose in basal half to two-thirds. Column 5–6 mm.; stigmas 3. Capsule ovoid-oblong. Fl. XII–I.

Clay cliffs beside sea; rare. *c.* 3 m.

West Falkland. Fuegia.

Typus. Tierra del Fuego. *Dusén.*

Specimens. **WF**: TC88 *Sladen 127/49* (BIRM, BM), *128/49* (BM); TC99 *Skottsberg**; *Abbott in 1860* (K), *Hennis* (BM), *Vallentin in 1909–11* (K).

2. *G. macroptera* (Kraenzlin) Correa 1956, *Boln Soc. argent. Bot.*, **6**, p. 82.

Asarca littoralis (Phil.) Reiche 1910, *An. Mus. Nac. Chile Bot.*, No. 18, p. 16; Skottsberg, 1924*b*, p. 216; Correa, 1956, p. 85.
A. macroptera Kraenzlin 1903, *Orchid. Gen. Spec.*, **2**, p. 38; Skottsberg, 1913, p. 21.
A. odoratissima auct., non Poepp. & Endl.; Hooker, 1847, p. 351; Wright, 1911, p. 329.
Chloraea gaudichaudii auct., non Brongn.; Vallentin and Cotton, 1921, pl. 54.

Similar in habit to *G. australis*. Flowers yellow with green nerves. Upper outer perianth-segment 10–14 × 4·0–5·5 mm., oblong to lanceolate, acuminate; lateral segments 11–15 × 4–6 mm., obliquely oblong-lanceolate, rather abruptly acuminate. Upper inner perianth-segments 9–11 × 3·0–5·5 mm., oblong, obtuse or usually retuse. Labellum 8–9 × (6–)10–11 mm., usually wider than long, broadly ovate; lateral lobes ± oblong, obtuse, entire; median lobe 2–3 mm. wide, oblong to lanceolate, obtuse, obscurely sinuate, densely papillose. Column *c.* 5 mm.; stigma solitary. Capsule ovoid. Fl. XII–I.

Clay cliffs beside sea; locally common.

West Falkland. Fuegia, Southern Chile (lat. 39°52′S.).

Typus. Chile: Prov. Valdivia; bei Corral.

According to Dra. M. N. Correa (personal communication, 1968), the correct name for this species appears to be *Gavilea littoralis* (Phil.), and she will publish the combination in a forthcoming volume of *Flora Patagonica.*

Specimens. **WF**: TD40 *Skottsberg**; TC68 *Vallentin in 1909* (K, MANCH); TC69 *Skottsberg**; TC88 *Vallentin* (K); TC99 *Vallentin ii.1911* (K, MANCH); s. loc. *Abbott in 1860* (K), *Blake in 1925–26* (MANCH), *Snyder 18.xii.1852* (CU), *Vallentin in 1909–11* (K).

3. *Codonorchis* Lindl.

Glabrous, perennial herbs, with tuberous rhizome. Stem simple, with whorl of 2–4 leaves at or above the middle. Leaves simple. Flower solitary, terminal, zygomorphic, subtended by one bract. Outer

perianth-segments equal, free, spreading, the inner much shorter, erect. Labellum simple, free, spurless, sessile. Anther solitary. Stigmas 3, two fertile, the other sterile and forming a ± beak-like process (rostellum) between anther and fertile stigmas. Stigmas and anther sessile on summit of erect axial structure (column). Ovary inferior, 1-celled; ovules numerous. Fruit an erect capsule opening by three longitudinal slits; seeds numerous.

1. ***C. lessonii*** (D'Urv.) Lindl. 1840, *Gen. Spec. Orchid.*, p. 411.

Hooker, 1847, p. 351; Skottsberg, 1913, p. 24; Vallentin and Cotton, 1921, pl. 53.
Pogonia lessonii (D'Urv.) Melvill 1903, *Mem. Proc. Manchr lit. phil. Soc.*, **47**, No. 10, p. 7.
P. tetraphylla Poepp. & Endl. 1837, *Nov. Gen. Sp. Pl.*, **2**, p. 16; Wright, 1911, p. 328.
Calopogon lessonii (D'Urv.) Brongn. 1834, *Voy. Coquille*, p. 188.
Epipactis lessonii D'Urv. 1825, *Fl. Is. Mal.*, p. 36; Gaudichaud, 1826, p. 133.

Stem 9–25 cm., erect, or somewhat nodding in fruit, fleshy, bearing pinkish, membranous scale-leaves in basal half. Leaves (2–)3(–4) in a whorl, (9–)18–27 × (6–)12–18 mm., broadly ovate, subacute, cuneate at base, entire, shiny green, sessile or subsessile. Bract 7–10 × 2–6 mm., ovate, acute, equalling ovary. Outer perianth-segments 8–17 × 3·5–7·0 mm., ovate-lanceolate, acute, white, often with greenish mid-nerves, and purplish towards base. Lateral inner perianth-segments 6–13 × 3–5 mm., ovate-lanceolate, acute or obtuse, of similar colour to outer segments but usually with conspicuous purplish blotches. Labellum 5–9 × 3·0–6·5 mm., ovate-lanceolate, subacute or subacuminate to obtuse, white, often purplish towards margins, with prominent, greenish stipitate glands distally and on each side of central nerve towards base. Column 9–10 mm. Capsule 12–14 × 8–10 mm., cylindrical to cylindrical-ellipsoid, dark purplish brown. Fl. XI–XII.

Cortaderia and *Empetrum* associations, often in open sand or shale; locally common. 3–*c.* 15 m.

West Falkland, East Falkland. Fuegia, west Patagonia, Andean Patagonia (lat. 48–51°S.), ? southern Chile (*c.* lat. 39°50′S.).

Typus. East Falkland: Port Louis, 20.xi.–18.xii.1822. *Lesson* (P).

Specimens. **WF**: TD40 *Skottsberg**; TC66 *Vallentin in 1909–11* (K); TC68 *Vallentin in 1909–11* (K); TC83 *Vallentin in 1909–11* (K); TD80 *Skottsberg**; UC16 *Skottsberg**; UC27 *Skottsberg**; s. loc. *Blake in 1925–26* (MANCH), *Holmested in 1884* (BM), *Nichol* (BM), *Vallentin* (BM), *R. Vallentin in 1901–02* (MANCH). **EF**: VC27 *Sladen Fa60/49* (BM); VC46 *Holdgate 622* (BIRM); VC47 *Bennett 9.xii.1917* (BM), *Greene 21* (K), *Hill xi.1902* (K), *Moore 926* (K, LTR), *Skottsberg**, *Sladen Fa2/49* (BM); s. loc. *Abbott in 1860* (K), *Hennis in 1914* (BM), *Hooker* (BM, K).

C. Glossary (Including Abbreviations)

achene: a small dry indehiscent one-seeded fruit.
acicular: stiff and pointed, like a needle.
actinomorphic: radially symmetrical.
acuminate: tapering to a fine point, the sides ± concave (Fig. 24c).
acute: sharply pointed, making an angle of less than 90° (Fig. 24b).
adnate: united to an organ of a different kind, as stipules to petiole.
adventitious: arising irregularly and in an unusual position, as roots from stems.
alien: a species not native to the area, usually introduced directly or indirectly by Man.
alternate: placed singly along an axis, not in opposite pairs.
amplexicaul: clasping the stem by the base.
annual: completing the life cycle in 1 year.
anthesis: period during which flower is open.
apiculate: terminating by a short slender ± flexible point (Fig. 24n).
appressed: closely and flatly pressed against a surface.
arcuate: curved or arched.
ascending: directed somewhat obliquely or indirectly upwards.
auct.: *auctorum*, of author(s).
auricle: rounded lobe or appendage; at base of leaf-blade, or at summit of leaf-sheath, in many grasses.
awn: a stiff or bristle-like projection, often from tip or back of an organ.

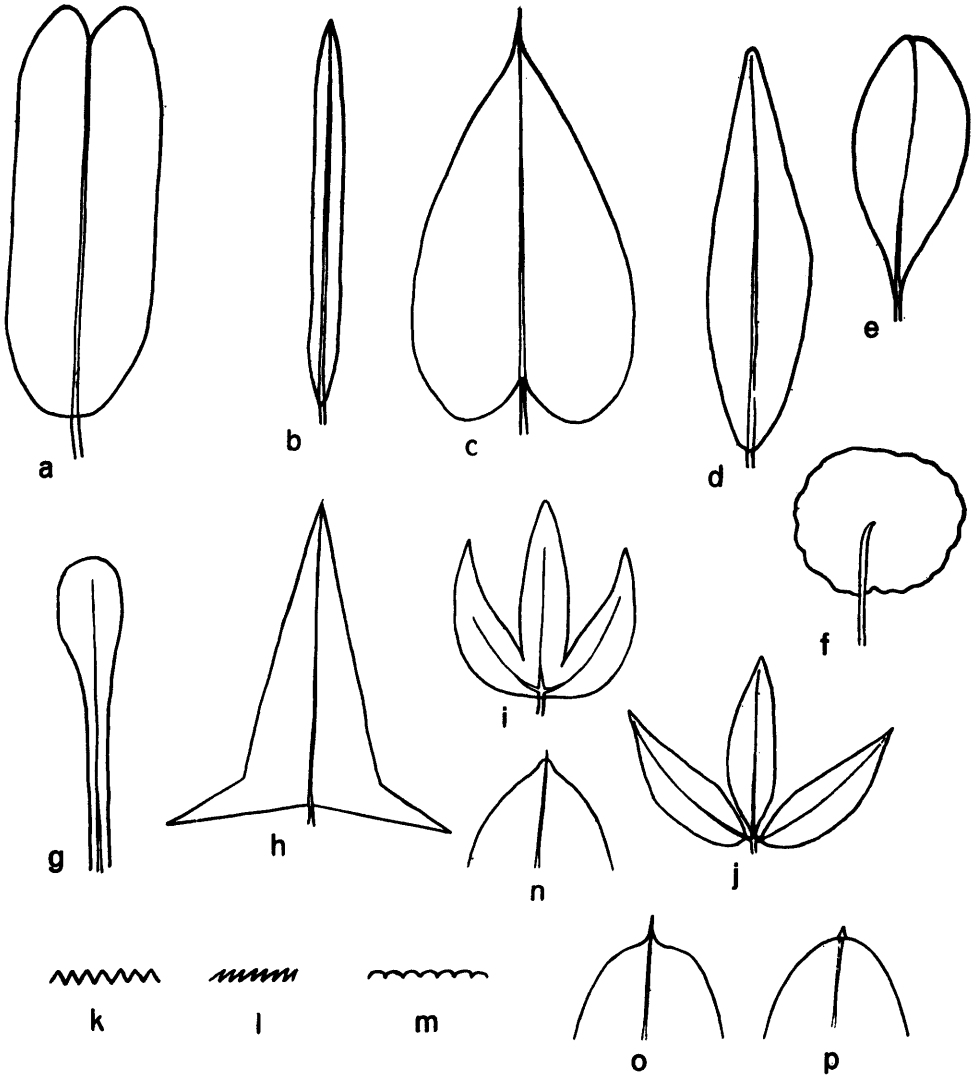


FIGURE 24

Diagrams illustrating the use of some terms employed in describing the outline, apex, base and margin of leaves.
a. oblong, base truncate, apex emarginate; b. linear, base cuneate, apex acute; c. ovate, base cordate, apex acuminate; d. lanceolate, base cordate, apex obtuse; e. obovate, base cuneate, apex retuse; f. orbicular and peltate; g. spathulate; h. hastate; i. trifid, j. trifoliolate; k. dentate margin; l. serrate margin; m. crenate margin; n. apiculate apex; o. cuspidate apex; p. mucronate apex.

berry: a fleshy fruit containing several to many seeds.
bi-: a prefix meaning two, e.g. bilabiate: with two lips.
biennial: living 2 years and flowering only in the second.
biternate: of leaves in which the common petiole bears three secondary petioles, each with three leaflets.
bract: a modified, often much-reduced, leaf subtending a flower, usually associated with an inflorescence.
bracteole: a secondary bract borne on a pedicel instead of subtending it.
c.: *circa*, about, approximately.
caducous: falling off at an early stage.
caespitose: growing in ± dense tufts.
campanulate: bell-shaped.
capitate: head-like.

capitulum: a dense head-like inflorescence of numerous, usually sessile flowers, as for example most Compositae (p. 115).
capsule: a dry dehiscent fruit formed by the union of two or more carpels.
carpophore: a prolongation of the floral axis between the carpels, as in Umbelliferae (p. 91).
cauline: pertaining or belonging to the stem, especially the upper aerial part.
ciliate: fringed with hairs along the margin; dimin. **ciliolate.**
circinate: coiled, with the apex innermost, as in young fern fronds.
circumscissile: dehiscing as if cut circularly around, the top valve coming off like a lid.
clavate: club-shaped, thickened towards the apex.
claw: the narrow stalk-like base of a petal or sepal.
cleistogamous: of flowers that remain closed and self-fertilized.
cochleariform: spoon-shaped.
column: the combination of stamens and styles into a solid central body in orchids (p. 178).
commissure: the face by which two carpels cohere, as in Umbelliferae (p. 91).
comose: bearing a tuft or tufts of hairs.
compound: composed of several ± similar parts; cf. simple.
compressed: flattened, especially laterally.
connate: joined together, usually secondarily and of similar parts.
connective: the tissue connecting the two lobes of an anther.
connivent: converging together, usually of organs with bases separated and apices approaching one another.
convolute: rolled together longitudinally.
cordate: heart-shaped; also of bases with two equal rounded lobes projecting beyond point of attachment of petiole (Fig. 24c).
coriaceous: of somewhat leathery texture, tough.
crenate: with shallow rounded teeth, the sinus acute (Fig. 24m); dimin. **crenulate.**
crispate: with the margin crumpled or thrown into close waves.
cucullate: hood-shaped, hood-like.
culm: stem of grasses bearing leaves and inflorescences (p. 145).
cuneate: gradually and evenly narrowed to point of attachment, applied to leaf-bases (Fig. 24b).
cuneiform: wedge-shaped, applied to total shape of leaf, petal or sepal.
cupule: see p. 77.
cuspidate: tapering gradually into a rigid point (Fig. 24o).
cyathium: see p. 86.
cymbiform: boat-shaped, especially of a leaf with the edges inrolled, giving the appearance of a row-boat.
cyme: a broad ± flat-topped inflorescence with the oldest flowers in the centre.
decurrent: prolonged below the point of insertion.
decussate: of leaves that are opposite with successive pairs at right-angles to each other so forming four rows.
deflexed: bent sharply downwards.
dentate: with sharp teeth perpendicular to the margin (Fig. 24k); dimin. **denticulate.**
diadelphous: of stamens whose filaments are united to give two groups.
dichasium: a cyme in which the branches are opposite and of ± equal length.
dichotomous: forked into two equal branches.
didymous: of two similar parts attached by a short length of their inner surface.
dioecious: having unisexual flowers with male and female on separate plants.
disc: a flattened often ± fleshy development of the receptacle.
distal: towards the free, as opposed to the attached, or proximal, end of an organ.
distant: not close together.
distichous: conspicuously two-ranked, in two rows.
dorsal: relating to the back, the surface away from the axis.
drupe: a fleshy, one-seeded indehiscent fruit, with the seed enclosed in a stony endocarp.
drupelet: one small drupe of an aggregate fruit, as in a raspberry.
echinate: covered with numerous rigid hairs or straight prickles.

ed.: edition.
EF: East Falkland.
ellipsoid: of a solid object elliptical in section or outline.
elliptical: in the shape of an ellipse, widest at the middle and more than twice as long as wide.
emarginate: with a wide shallow notch at the apex (Fig. 24a).
endocarp: the inner layer of the fruit wall, sometimes stony, lying next to the seed.
endosperm: the nutritive tissue outside the embryo in a seed.
entire: with a continuous margin completely lacking indentations.
excurrent: projecting beyond the apex, as the midrib of an apiculate leaf.
erect: upright in relation to the ground.
f.: *filius*, son (following author name).
falcate: sickle-shaped, strongly curved.
-fid: divided nearly to the base into a particular number of segments, e.g. trifid (or 3-fid) (Fig. 24i).
fig.: figure.
filiform: thread-like, long and very slender.
fimbriate: fringed, the hairs longer and coarser than in ciliate.
fistulose: hollow and cylindrical.
Fl.: flowering period; the months given in large roman numerals.
floccose: bearing tufts of woolly hairs, usually easily removed.
-foliolate: of compound leaves having two or more leaflets borne from the same point on the petiole, as 3-foliolate (Fig. 24j).
follicle: a dry, dehiscent fruit formed from one carpel and dehiscing along one side.
foveate: pitted; dimin. **foveolate.**
funiculus: the stalk attaching the ovule or seed to the placenta or ovary wall.
fusiform: spindle-shaped.
geniculate: with a knee-like bend.
glabrous: without hairs of any sort.
glabrescent: becoming glabrous.
glaucous: of a bluish green colour.
glume: the chaffy bract(s) subtending the spikelet of Cyperaceae and Gramineae (Fig. 19a).
gynodioecious: having female and hermaphrodite flowers on separate plants.
hastate: shaped like an arrowhead with the basal lobes pointed or narrow and abruptly spreading at a wide angle (Fig. 24h).
hemiparasite: a plant attached to and deriving part of its nourishment from another living plant.
herb: a non-woody vascular plant lacking persistent above-ground stem and naturally dying to the ground at the end of the growing season.
herbaceous: having the texture or colour of a foliage leaf.
hermaphrodite: of a flower having both functional stamens and carpels.
heterogamous: of a capitulum bearing two kinds of flowers, as in Compositae (p. 115).
heterostylous: with style length relative to other floral parts not the same in all plants of a species.
hispid: bearing stiff, ± bristle-like hairs.
homogamous: of a capitulum with flowers all alike (p. 115).
hyaline: thin and translucent.
hypanthium: a cup-shaped enlargement of the receptacle on which perianth and stamens are inserted.
hypogynous: in which perianth and stamens arise below the ovary.
imbricate: overlapping, like roof-tiles.
indusium: outgrowth of tissue ± covering the sorus in some ferns.
inferior ovary: ovary with the perianth situated on top.
inflexed: turned sharply inwards.
inflorescence: flower-cluster.
internode: the part of the axis between two nodes.
involucre: a cluster of bracts subtending a flower or inflorescence.
involute: rolled inwards or to upper side.
keeled: with a central dorsal ridge.

labellum: the posterior inner perianth-segment of orchids, usually enlarged (p. 178).
lacerate: irregularly divided by deep incisions.
lamina: the expanded part or blade of a leaf.
lanate: clothed with woolly hairs, usually intertwined.
lanceolate: lance-shaped, several times longer than wide with greatest width below the middle (Fig. 24d).
latex: milky juice.
lemma: the lower of the two chaffy bracts immediately enclosing the floret in grasses (Fig. 19b).
ligule: a strap-shaped body (hence **ligulate**), as the limb of the ray floret in Compositae (p. 115); the thin scarious projection from the top of the leaf-sheath in grasses and sedges.
limb: the expanded part of a sepal or petal.
linear: very narrow with parallel margins (Fig. 24b).
lobed: partly divided into a number of segments.
loculicidal: splitting longitudinally down the middle of each cell of the ovary.
loculus: a compartment or cavity of an organ, e.g. anther, ovary or fruit.
lodicule: a small scale outside the stamens in a grass flower (Fig. 19c).
lyrate: pinnatifid, with the terminal lobe considerably larger than the others.
marginate: distinctly margined.
membranous: thin and ± pliable.
mericarp: a half-fruit in the Umbelliferae.
monadelphous: of stamens whose filaments are united to give a cylinder or column.
monocarpic: of a plant which flowers and fruits once before dying.
monoecious: having unisexual flowers borne on same plant.
mucro: a short sharp tip or excurrent midrib, hence **mucronate** (Fig. 24p); dimin. **mucronulate.**
nectary: an organ which secretes nectar, hence **nectariferous.**
node: a place on a stem marked by the attachment of one or more leaves.
nut: an indehiscent one-seeded fruit with a hard woody wall.
ob-: signifies inversion, e.g. an obovate leaf is attached at narrow end (Fig. 24e).
obdiplostemonous: with the stamens in two whorls, the outer opposite, the inner alternating with, the petals.
oblong: longer than wide with parallel margins (Fig. 24a).
obsolete: not obvious, poorly developed.
obtuse: blunt, making an angle greater than 90° (Fig. 24d).
opposite: of a pair of organs arising at the same level on opposite sides of the stem.
orbicular: rounded in outline (Fig. 24f).
ovate: egg-shaped, attached by the wider end (Fig. 24c).
ovoid: of a solid body ovate in outline or longitudinal section.
p.: page.
palea: the inner bract of a grass floret (Fig. 19b).
palmate: consisting of more than three leaflets arising from the same point.
panicle: a branched inflorescence, strictly a branched racemose inflorescence.
papillose: covered with minute, pimple-like processes.
pappus: a persistent calyx of special form crowning achene in Compositae (p. 115).
patent: spreading ± at right-angles to axis.
pedicel: the stalk of an individual flower in a compound inflorescence.
peduncle: the stalk of a solitary flower or main stalk of a compound inflorescence.
peltate: shield-like, with the stalk attached well inside the margin (Fig. 24f).
pendulous: hanging downwards.
perennial: with a life-span of more than 2 years.
perianth: the sepals and petals considered together, especially when they are not clearly different.
pericarp: the wall of the fruit.
perigynium: the inflated sac-like organ surrounding the style in Cyperaceae (p. 171).
persistent: remaining attached, not falling off.
petiole: the stalk of a leaf; dimin. **petiolule.**
phyllode: a green dilated petiole resembling a leaf.
pilose: bearing soft shaggy hairs.

pinna: a primary division of a pinnate leaf; dimin. **pinnule.**
pinnate: when simple leaflets are arranged on each side of a common petiole (Fig. 6a), in all examples in this flora a terminal leaflet or tendril is present and the term is strictly *imparipinnate*, as opposed to *paripinnate* in their absence; **2-pinnate** if leaflets are themselves pinnate.
pinnatifid: of leaves pinnately cut but the divisions not reaching midrib.
pinnatisect: like pinnatifid but with some of lower divisions almost or quite reaching midrib.
pl.: plate.
plicate: folded lengthwise into pleats.
plumose: feather-like.
pod: a superior, 1-celled fruit usually dehiscent into two valves, having the seeds attached along the ventral line of junction of the two carpels, as in a pea.
pollinium: the coherent mass of pollen, as in orchids (p. 178).
procumbent: lying ± flat along the ground but not rooting.
pro parte: in part.
protandrous: of an hermaphrodite flower in which the anthers mature before the stigma.
protogynous: of an hermaphrodite flower in which the stigma matures before the anthers.
pt.: part.
pubescent: clad in short soft hairs; dimin. **puberulent.**
punctate: with dot-like markings.
pungent: ending in a stiff sharp point.
pyriform: pear-shaped.
raceme: an unbranched, ± elongate inflorescence with stalked flowers, those at the base the oldest.
receptacle: the ± expanded apex of the stalk on which the flower or flower-head is borne.
reflexed: bent sharply backwards.
remote: not close together.
reniform: kidney-shaped.
reticulate: in the form of a network.
retuse: with the apex rounded and having a shallow notch (Fig. 24e).
revolute: rolled outwards or to the lower side.
rhachilla: the axis of grass spikelet that bears the florets.
rhizome: an underground stem lasting more than one growing season.
rhomboid: ovate, with sides angular rather than rounded towards middle.
rostellum: the slender extension from the upper edge of the stigma in orchids (p. 178).
rotate: wheel-shaped, of a corolla with flat, circular limb at right-angles to short tube.
ruderal: a plant growing in waste places.
rugose: wrinkled; dimin. **rugulose.**
runcinate: pinnately and rather sharply lobed with the lobes directed backwards.
saccate: bag-shaped.
scabrid: with very short bristly hairs; rough to the touch.
scabridulous: slightly rough to the touch.
scape: a leafless ± elongate peduncle arising from the crown, with or without scales or bracts.
scapigerous: bearing scapes.
scarious: very thin, dry and ± translucent.
self-compatible: of a plant capable of being fertilized by its own pollen.
sens. lat.: *sensu lato*, in a wide sense.
septate: divided by partitions or cross-walls.
septicidal: splitting longitudinally between the cells of the ovary.
sericeous: clothed with simple ± appressed hairs.
serrate: sharply toothed with the teeth pointing forward (Fig. 24l); dimin. **serrulate.**
sessile: without a stalk.
setaceous: bristle-like.
sheath: the tubular and ± tubular basal part of the leaf that encloses the stem, as in Gramineae and Cyperaceae.
shrub: a low woody plant.

silicula: capsule of Cruciferae, less than 3 times as long as wide (p. 69, Fig. 9).
siliqua: capsule of Cruciferae, more than 3 times as long as wide (p. 69, Fig. 9).
simple: not divided into several separate parts, not compound, unbranched.
sinuate: with a wavy margin.
s. loc.: *sine loco*, without a locality.
s.n.: *sine numero*, without a number.
sorus: a cluster of sporangia in ferns.
sp.: species; plural **spp.**
spathulate: paddle-shaped (Fig. 24g).
spicule: a diminutive, fine, often fleshy, erect point.
spike: an unbranched ± elongate inflorescence with sessile flowers, those at the base oldest.
spikelet: the ultimate unit of the inflorescence in Gramineae, consisting of two glumes and one or more florets (Fig. 19a), and in Cyperaceae.
sporangium: a sac containing spores.
sporophyll: a ± modified leaf-like structure bearing sporangia.
ssp.: subspecies; plural **sspp.**
stamen: the male organ of the flower, bearing pollen in terminal *anther* which is usually attached by a stalk-like *filament*.
stellate: star-shaped.
stipitate: having a stalk or a stalk-like base.
stipule: one of a pair of scale-like or leaf-like appendages at the base of a petiole.
stock: the tissue at the junction of the root and stem.
stolon: an overground creeping stem rooted at nodes and of short duration.
striate: with fine grooves.
strict: upright, straight and ± rigid.
strigose: with sharp, stiff, ± appressed hairs and bristles; dimin. **strigulose.**
style: the contracted part of the pistil between the ovary and the stigma.
stylopodium: the enlarged basal part of a style, as in Umbelliferae (p. 91).
sub-: prefix meaning somewhat, slightly or not quite.
subulate: awl-shaped; very narrow, tapering to a sharp apex from a rather wide base.
suffruticose: rather woody at base with herbaceous shoots.
superior ovary: an ovary with the perianth inserted below it.
terete: circular in cross-section.
tetragonous: four-angled.
tomentose: with a dense ± matted covering of soft ± appressed hairs.
trigonous: of a solid body triangular in cross-section with the angles obtuse.
triquetrous: of a solid body triangular in cross-section with the angles acute.
truncate: ending abruptly as though cut squarely across (Fig. 24a).
tuberculate: covered with small wart-like swellings.
umbel: a flat or convex inflorescence in which the pedicels arise from a common point like the rays of an umbrella.
umbel, compound: an umbel with each ray itself bearing an umbel.
undulate: waved in a plane at right-angles to the surface.
unisexual: of one sex only.
urceolate: pitcher-like, hollow, swollen in lower part and contracted at the mouth.
var.: variety.
verrucose: covered with small wart-like excrescences.
villous: with long, silky, straight hairs.
viscid: very sticky.
viviparous: with the flowers proliferating vegetatively and not forming seed.
WF: West Falkland.
whorl: an arrangement of three or more parts or organs at the same level round an axis.
zygomorphic: bilaterally symmetrical.

VI. ACKNOWLEDGEMENTS

THE award of a Royal Society and Nuffield Foundation Commonwealth Bursary made possible my visit to the Falkland Islands, which was greatly facilitated by the continuing assistance and interest of the British Antarctic Survey and its Director, Sir Vivian Fuchs. I am also indebted to my former Head of Department, Professor T. G. Tutin, for arranging my leave of absence.

My work in the Falkland Islands owes much to the interest of Sir Edwin Arrowsmith, K.C.M.G., Governor of the Falkland Islands 1957–64, the Colonial Secretary, Mr. W. H. Thompson, and the following friends who provided hospitality, transport and innumerable other courtesies: Mr. A. G. Barton, Mr. S. Booth, Mr. E. Clapp, Mr. and Mrs. I. J. Strange (Port Stanley); Mr. T. Gilruth (Darwin); Mr. and Mrs. M. Musson, Mr. and Mrs. J. Poltock (Darwin School); Mr. J. P. Oliver (Goose Green); Mr. and Mrs. C. Bonner (San Carlos); Mr. W. W. Blake (Hill Cove); Mr. and Mrs. R. Napier (West Point Island); Mr. and Mrs. R. M. W. Shaw (Port Stephens).

I am indebted to the Directors of the following Institutes and Herbaria for the loan of specimens: Department of Botany, University of Birmingham; British Museum (Nat. Hist.); Botany School, University of Cambridge; Wiegand Herbarium, Cornell University; Royal Botanic Gardens, Kew; The Manchester Museum; Muséum National d'Histoire Naturelle, Paris; Naturhistoriska Riksmuseum, Stockholm; University Institute of Systematic Botany, Uppsala. I am grateful for a grant from the Research Board, University of Leicester, which enabled me to consult material in several libraries and herbaria.

Dr. A. L. Cabrera, La Plata (*Senecio*), Mr. A. O. Chater, Leicester (*Carex*), Dr. A. Lourteig, Paris (*Primula*), Frau F. Markgraf-Dannenberg, Zurich (*Festuca*) and Dr. P. H. Raven, Stanford (*Epilobium*) kindly gave help with various taxonomic problems, while Mr. J. E. Dandy, British Museum (Nat. Hist.), kindly assisted with the nomenclature of *Deschampsia antarctica*. For permission to publish here new combinations resulting from their studies, I thank Dr. K. L. Chambers, Corvallis (*Agoseris*) and Dr. H. A. Fabris, La Plata (*Gentianella*). Dr. W. J. L. Sladen generously made available his field records on the occurrence of many, particularly introduced, species.

The manuscript has been considerably improved by the many helpful suggestions made by Professor T. G. Tutin, Dr. R. J. Adie, Mr. A. O. Chater and Dr. S. W. Greene, and I should also like to acknowledge the following assistance: the preparation of Figs. 1, 2, 8 and 13 by Miss S. Pearcey and Figs. 9, 11, 12, 14–18 and 20–22 by Mrs. D. Erasmus; the typing of the text by Mrs. I. H. Browne and the preparation of the photographs by Mr. E. M. Singer. Mr. W. W. Blake kindly provided information on station boundaries and various people mentioned in Table II, while the Directorate of Overseas Surveys prepared the 1 : 250,000 sheets in the end pocket and the maps showing species distributions (Figs. 3–5). The meteorological data used in Fig. 1 were kindly provided by the Chief Meteorological Officer, Port Stanley.

Finally, I wish to record my thanks to my wife, who cheerfully coped with house and family during my long absence in the Southern Hemisphere, and who has subsequently devoted many hours to checking the manuscript and proofs.

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APPENDIX A

ABBREVIATIONS OF AUTHORS' NAMES

Adans. M. Adanson 1727–1806
Aellen P. Aellen *b.* 1896
Aiton W. Aiton 1731–93
Alboff N. M. Alboff 1866–97
All. C. Allioni 1728–1804
Alston A. H. G. Alston 1902–58
Anderson G. Anderson *d.* 1817
Arn. G. A. W. Arnott 1799–1868

Baker J. G. Baker 1834–1920
Banks J. Banks 1743–1820
Bartal. B. Bartalini 1746–1822
Bartl. F. G. Bartling 1798–1875
Baumg. J. C. G. Baumgarten 1765–1843
Benth. G. Bentham 1800–84
Berg O. C. Berg 1815–86
Berg. P. J. Bergius 1730–90
Bernh. J. J. Bernhardi 1774–1850
Betcke E. F. Betcke 1815–65
Blytt M. N. Blytt 1789–1862
Boeck. J. O. Boeckeler 1803–99
Bonpl. A. J. A. Bonpland 1773–1858
Boott F. Boott 1792–1863
Bory J. B. G. M. Bory de St. Vincent 1778–1846
Brongn. A. T. Brongniart 1801–76
Buch. F. G. P. Buchenau 1831–1906

Cabrera A. L. Cabrera *b.* 1908
Campd. F. Campdéra *fl.* 1819
Carmichael D. Carmichael 1772–1827
Cass. A. H. G. de Cassini 1781–1832
Cav. A. J. Cavanilles 1745–1804
Cham. L. A. von Chamisso 1781–1838
Chambers K. L. Chambers *b.* 1929
Ching Ran-Chang Ching *b.* 1899
C. Chr. C. F. A. Christensen 1872–1942
Christ H. Christ 1833–1933
Citerne P. E. C. Citerne *b.* 1857
Clairv. J. P. de Clairville 1742–1830
Clarke, C. B. C. B. Clarke 1832–1906
Clausen R. T. Clausen *b.* 1911
Comm. P. Commerson 1727–73
Connert H. J. Connert contemporary
Const. L. Constance *b.* 1909
Correa M. N. Correa *b.* 1914

Dahlst. H. G. A. Dahlstedt 1856–1934
DC. A. P. de Candolle 1778–1841
Desf. R. L. Desfontaines 1750–1833
Desv. A. N. Desvaux 1784–1856
Domin K. Domin 1882–1952
Donn J. Donn 1758–1831
Duby J. E. Duby 1798–1885
D'Urv. J. S. C. D. D'Urville 1790–1842
Dusén P. K. H. Dusén 1855–1926

Endl. S. L. Endlicher 1804–49
Engelm. G. Engelmann 1809–84
Engler H. G. A. Engler 1844–1930

Fabris H. A. Fabris *b.* 1929
Forrest G. Forrest 1873–1932
Forsk. P. Forskål 1732–63
Forst. J. R. Forster 1729–98
Forst. f. J. G. A. Forster 1754–94
Fr. E. M. Fries 1794–1878
Franchet A. Franchet 1834–1900

Gaertn. J. Gaertner 1732–91
Gaertn., C. F. C. F. von Gaertner 1772–1850
Gandoger M. Gandoger 1850–1926
Gaudich. C. Gaudichaud-Beaupré 1789–1854
Gaudin J. F. A. T. G. P. Gaudin 1766–1833
Gay J. E. Gay 1786–1864
Gay, C. C. Gay 1800–73
Gmel., C. C. C. C. Gmelin 1762–1837
Gooden. S. Goodenough 1743–1827
Graebn. K. O. R. P. P. Graebner 1871–1933
Gray, A. A. Gray 1810–88
Gray, S. F. S. F. Gray 1766–1828
Greene E. L. Greene 1842–1915
Grev. R. K. Greville 1794–1866
Griseb. A. H. R. Grisebach 1814–79
Guett. J. É. Guettard 1715–86

Hack. E. Hackel 1850–1926
Haenke T. Haenke 1761–1817
Hagstr. J. O. Hagström 1860–1922
Haller A. von Haller 1708–77
Hartm. K. J. Hartman 1790–1849
Hausskn. H. K. Haussknecht 1838–1903
Hayek A. von Hayek 1871–1928
Hegel. C. F. Hegelmaier 1833–1906
Hieron. G. H. E. W. Hieronymus 1846–1921
Hill J. Hill 1716–75
Hill, A. W. A. W. Hill 1875–1941
Hoffm. G. F. Hoffmann 1761–1826
Hook. W. J. Hooker 1785–1865
Hook. f. J. D. Hooker 1817–1911
Host N. T. Host 1761–1834
Howell T. J. Howell 1842–1912
Huds. W. Hudson 1730–93
Hull J. Hull 1764–1843
Hultén E. O. G. Hultén *b.* 1894
Humb. F. H. A. von Humboldt 1769–1859

Irmscher E. Irmscher *b.* 1887

Jalas J. Jalas *b.* 1920
Juss. A. L. de Jussieu 1748–1836

Kalm P. Kalm 1715–79
Kaulf. G. F. Kaulfuss 1786–1830
Knuth R. G. P. Knuth 1874–1957
Koch C. H. E. Koch 1809–79
Kraenzlin F. W. L. Kraenzlin 1847–1934
Kük. G. Kükenthal 1864–1955
Kuhn M. F. A. Kuhn 1842–94
Kunth C. S. Kunth 1788–1850
Kuntze C. E. O. Kuntze 1843–1907
Kurtz F. Kurtz 1854–1920

L. C. von Linné 1707–78
L. f. C. von Linné 1741–83
Labill. J. J. H. de Labillardière 1755–1834
Lag. M. Lagasca y Segura 1776–1839
Lam. J. B. A. P. Monnet de la Marck 1744–1829
Lechler W. Lechler 1814–56
Lehm. J. G. C. Lehmann 1792–1860
Less. C. F. Lessing 1810–62
L'Hérit. C. L. L'Héritier de Brutelle 1746–1800
Lindl. J. Lindley 1799–1865
Link J. H. F. Link 1767–1851
Looser G. Looser *b.* 1898
Lourteig A. Lourteig *b.* 1913

Mart.	C. F. P. von Martius 1794–1868
Math.	M. E. Mathias *b.* 1906
Medicus	F. C. Medicus 1736–1808
Melvill	J. C. Melvill 1845–1929
Menz.	A. Menzies 1754–1842
Mett.	G. H. Mettenius 1823–66
Meyen	F. J. F. Meyen 1804–40
Miers	J. Miers 1789–1879
Mill.	P. Miller 1691–1771
Moench	C. Moench 1744–1805
Moore, D. M.	D. M. Moore *b.* 1933
Moore, S.	S. le M. Moore 1851–1931
Moq.	C. H. B. A. Moquin-Tandon 1804–63
Murb.	S. S. Murbeck 1859–1946
Murray	J. A. Murray 1740–91
Neck.	N. J. von Necker 1729–93
Nees	C. G. Nees von Esenbeck 1776–1858
Newman	E. Newman 1801–76
Nutt.	T. Nuttall 1786–1859
Palla	E. Palla 1864–1922
Parl.	F. Parlatore 1816–77
Parodi	L. R. Parodi 1895-1966
Pav.	J. Pavón 1750–1844
P. Beauv.	A. M. F. J. Palisot de Beauvois 1752–1820
Pennell	F. W. Pennell 1886–1952
Pers.	C. H. Persoon *c.* 1762–1836
Phil.	R. A. Philippi 1808–1904
Pilger	R. K. F. Pilger 1876–1953
Poepp.	E. F. Poeppig 1798–1868
Poir.	J. L. M. Poiret 1755–1834
Poll.	J. A. Pollich 1740–80
Presl	C. B. Presl 1794–1852
Presl, J.	J. S. Presl 1791–1849
Raddi	G. Raddi 1770–1829
Rafin.	C. S. Rafinesque-Schmaltz 1783–1840
Raspail	F. V. Raspail 1791–1878
R. Br.	R. Brown 1773–1858
Rchb.	H. G. L. Reichenbach 1793–1879
Rees	A. Rees 1743–1825
Reiche	C. F. Reiche 1860–1929
Relhan	R. Relhan *b.* 1753
Remy	E. J. Remy 1826–93
Richt.	K. Richter 1855–91
Roem.	J. J. Roemer 1763–1819
Roth	A. W. Roth 1757–1834
Ruiz	H. Ruiz López 1754–1815
Rupr.	F. J. Ruprecht 1814–70
Salisb.	R. A. Salisbury 1761–1829
Sch. Bip.	K. H. Schultz 1805–67
Schlecht.	D. F. L. von Schlechtendal 1794–1866
Schott	W. H. Schott 1794–1865
Schrank	F. von Paula von Schrank 1747–1835
Schreb.	J. C. D. von Schreber 1739–1810
Schult.	J. A. Schultes 1773–1831
Scop.	G. A. Scopoli 1723–88
Seguier	J. F. Seguier 1703–84
Sibth.	J. Sibthorp 1758–96
Skottsb.	C. J. E. Skottsberg 1880–1963
Sleumer	H. Sleumer *b.* 1906
Sm.	J. E. Smith 1759–1828
Sm., J.	J. Smith 1798–1888
Smith	W. W. Smith 1875–1956
Sol.	D. C. Solander 1736–82
Soriano	A. Soriano *b.* 1919
Spach	E. Spach 1801–79
Speg.	C. Spegazzini 1858–1926
Spreng.	C. Sprengel 1766–1833
Stapf	O. Stapf 1857–1933
Steud.	E. G. von Steudel 1783–1856
Sturm	J. Sturm 1771–1848
St.-Yves	A. Saint-Yves 1855–1933
Swartz	O. P. Swartz 1760–1818
Tardieu-Blot	M. L. Tardieu-Blot *b.* 1902
Thouars	L. M. Aubert du Petit-Thouars 1758–1831
Thunb.	C. P. Thunberg 1743–1828
Trin.	C. B. von Trinius 1778–1844
Vahl	M. H. Vahl 1749–1804
Van den Bosch	R. B. Van den Bosch 1810–62
Vill.	D. Villars 1745–1814
Wahlenb.	G. Wahlenberg 1780–1851
Walt.	T. Walter 1740–88
Weber	G. H. Weber 1752–1828
Wedd.	H. A. Weddell 1819–77
Wiggers	F. H. Wiggers *fl.* 1780
Wildem.	É. A. J. de Wildeman 1866–1947
Willd.	C. L. Willdenow 1765–1812
With.	W. Withering 1741–99
Wolff	H. Wolff 1866–1929

APPENDIX B

ABBREVIATIONS OF BOOKS AND PERIODICALS NOT CITED IN THE *WORLD LIST*, 4th ED.

Animad. Bot. Valer. BETCKE, E. F. *Animadversiones botanicae in Valerianellas.* Adler, Rostock. 1826.
Ann. Sc. Observ. *Annales des Sciences d'Observation.* **1–8.** Paris. 1829–30.
Arr. Brit. Pl. WITHERING, W. *An arrangement of British plants.* 3rd ed. London. 1796.
Berberid. Amer. Austr. LECHLER, W. *Berberides Americae australis.* Stuttgart. 1857.
Brit. Fl. HULL, J. *The British flora.* Manchester. 1st ed., 1799; 2nd ed., 1808.
Bull. Soc. philom. Paris. *Nouveau Bulletin des Sciences de la Société Philomatique de Paris.* Paris. 1807–25.
Chloris Andina. WEDDELL, H. A. *Chloris andina. Essai d'une flore de la région alpine des cordillères de l'Amérique du sud.* Paris. 1855–61.
Cyclop. REES, A. *The cyclopaedia; or universal dictionary of arts, sciences and literature.* London. 1802–20.
Comment. Gotting. *Commentationes Societatis Regiae Scientiarum Gottingensis.* Ser. 2, **1–16.** Göttingen. 1779–1808.
Comp. Bot. Mag. HOOKER, W. J. *Companion to the botanical magazine.* **1–2.** London. 1835–37.
Deutschl. Fl. STURM, J. *Deutschlands Flora.* Nürnberg. 1798–1855.
Dict. Sci. Nat. *Dictionnaire des sciences naturelles.* **1–60.** Paris. 1816–30.
Encycl. Méth. Bot. MONNET DE LA MARCK, J. B. A. P. *Encyclopédie méthodique botanique.* Paris. 1783–1817.
Enum. KUNTH, C. S. *Enumeratio plantarum omnium hucusque cognitarum.* **1–5.** Stuttgart and Tübingen. 1833–50.

Enum. Fil. KAULFUSS, G. F. *Enumeratio filicum, quas in itinere circa terram legit clar. Adalbertus de Chamisso adjectis. . . .* Leipzig. 1824.
Enum. Pl. VAHL, M. H. *Enumeratio plantarum vel ab aliis, vel ab ipso observatarum, cum earum differentiis specificis, synonymis selectis et descriptionibus succinctis.* **1–2.** Köbenhavn. 1804–05.
Enum. Pl. Hort. Berol. WILLDENOW, C. L. *Enumeratio plantarum Horti regii botanici Berolinensis continens descriptiones omnium vegetabilium in Horto dicto cultorum.* Berlin. 1809.
Enum. Stirp. Transs. BAUMGARTEN, J. C. G. *Enumeratio stirpium magno Transsilvaniae principatui praeprimis indigenarum.* Vienna. 1816.
Ess. Agrostogr. PALISOT DE BEAUVOIS, A. M. F. J. *Essai d'une nouvelle agrostographie.* Paris. 1812.
Fil. Afr. KUHN, M. *Filices Africanae . . . additamentis braunianis . . . mettenianis adaucta, accedunt filices deckenianae et Peter siaiae.* Leipzig. 1868.
Fil. Lechl. METTENIUS, G. *Filices Lechlerianae, Chilenses ac Peruanae.* **1–2.** Leipzig. 1856–59.
Fl. Angl. HUDSON, W. *Flora Anglica.* 1st ed. London. 1762.
Fl. Antarct. HOOKER, J. D. *The botany of the Antarctic voyage.* **1.** *Flora Antarctica. Pt. 2. Botany of Fuegia, the Falklands, Kerguelen's Land, etc.* London. 1847.
Fl. Bad. GMELIN, C. C. *Flora Badensis Alsatica et confinium regionum cis et transrhenana plantas. . . .* **1–4.** Karlsruhe. 1805–26.
Fl. Brit. SMITH, J. E. *Flora Britannica.* **1–3.** London. 1800–04.
Fl. Cantabr. RELHAN, R. *Flora Cantabrigiensis, exhibens plantas agro Cantabrigiensis indigenes.* Cambridge. 1st ed., 1785; 2nd ed., 1802.
Fl. Carn. SCOPOLI, J. A. *Flora Carniolica, exhibens plantas Carnoliae indigenas.* 2nd. ed., **1–2.** Vienna. 1772.
Fl. Carol. WALTER, T. *Flora Caroliniana, secundum systema vegetabilium perillustris Linnaei digesta, . . .* London. 1788.
Fl. Chile GAY, C. *Flora de Chile.* **1–8.** Santiago de Chile. 1845–54.
Fl. Fr. MONNET DE LA MARCK, J. B. A. P. *and* A. P. DE CANDOLLE. *Flore française.* 3rd ed., **1–5.** Paris. 1805–15.
Fl. Ins. Aust. Prodr. FORSTER, J. G. A. *Florulae insularum Australium prodromus.* Göttingen. 1786.
Fl. Is. Mal. D'URVILLE, J. S. C. D. *Flore des Îles Malouines.* Paris. 1825. [Preprint of article published in *Mémoires de la Société Linneenne de Paris*, **4**, 573–621, 1826.]
Fl. Oxon. SIBTHORP. J. *Flora Oxoniensis.* Oxford. 1794.
Fl. Peruv. Chil. RUIZ LÓPEZ, H. *and* J. PAVON. *Flora Peruviana et Chilensis, sive descriptiones et icones plantarum Peruvianarum et Chilensium.* **1–4.** Madrid. 1798–1802.
Fl. Sic. PRESL, C. B. *Flora sicula exhibens plantas vasculosas in Sicilia aut sponte crescentes aut frequentissime cultas. . . .* Prague. 1826.
Fl. Suec. LINNÉ, C. VON. *Flora Suecica, exhibens plantas per regnum Sueciae crescentes, systematice cum differentiis specierum. . . .* 2nd ed. Stockholm. 1755.
Fl. Tristan d'Acugna PETIT-THOUARS, L. M. A. DU. *Mélanges de botanique et de voyages. V. Esquisse de la flore de l'Isle de Tristan d'Acugna.* Paris. 1808.
Freyc. Voy. FREYCINET, L. DE. *Voyage autour du monde, entrepris par order du roi, exécuté sur les corvettes de S.M. l'Uranie et la Physicienne, 1817–20. Botanique* par M. Gaudichaud-Beaupré. Paris. 1826.
Fruct. Sem. Pl. GAERTNER, J. *De fructibus et seminibus plantarum.* **1–3.** Stuttgart, Tübingen and Leipzig. 1788–1807. [3 by C. F. GAERTNER.]
Gard. Dict. MILLER, P. *The gardeners dictionary.* 8th ed. London. 1768.
Gen. Fil. SCHOTT, H. W. *Genera filicum.* Vienna. 1834.
Gen. Pl. BENTHAM, G. *and* J. D. HOOKER. *Genera plantarum ad exemplaria imprimis in herbariis Kewensibus servata definita.* London. 1862–83.
Gen. Pl. Par. JUSSIEU, A. L. *Genera plantarum secundum ordines naturales disposita, juxta methodum in horto regio Parisiensi exaratum anno 1774.* Paris. 1789.
Gen. Spec. Orchid. LINDLEY, J. *The genera and species of orchidaceous plants.* London. 1830–40.
Ges. Nat. Freunde Berl. Mag. *Der Gesellschaft naturforschender Freunde zu Berlin, Magazin für die neuesten Entdeckungen in der gesammten Naturkunde.* **1–8.** Berlin. 1807–18.
Hist. Brit. Ferns NEWMAN, E. *A history of British ferns and allied plants.* London. 1st ed., 1840; 2nd ed., 1844.
Hist. Fil. SMITH, J. *Historia filicum.* London. 1875.
Hist. Pl. Dauph. VILLARS, D. *Histoire des plantes de Dauphiné.* **1–3.** Grenoble. 1786–89.
Hist. Pl. Palat. POLLICH, J. A. *Historia plantarum in Palatinatu electorali sponte nascentium incepta, . . .* **1–3.** Mannheim. 1776–77.
Hort. Kew AITON, W. *Hortus Kewensis, or a catalogue of the plants cultivated in the Royal Botanic Gardens at Kew.* London. 1st ed., **1–3**, 1789; 2nd ed., **1–5**, 1810–13.
Hort. Monac. SCHRANK, F. VON PAULA VON *and* C. F. P. VON MARTIUS. *Hortus regius Monacensis. Verzeichnis der im königlichen botanischen Garten zu München wachsenden Pflanzen.* Munich and Leipzig. 1829.
Hort. Reg. Bot. Berol. LINK, J. H. F. *Hortus regius botanicus Berolinensis, descriptus.* **1–2.** Berlin. 1827–33.
Icon. Descr. CAVANILLES, A. J. *Icones et descriptiones plantarum, quae aut sponte in Hispania crescunt, aut in hortis hospitantur.* **1–6.** Madrid. 1791–1801.
Icon. Fil. HOOKER, W. J. *and* R. K. GREVILLE. *Icones filicum. . . .* **1–2.** London. 1828–31.
Icon. Pl. HOOKER, W. J. *Icones plantarum. . . .* London. 1837–54.
Illustr. BOOTT, F. *Illustrations of the genus Carex.* **1–4.** London. 1858–67.
Ind. Fil. CHRISTENSEN, C. F. A. *Index filicum, sive enumeratio omnium generum specierumque filicum et hydropteridium ab anno 1753 ad finem anni 1905 descriptorum, . . .* Köbenhavn. 1906.
J. Bot. Rédigé DESVAUX, A. N. *and others, ed. Journal de Botanique rédigé par une Société de Botanistes.* **1–2.** Paris. 1808–09.
J. Hist. nat. Paris *Journal d'Histoire Naturelle.* **1–2.** Paris. 1792.
Linnaea *Linnaea.* **1–43.** Halle. 1826–82.
London J. Bot. (Hooker) HOOKER, W. J. *The London Journal of Botany. . . .* **1–7.** London. 1844–48.
Man. Bot. North. U.S. GRAY, A. *A manual of botany of the northern United States.* Boston and Cambridge. 1st ed., New York. 1848.

Man. Herb. CLAIRVILLE, J. P. DE. *Manuel d'herborisation en Suisse et en Valais.* Winterthur. 1811.
Mém. Acad. Sci. Pétersb. *Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg.* St. Pétersbourg. Ser. 6, **1–10.** 1831–59.
Miss. Sci. Cap Horn FRANCHET, A. R. *Phanérogamie. (In Mission scientifique du Cap Horn, 1882–1883.* **5,** 313–400.) Paris. 1889.
Monogr. Epilob. HAUSSKNECHT, C. *Monographie der Gattung Epilobium.* Jena. 1884.
Monogr. Primul. LEHMANN, J. G. C. *Monographia generis Primularum.* Leipzig. 1817.
Monogr. Rumex CAMPDERÁ, F. *Monographie des Rumex, précédée de quelques vues générales sur la famille des Polygonées.* Paris. 1819.
Nat. Arr. Brit. Pl. GRAY, S. F. *A natural arrangement of British plants.* London. 1821.
Neues J. Bot. SCHRADER, H. A. *Neues Journal für die Botanik.* **1–4.** Erfurt. 1806–10.
Not. Helechos Chile LOOSER, G. *Notas sobre Helechos,* **2.** Santiago de Chile. 1936.
Nov. Fl. Suec. FRIES, E. M. *Novitiae florae Suecicae.* **1–7.** Uppsala. 2nd ed., 1828. *Mantissa* **3.** 1842.
Nov. Gen. Sp. HUMBOLDT, F. H. A. VON, BONPLAND, A. J. A. *and* C. S. KUNTH. *Nova genera et species plantarum quas in peregrinatione orbis novi collegerunt, descripserunt, partim adrumbraverunt Amatus Bonpland et Alexander de Humboldt. . . .* **1–7.** Paris. 1816–25.
Nov. Gen. Sp. Pl. POEPPIG, E. F. *and* S. L. ENDLICHER. *Nova genera ac species plantarum. . . .* **1–3.** Leipzig. 1835–45.
Nov. Holl. Pl. Spec. BILLARDIÈRE, J. J. H. DE LA. *Novae Hollandiae plantarum specimen.* **1–2.** Paris. 1804–07.
Orchid. Gen. Spec. KRAENZLIN, F. W. L. *Orchidacearum genera et species exposuit.* **1–2.** Berlin. 1897–1904.
Pflanzengatt. MEDICUS, F. C. *Pflanzengattungen nach dem Inbegriffe sämmtlicher Fruktifikationstheile gebildet und nach dem Sexual-Pflanzenregister geordnet.* Mannheim. 1792.
Pflanzenreich ENGLER, H. G. A., *ed. Das Pflanzenreich, Regni Vegetabilis Conspectus.* 107 Hefte. Leipzig und Berlin. 1900–53.
Pl. Eur. RICHTER, K. *Plantae Europeae, enumeratio systematica et synonymica plantarum phanerogamicarum in Europa sponte crescentium vel mere inquilinarum.* Leipzig. 1890–1903.
Pl. Icon. Ined. SMITH, J. E. *Plantarum icones hactenus ineditae, plerumque ad plantas in Herbario Linneano conservatas delineatae.* London. 1789–91.
Prim. Fl. Holsat. WIGGERS, F. H. *Primitiae florae holsaticae.* Kiel. 1780.
Prodr. CANDOLLE, A. P. DE. *Prodromus systematis naturalis regni vegetabilis, sive enumeratio contracta ordinum, generum, specierumque plantarum. . . .* **1–17.** Paris. 1824–74.
Prodr. Aethéog. BEAUVOIS, A. M. F. J. PALISOT DE. *Prodrome des cinquième et sixième familles de l'Aethéogamie. Les Mousses, les Lycopodes.* Paris. 1804–05.
Prodr. Fl. Nov. Holl. BROWN, R. *Prodromus florae Novae Hollandiae et insulae Van Diemen.* London. 1st ed., 1810; 2nd ed., 1821.
Prodr. Stirp. Gotting. MURRAY, J. A. *Prodromus designationis stirpium Gottingensium.* Göttingen. 1770.
Reg. Veg. Syst. Nat. CANDOLLE, A. P. DE. *Regni vegetabilis systema naturale, sive ordines, genera et species plantarum.* **1–2.** Paris. 1817–21.
Reliq. Haenk. PRESL, C. B. *Reliquiae Haenkeanae seu descriptiones et icones plantarum quas . . . collegit T. Haenke.* **1–2.** Prague. 1830–35.
Rev. Gramin. KUNTH, C. S. Revision des Graminées. . . . (*In* HUMBOLDT, F. H. A. VON, BONPLAND, A. J. A. *and* C. S. KUNTH. *Nova genera et species plantarum.* Pts. 1–44.) Paris. 1829–34.
Skrivt. Nat. Selsk. *Skrivter af Naturhistie-Selskabet.* **1–6.** Köbenhavn. 1790–1810.
Sp. Fil. HOOKER, W. J. *Species filicum. . . .* **1–5.** London. 1846–64.
Spic. Fl. Lips. SCHREBER, J. C. D. VON. *Spicilegium florae Lipsicae.* Leipzig. 1771.
Sp. Pl. LINNÉ, C. VON. *Species plantarum, exhibentes plantas rite cognitas, ad genera relatas, cum differentiis specificis, nominibus trivialibus. . . .* 1st ed., Stockholm. 1753; 2nd ed., 1762–63; 4th ed., **1–5.** Berlin. 1797–1810. [4th ed. by C. L. Willdenow.]
Spec. Umbellif. SPRENGEL, C. *Species Umbelliferarum minus cognitae.* Halle. 1818.
Suppl. LINNÉ, C. VON, fil. *Supplementum plantarum systematis vegetabilium editionis XIII, generum plantarum editionis VI, et specierum plantarum editionis II.* Brunswick. 1781.
Symb. Bot. VAHL, M. H. *Symbolae botanicae, sive plantarum, tam earum, quas in itinere imprimis orientali, collegit Petrus Forskål.* **1–3.** Stockholm. 1790–94.
Syn. Fil. HOOKER, W. J. *and* J. G. BAKER. *Synopsis filicum, or a synopsis of all known ferns etc.* London. 2nd ed. 1874.
Syn. Fil. Lycopod. SWARTZ, O. P. *Synopsis filicum, earum genera et species systematica complectens. Adjectis Lycopodineis et descriptionibus novarum et rariorum specierum.* Kiel. 1806.
Syn. Pl. PERSOON, C. H. *Synopsis plantarum, seu enchiridium botanicum, complectens enumerationem systematicam specierum hucusque cognitarum.* **1–2.** Paris and Tübingen. 1805–07.
Syn. Pl. Glum. STEUDEL, E. G. VON. *Synopsis plantarum glumacearum.* Pts. 1–2. Stuttgart. 1854–55.
Syst. Veg. *Systema vegetabilium.* 14th ed. by J. A. Murray. Göttingen and Gotha. 1774. 15th ed. by J. J. ROEMER and J. A. Schultes. Stuttgart. 1817–30. 16th ed. by C. P. J. Sprengel. Göttingen. 1824–28.
Tabl. Encycl. MONNET DE LA MARCK, J. B. A. P. *Tableau encyclopédique, . . . Illustrations des genres.* **1–3.** Paris. 1791–1823.
Tent. Pteridogr. PRESL, C. B. *Tentamen pteridographiae, seu genera filicacearum praesertim juxta venarum decursum et distributionem exposita.* Prague. 1836.
Veg. Syst. HILL, J. *The vegetable system.* London. 1st ed., 1759–75.
Voy. Coquille BRONGNIART, A. T. *Botanique (Phanérogamie) du voyage autour du monde . . . sur la corvette la Coquille.* Paris. 1829–34.

APPENDIX C
INDEX TO GENERA AND SPECIES

Synonyms are shown in italics.
English and common names are indexed separately at the end.

PLATE I

Maritime tussock formation

a. Pure stand of *Poa flabellata*. Knob Island, Port Stephens, West Falkland.

b. Degraded *Poa flabellata* association, showing stripping of the underlying peat to reveal the parent material. The mature stand of tussock in the middle background has been protected from grazing for several years. North of Cape Meredith, Port Stephens, West Falkland.

Oceanic heath formation

c. *Cortaderia pilosa* grassland, with the margins of the stone runs supporting dwarf shrub heath dominated by *Empetrum rubrum* and including *Blechnum magellanicum*. Below Cerritos Rocks, Mount Usborne, East Falkland.

d. Mosaic of *Empetrum rubrum* and *Cortaderia pilosa* at dwarf shrub heath–tussock grassland ecotone. Near Bodie Creek, Goose Green, East Falkland.

a

b

c

d

PLATE I

PLATE II

Oceanic heath formation

a. *Empetrum rubrum* association, with carpets and smaller cushions of *Bolax gummifera*, showing "cutting" of the *Empetrum* by the prevailing westerly winds. Carancho Bluff, Port Stephens, West Falkland.

b. Dwarf shrub heath developed among rock outcrops, showing *Empetrum rubrum*, a cushion of *Bolax gummifera* and scattered culms of *Festuca erecta*. Tumbledown Mountain, Port Stanley, East Falkland.

c. Pure stand of *Blechnum penna-marina* with projecting plant of *B. magellanicum*. *Empetrum rubrum* in the background. Little Hawks Nest, Port Stephens, West Falkland.

Fen and bog formation

d. *Astelia* association. *Astelia pumila* predominant in the centre, with two patches of *Abrotanella emarginata* towards the top left and *Juncus scheuzerioides* at the top right of the picture. Occasional leaves of *Gunnera magellanica* in the foreground. Tumbledown Mountain, Port Stanley, East Falkland. The scale object (a penny) is 3 cm. in diameter.

a

b

c

d

PLATE II

PLATE III

Feldmark formation

a. Lichen-dominated association (*Neuropogon* sp.). Summit ridge, Mount Adam, West Falkland.

b. *Azorella caespitosa* hummocks to the left with scattered cushions of *Bolax gummifera* and *Valeriana sedifolia* to the right. West slopes of Calm Head, Port Stephens, West Falkland.

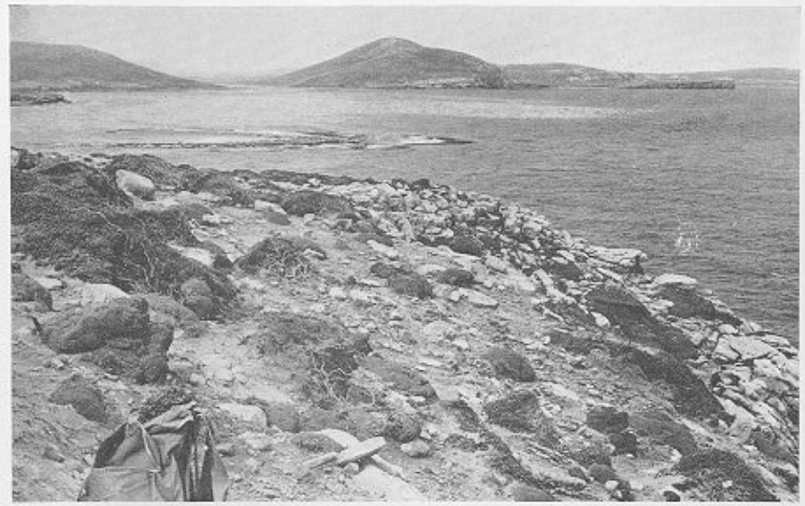
Feldmark and scree species

c. *Valeriana sedifolia*. Summit area, Mount Usborne, East Falkland. The scale object is 9 cm.

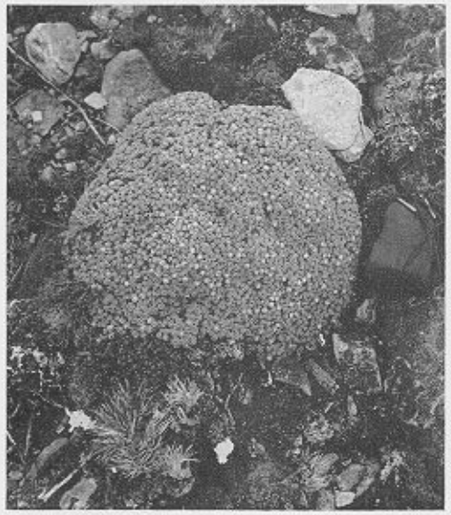
d. *Nastanthus falklandicus*. Near Cape Meredith, Port Stephens, West Falkland. The scale object is 4 cm.

e. *Nassauvia serpens*. Cerritos Rocks, Mount Usborne, East Falkland. The knife handle is 10 cm.

a

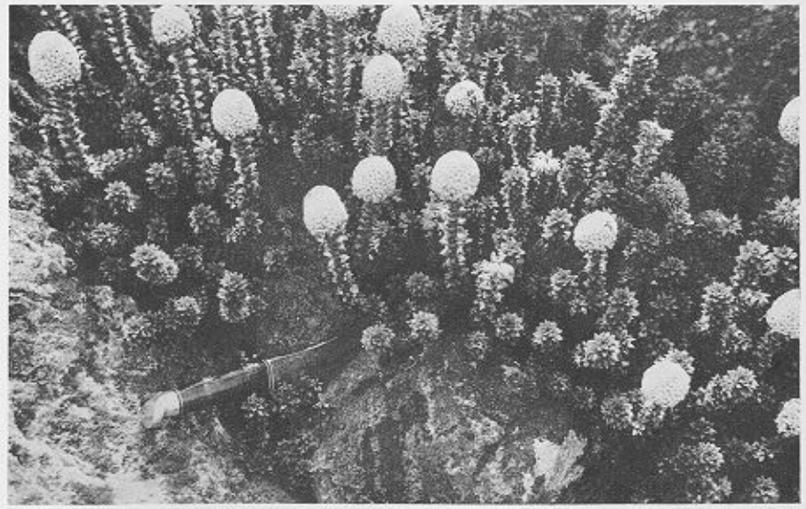


b



c

d



e

PLATE III

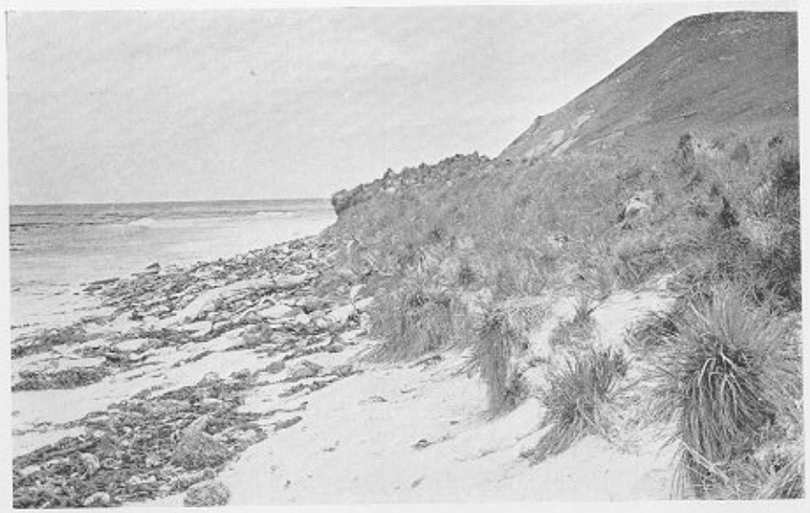
PLATE IV

a. *Ammophila* association. Empire Beach, Ten Shilling Bay peninsula, Port Stephens, West Falkland.

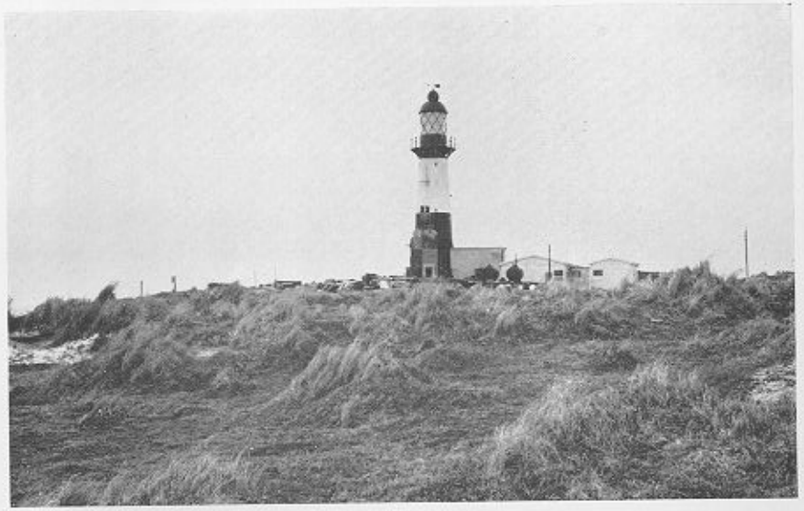
b. *Ammophila* association. Formerly mobile dunes which were planted with *Ammophila arenaria* about 1923. The slacks support a dense turf dominated by *Juncus scheuzerioides*. Cape Pembroke, East Falkland. Compare this photograph with the one of same area published by Hubbard (1937, pl. 8).

c. *Senecio candicans* association. Surf Bay, Port Stanley, East Falkland.

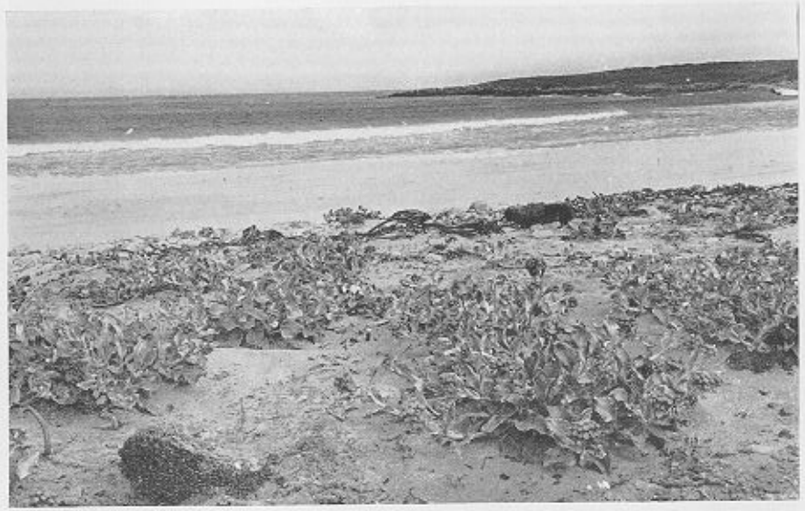
d. *Crassula* association among rocks above high-water mark. Hooker's Point, Port Stanley, East Falkland. The scale object is 4 cm.



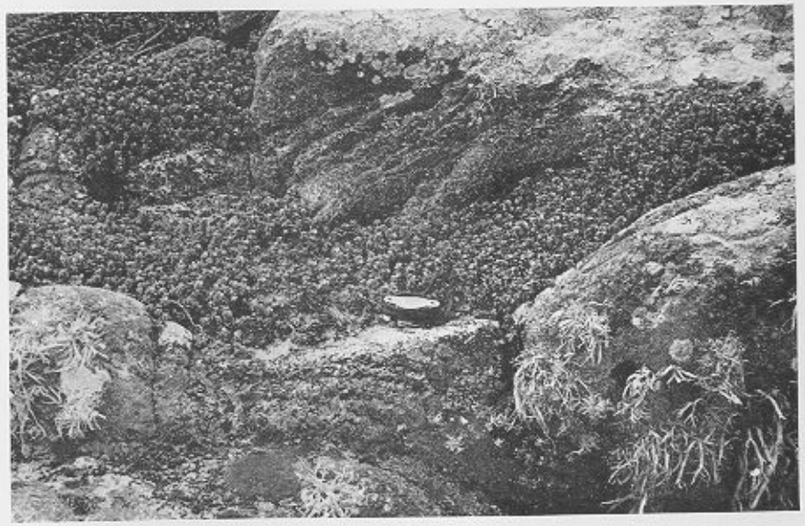
a



b



c



d

PLATE IV

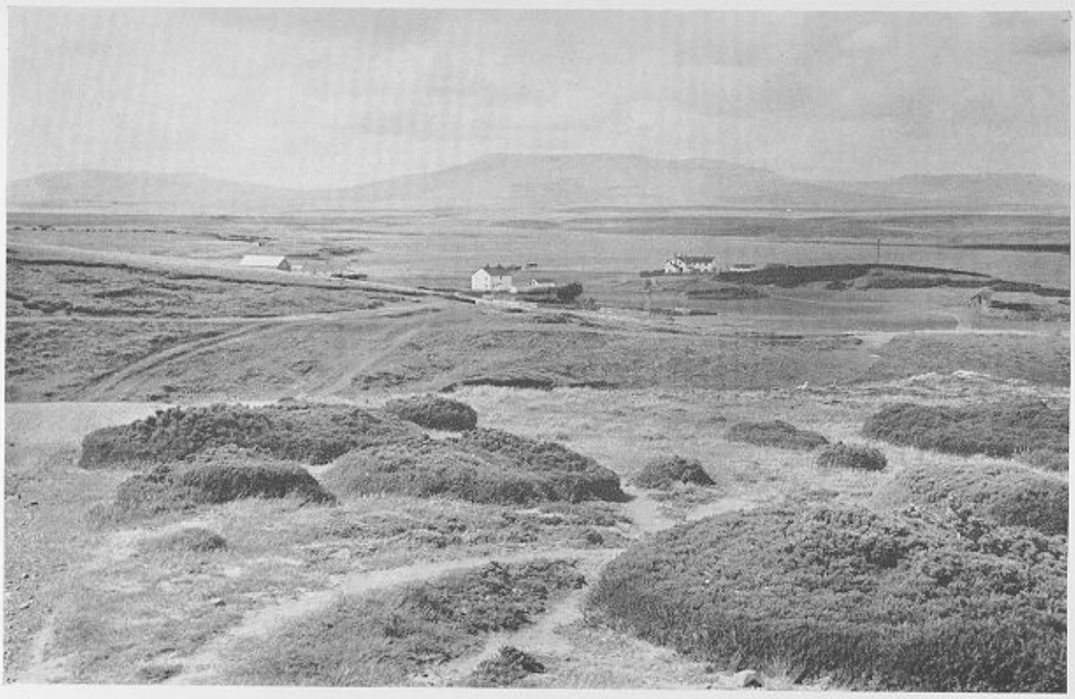
PLATE V

a. *Ulex europaea* thickets. Darwin, East Falkland. Mount Usborne is in the distance.

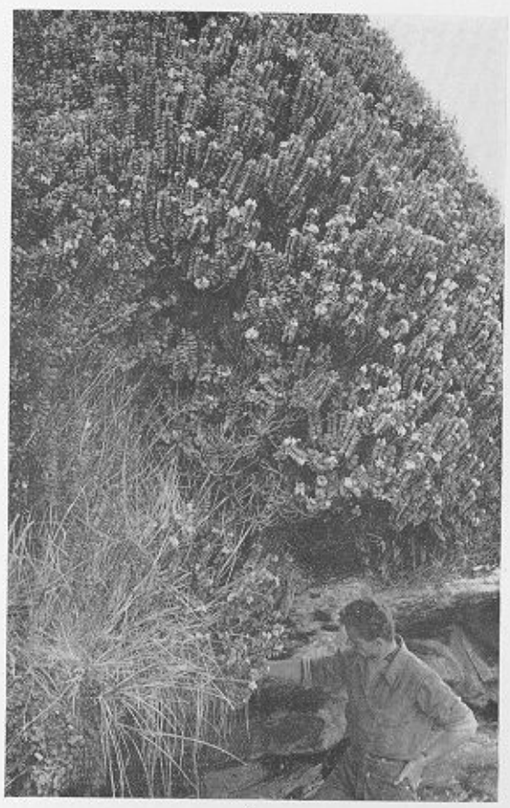
b. *Hebe elliptica*. Carew Harbour, Port Stephens, West Falkland.

c. *Eleocharis* association. Emergent stand of *Eleocharis melanostachys*, with *Callitriche antarctica* covering water surface in foreground and *Epilobium cunninghamii* behind. Burnside Creek, Darwin, East Falkland.

d. *Eleocharis* association, with robust form of *Caltha sagittata* at water margin. Burnside Creek, Darwin, East Falkland.



a



b

c

d

PLATE VI

Inflorescences of *Carex* (a–j), *Tetroncium* (k) and *Uncinia* (l).

a. *Carex trifida.*
b. *C. aematorryncha.*
c. *C. magellanica.*
d. *C. fuscula.*
e. *C. decidua.*
f. *C. flacca.*
g. *C. macloviana.*
h. *C. curta.*
i. *C. caduca.*
j. *C. microglochin.*
k. *Tetroncium magellanicum.*
l. *Uncinia brevicaulis.*

The scale at the bottom of the plate is 2 cm. for a, b and e; 3 cm. for c, d, f, g and h; and 4 cm. for i–l.


a
b
c
d
e
f
g
h
i
j
k
l