A GENERAL SURVEY

OF THE

SOMALILAND PROTECTORATE

1944–1950

(C. D. & W. Scheme D.484)

By JOHN A. HUNT, M.A., F.R.G.S., F.G.S.

(*Final Report on "An Economic Survey and Reconnaissance of the British Somaliland Protectorate 1944-1950," Colonial Development and Welfare Scheme D.*484)

(1951)

To be purchased from THE CHIEF SECRETARY, HARGEISA, SOMALILAND PROTECTORATE, *and the* CROWN AGENTS FOR THE COLONIES, 4 MILLBANK, LONDON, S.W.1.

Price: 28/-

FOREWORD

A GENERAL SURVEY of a little-known part of the world is not likely to become a "best-seller," yet in this survey one may find a fascinating number of facts which will appeal not only to a small band of colonial officials but to all who are interested in men, animals and plant life.

The author is a scientist with long experience of the country and the people, which is very evident in this survey. He is at times challenging and provocative—perhaps deliberately so.

A foreword is not the place to cross swords, but the author has asked for an authoritative opinion on his statement that the Protectorate is not overstocked.

The advent of British Administration and its struggles over sixty-seven years have checked the ravages of tribal raiding and droughts, both of which took a heavy toll of human and animal life. It also brought medical science. No such protection was available for the vegetation on which the livestock—and consequently the people—live. The author is therefore correct when he says that the country is not overstocked *for the needs of the people*, but his insistence on the care of the grazing seems to point to the need for the conservation of the grazing if it is to support sufficient livestock.

It is confidently hoped that this survey will become a handbook for the administrator and a textbook for the scientist, and that it will be preserved, together with the Koran and the Bible, by those who, in the author's words, "love the country and its people."

E. P. S. SHIRLEY.

HARGEISA,

January, 1952.

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SUMMARY

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Special attention has been paid to those aspects of geography which had not previously been sufficiently studied by research workers in the Protectorate (e.g. Time, Topography, Meteorology, General Geology, and the Ecology of nomadic stock-herding tribesmen).

2. It is not possible to summarize further the factual statistics and maps, a list of which is given in the Table of Contents above.

3. It is hoped that the factual material contained in Chapters III to IX will be of value for reference purposes to all interested in the Protectorate, of use in planning positive development and in preventing expenditure on uneconomic developmental schemes.

The following recommendations have been made:—

4. Maps made by amateur surveyors should, unless published, be carefully filed at Government Headquarters (para. 556).

5. Meteorological recording should be continued, and evaporation-recording posts set up (para. 557).

6. A Geological Survey of the Potential Mineral Belt should be carried out (para. 558).

7. Drilling for water in the Haud should be continued when possible (para. 558).

8. A corehole should be made in the Nogal when possible, and the cores examined by a chemist (para. 558).

9. A trial borehole at Dagahh Shabel might open up a minor oil industry (para. 558).

10. A soil expert should make a survey of the Protectorate (para. 558).

11. Game records should be filed at Government Headquarters (para. 560).

12. Further attention should be paid to the dried fish industry and cheese-making (paras. 561, 563).

13. The cultivation of coffee and tobacco should be attempted (para. 564).

14. Damas should be planted experimentally in the Nogal, and Daran in the Central and Western " digit " and " aro " salty belts (paras. 299, 345).

15. Efforts should continue to give leadership to the Somali graziers in the organization of controlled grazing. (A tentative scheme is outlined (para. 565).)

16. The conservation of rainwater in the " waterless areas " should be improved to help in the better distribution of stock (para. 572).

17. The employment of the Somali in other countries should be encouraged (para. 574).

18. A Development Secretary is needed to co-ordinate Development Schemes, and preserve records of work achieved (para. 575).

19. There should be more and widely distributed official and unofficial permanent centres in a country where most of the people and their administrators should be nomadic (para. 576).

20. A first-class road is recommended from Hargeisa, through Odweina to Burao (para. 577).

21. A road is recommended from Berbera through Dur Elan, Wireg Pass, and Gal Idleh to Buran and Hudun (para. 577).

22. The road from Bawn to Geriso and Silil should be kept open (para. 577).

23. Regular, however infrequent, bus and mail services are needed between major centres (para. 578).

24. Berbera may become the capital again for economic reasons in spite of the expenditure already incurred in improving Hargeisa (para. 579).

25. A regular, however infrequent, direct shipping service is needed between Berbera and Britain (para. 578).

26. Basic labour wages should be tied to the prices of really essential commodities (para. 580).

27. It is believed that the proportion of executive Administrative Officers to the total number of Government Officials is too low (para. 581).

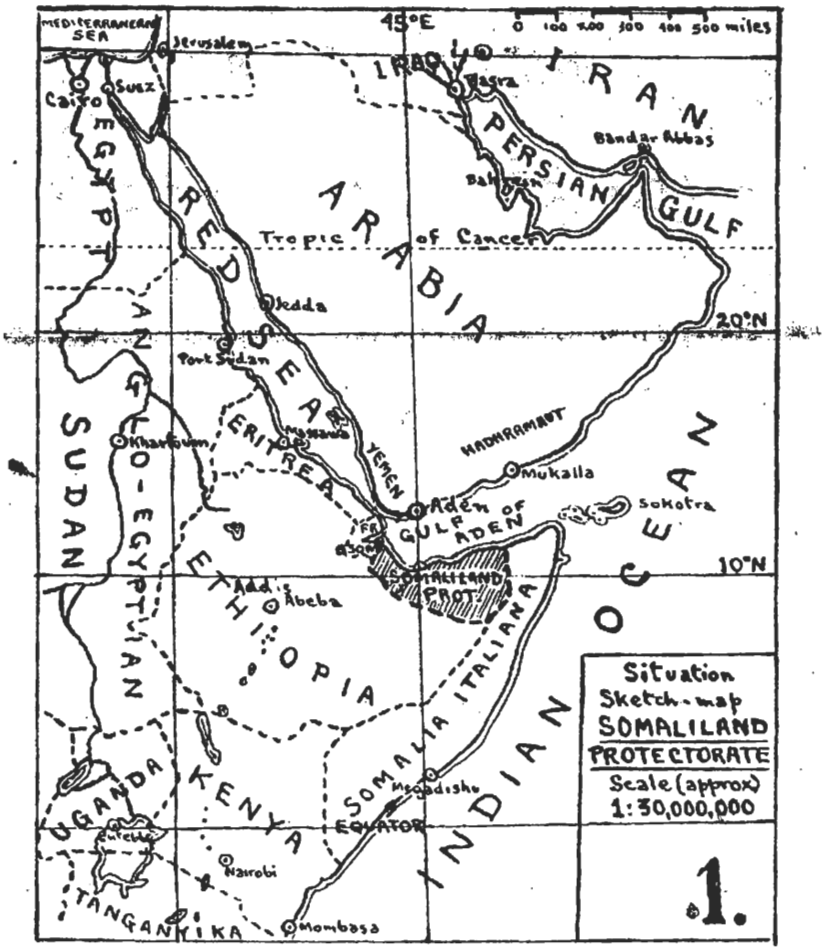
28. The importance of publication and cheap distribution of reports, maps, and records is stressed (para. 582).

29. In conclusion, the Administration should be carried out by officials who love the country and its people, and development should be considered from new geographical angles, having regard to the world improvements in rapidity of transport and communications (paras. 586, 587).

CHAPTER II

INTRODUCTION

30. (*Illustration* 1.)



A. Situation, Area, and Position of Protectorate

31. The Somaliland Protectorate, as shown in the above map (illus. 1) is on the southern (African) shore of the Gulf of Aden, its nearest neighbours being French Somaliland, Ethiopia and Somalia Italiana on the African coast, and Aden and Arabia across the Gulf of Aden. More distant neighbours are Persia, Iraq, the Sudan and Kenya.

The Protectorate consists of:—

(i) The coastal lowlands (Guban) along the Gulf of Aden coast.

(ii) The spur from the Harar Plateau forming the *Main Watershed Mountains* some 60 miles inland from the Gulf of Aden in the west to about 15 miles in the east.

(iii) The *Plateau* country south of these mountains, sloping gently to the Italian Somaliland Indian Ocean coast in the S.E.
The mountains and plateau are collectively known as the " Ogo," but this term is often used particularly for the mountains and upper part of the plateau, the southern lower plateau area being called the *Haud*.

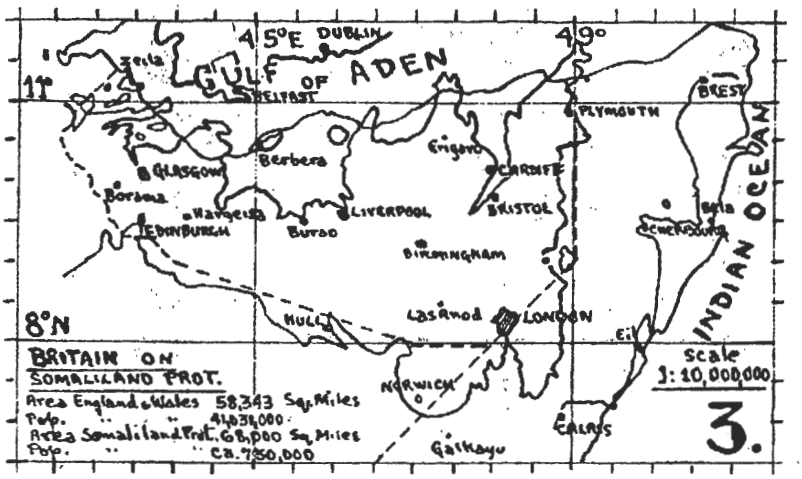
32. Illustrations 4 and 7 (in pocket) show the general topographical features of the country.

The main variations from the general division into Guban, Ogo, and Haud, described above are:—

(i) The marked N.W./S.E. " *Wireg* " *Pass* between Onkhor and the Nogal, which sets the Main Watershed Range closer to the coast in the eastern part of the Protectorate.

(ii) The *Sawl Haud* and *Heman Basin* in the Ogo to the east of this pass

33. (*Illustration* 3.)



34. As seen in the above map (illus. 3), the area of the Protectorate is approximately 68,000 square miles, or a little more than that of England and Wales. Together with the normal grazing areas of the Protectorate tribes (illus. 11, para. 94), over the frontiers, the area is about 90,000 square miles.

B. The Purpose

35. The Purpose of the General Survey of the Somaliland Protectorate was briefly "The collection, correlation, and distribution of data, not being collected by already existing departments, with a view to recommending further research or development, or alternatively discouraging uneconomic development schemes. Also to make available data necessary for wise administration, primarily by the study of the Human Ecology of the nomadic stockherders of the Protectorate and Grazing Areas."

(Ecology is the study of organisms in relation to their environment, and in this case the environment of the nomad is described as the General Geography of the Protectorate and Grazing Areas.)

36. The original proposals for which the grant "Colonial Development and Welfare Scheme No. D.484" was made, were as follows:—

(i) Compilation of existing topographical maps, and improvisation of other maps as a basis for the General Survey.

(ii) Research on the nomadic movements of tribes and their stock, and a census of people and stock.

(iii) Collection of seven years meteorological data, especially rainfall.

(iv) Survey of water supplies, with recommendations for improvement.

(v) Geological Survey, especially of the potentially mineralized areas.

(vi) Co-operation with the Agricultural Department in the collection of botanical and zoological data.

(vii) Mapping of townships and roads.

(viii) Collection of information of military importance, routes, impasses, airfields, etc.

37. Such a survey had first been suggested by the writer in 1937, but had been delayed on the ground that there was not a sufficiently accurate set of topographical maps of the area. Whilst it is necessary, however, to have maps as a basis for any survey, improvised topographical maps can be used for reconnaissance survey.

38. In 1943 the then Military Governor, Brigadier G. T. Fisher (now Sir Gerald Fisher, K.B.E., C.S.I., C.I.E.), instructed the writer to carry out the Survey, and Treasury sanction

C. Staff

39. The staff employed for this General Survey was as follows:—

(i) *Survey Officer (in charge)*
J. A. Hunt ... ... Sept. 1943—31st Mar. 1951.

(ii) *Assistant Survey Officer*
N. M. Viney ... ... May 1944—Sept. 1945.

(iii) *Mineral Geologist*
S. Stock ... ... June 1946—Apr. 1948.

(iv) *Water Geologist*
W. A. Macfadyen ... ... Dec. 1946—Dec. 1948.

(v) *Assistant Survey Officer*
D. D. Macdonald ... ... Feb. 1947—Apr. 1948.

(iv) *Assistant Survey Officer*
A. J. Wood ... ... Feb. 1947—Apr. 1948.

(vii) *Senior Native Assistant Surveyor*
Hassan Nur ... ... Mar. 1944—Mar. 1951.

In addition various clerks were seconded from the Protectorate clerical staff, and varying numbers of Somalis (without whose assistance the Survey could not have been carried out), up to a maximum of 82, were employed as observers, fieldmen, drivers, etc.

40. The Survey, begun under wartime conditions with lack of adequate staff, equipment, or transport, soon had to be modified as to purpose. The diagram on page 2 of Dr. Worthington's "Science in Africa" illustrates very nearly the crystallized form which the purpose of the Survey had taken by 1944. This is a building up from Topography as a basis, through Meteorology and Geology, Soil Science, Vegetation, Animal Life, to the people and their domestic stock. This Report has therefore been arranged in chapters in that order.

D. Method

41. Important guiding principles were soon found to be that:—

(i) Reconnaissance is necessary before any major advance is made, and survey is necessary before expenditure on a major developmental scheme.

(ii) In all research it is necessary to vary investigation from the particular to the general and back to the particular. This is best illustrated by the racking backwards and forwards of a camera lens to vary the focus. In practice one should examine the surface of the ground in detail, fly to a considerable height to get a wider view over a larger area, and return to earth again to prove in detail one's general impressions from the air. If this cannot be done, it is possible to use a series of maps of different scales, reducing the detailed work on large-scale maps for inclusion on small-scale maps of larger areas. After examination of these small-scale maps the field is returned to and theories followed up in detail.

This method of survey has been most important in trying to cover the whole area concerned in only seven years.

42. The detailed methods by which the work has been carried out have been explained in the Annual Reports of the General Survey, and are briefly repeated in the relevant chapters of this Report as regards each subject. There is in the annual reports a good deal of detail given especially for the use of Somali Assistants.

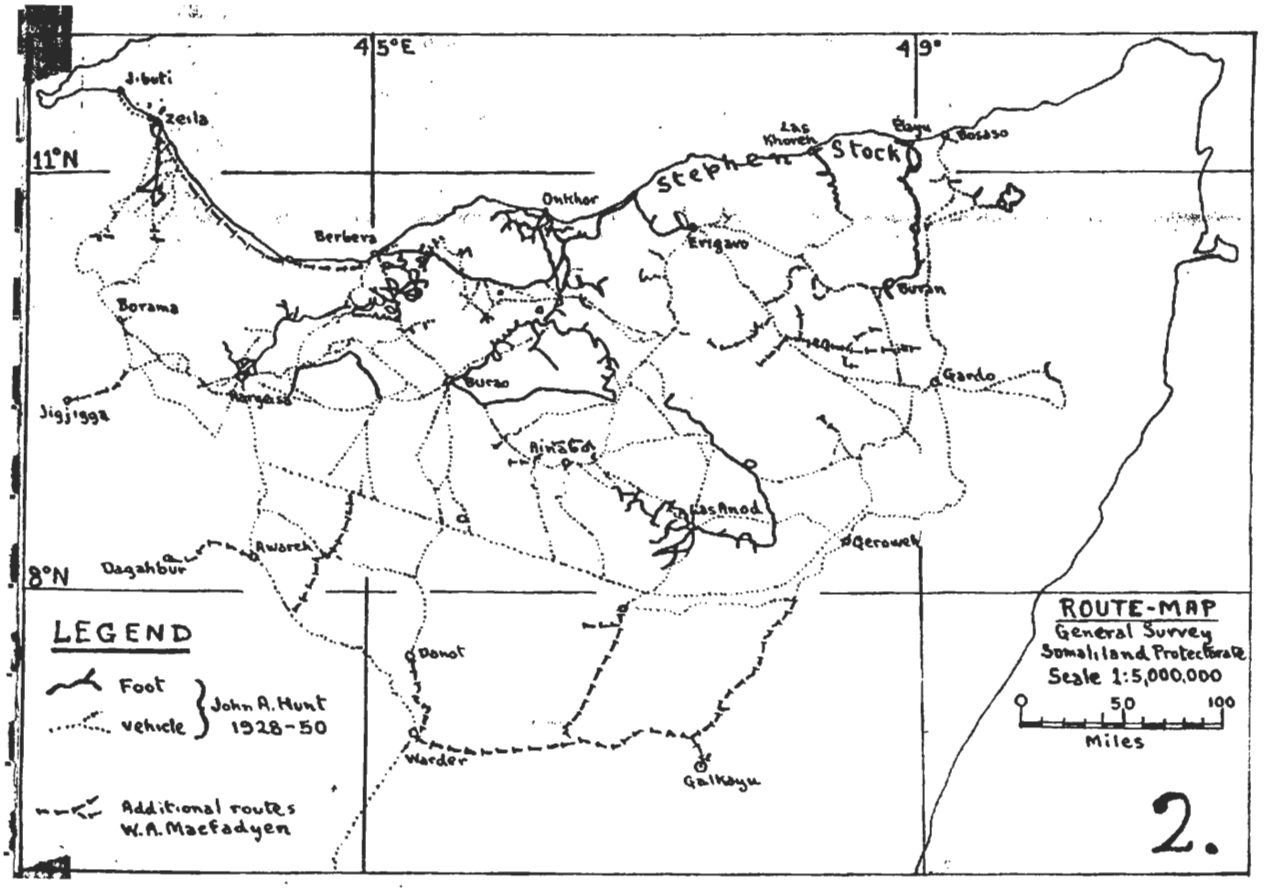
E. Illustrations

43. It is accepted that maps are the best form of summary, and the quickest means of assimilating knowledge of a country. Maps have therefore been prepared lavishly for all the Annual Reports, and 49 maps have been drawn to illustrate this Report. It is believed that coloured maps are necessary for easy and rapid assimilation of information. Owing, however, to lack of funds for printing coloured maps, the writer, who is only an amateur draughtsman, has prepared these 49 illustrations for printing in black and white. The only advantage of black-and-white illustrations over the clearer coloured ones, is that they can be printed direct from the writer's original tracings, without the danger of errors due to re-draughting.

50. Apart from these achievements, the value of the results of the General Survey must be judged from this Final Report. Including publication of this, the cost of the General Survey from September 1943 to March 1951 will have been approximately £56,000. This does not include approximately £12,000 spent on water drilling in connection with C. D. & W. Scheme D.486—a programme which did not succeed but has not yet been completed (*vide* General Survey Report, 1949).

51. The purpose of this Report, apart from being an account of the expenditure of £56,000, is to consolidate the results achieved by the General Survey, and as far as possible to form a useful book of reference for all those interested in the Somaliland Protectorate. There is a certain amount of repetition in the different chapters, because few people will want to read the whole Report but only to refer to those chapters connected with their own interests.

52. (*Illustration* 2.)



53. The above map is important in that it shows the areas known to the writer personally, and the areas known to him at second hand from Dr. Macfadyen or Mr. Stock. It shows at the same time the areas about which the writer knows nothing at first hand. These lacunae should be borne in mind as the Report is read.

F. Delaying Factors

44. Apart from the difficulties in obtaining suitable European staff, equipment, and transport for the survey, and especially in synchronizing the arrival of these, a number of other delaying factors are mentioned here for the assistance of those planning and estimating for other surveys.

45. The General Survey was planned on the assumption that the results would be of considerable interest to the Administration as a whole, even piecemeal as they were obtained. The writer, wishing to give all his time to this research, chose headquarters for the Survey away from Government Headquarters. Although this allowed him to give more time to research, nearly the whole of the Administration and Headquarters staff changed during the course of the Survey, with the result that interest in the work of the Survey flagged, and co-operation deteriorated. For this the writer must to some extent blame himself for not having given sufficient time to social contacts. There is a frequent tendency for keen scientists to lose touch with that part of the community which is not interested in their work.

46. Another delaying factor was the detachment of officers, engaged to carry out the General Survey, for other duties. N. M. Viney was detached permanently to work in the Secretariat. Dr. Macfadyen spent about four months, out of his two years tour of service, on duties not included in the General Survey programme. The writer supervised the Veterinary Department for seven months, and spent most of 1949 in supervising the actual water-drilling operations in the Haud, as geologist in charge for C. D. & W. Scheme D.486: Water drilling.

47. These detachments were unavoidable, but in planning a scheme to be carried out within a certain time limit, such detachments should be foreseen, and if possible avoided, since they result in a use of funds voted for a specific scheme being deflected in fact to other uses.

G. Achievements

48. The General Survey as proposed was not completed. The programme was too ambitious. The detailed survey of the Onkhor area, as regards topography and geology with notes on botany and zoology (described in the 1945 Annual Report of the General Survey), is the type of work which it had been hoped to carry out over the whole of the Protectorate, in addition to the research on seasonal meteorology and tribal movements. In fact it is now believed that such a detailed survey would take 30 years for a trained " general surveyor."

49. What has actually been achieved, apart from the production of this Report, is as follows:—

(i) The following interim publications have been distributed:—

(B.S.G.P.—British Somaliland Government Publication).

B.S.G.P. 1. Genealogies of the tribes of British Somaliland and Mijertein.

B.S.G.P. 3. Report on General Survey of British Somaliland, 1944.

B.S.G.P. 4. Gazetteer: British Somaliland and Grazing Areas.

B.S.G.P. 7. Report on General Survey of British Somaliland, 1945.

B.S.G.P. 8. Report on General Survey of British Somaliland, 1946.

B.S.G.P. 9. A Bibliography of British Somaliland.

B.S.G.P. 10. Report on General Survey of British Somaliland, 1947.

— Report on General Survey of Somaliland Protectorate, 1948.

— Report on General Survey of Somaliland Protectorate, 1949.

These contain a large number of maps, diagrams and statistical tables which cannot all be reproduced in this Final Report on the General Survey. Some officers in the Protectorate are making constant use of these interim publications.

(ii) Mr. Stock's reports on the " Geology and Mineral Resources of N.E. corner of Somaliland Protectorate."

(iii) Dr. W. A. Macfadyen's combined reports on " The Water Supplies and Geology of parts of British Somaliland," which is being published.

(iv) Dr. Macfadyen's proposals for exploratory drilling for water in the Haud. (The drilling of this programme has not been completed.)

CHAPTER III

TIME DIMENSION

54. Before proceeding to the topography of the area, it is necessary to know something of the Dimension of Time, especially as regards local divisions and nomenclature. This is particularly important in the case of a country of nomadic stock-herders, who move over wide areas, and from lowlands to highlands and back again, according to the seasons. The work of these stock-herders, as any stock-farmer, veterinary surgeon or doctor will know, never entirely ceases, and often must be done while other people sleep or go on holiday.

55. As this Report concerns a survey intended to be of assistance to any administration of the largely nomadic Somali people, the time element is briefly discussed as a basis, together with topography, upon which the rest of the Report must be built up.

56. The necessary data are given for the calculation of the seasonal calendar in the future in Table 2 below. This calendar shows the seasons from August 1944 till August 1952 only, but subject to correction of the data, it should be simple to continue the calculation of the Somali seasons in advance. The necessary data for the Moslem years are given annually in "Whitaker's Almanack."

57. (*Table* 1.) See page 11.

58. (*Table* 2.) See pages 12, 13.

TIME IN THE SOMALILAND PROTECTORATE

Kirk, in his Grammar of the Somali language, gives a good résumé of this in his Appendix I. The following note shows some variations and additions:—

The 24 hours are divided into four parts:—

(i) Malin		day
	(a) Gelin hore	before noon
	(*b*) Gelin dambe	after noon
(ii) Haben		night
	(*a*) Gelin hore	before midnight
	(*b*) Gelin dambe	after midnight

"Malin" and "Haben" together are two "Anamal" and make up one complete 24 hours.

The times of day are mostly connected with Moslem prayer, grazing, milking, etc. They do not fit exactly with the 24-hour clock, because the day starts with sunrise, which varies in the course of the year from about 5.30 to 6.30 hours. They may however be shown approximately as follows, though always with some degree of uncertainty:—

(i) (*a*) ARORTI		About half an hour from sunrise.
	BARQAD YER...	From Arorti till 08.00 hours.
	HEKSIN	Till about 09.00 hours.
	BARQA	09.00 to 10.00 hours.
	BARQA KULUL	About 10.00 to 11.00 hours.
	HAD	11.00 to 12.00 hours.
(*b*) DUHUR		12.00 to 13.30 hours
	DUHUR DABADI	13.00 to 14.00 hours
	ASR DER	14.00 to 15.30 hours
	ASR GABAN	15.30 to 17.00 hours.
	GALAB	17.00 to 17.40 hours.
	GABAL AD	17.40 to 18.00 hours. (red setting sun).

(ii) (*a*)	MAQRIB	18.00 hours.
	FID	18.00 to 19.00 hours (till sky is dark).
	AWEIS	19.00 to 21.00 hours.
	SAQDA DEHHE	23.00 to 24.00 hours.
(*b*)	SAQDA DEHHE	24.00 to 01.00 hours.
	JID	Dawn.
	ARORTI HORE	First dawn to sunrise.
	WA BERI	Clear light before sunrise.
	ARORTI	06.00 hours.

In Mogadishu the 12 hours start at 06.00 and 18.00 hours, the Arabic clock being used.

The week is more or less as in Arabic:—

AHAD	Sunday.
ISNIN	Monday.
SALASA	Tuesday.
ARBA'A	Wednesday.
KHAMIS	Thursday.
JEME'E	Friday.
SABTI	Saturday.

The month is the lunar month of 29 to 30 days as in the Arabic Calendar (and as will be seen below identical or similar to the Calendar on which Easter is reckoned in the Church of England Prayer Book).

Table 1 shows the Somali lunar months (with Arabic names following) compared with the Gregorian solar calendar from October 1944 to August 1952.

The month is also divided into two halves:—

ADO	First to fifteenth day of the moon (the light half).
GUDUR	Sixteenth day to next new moon (the dark half).

The year is the twelve Moslem months as shown below (Table 1). It is, however, divided in various other ways according to seasons of rain, temperature and monsoon winds.

Roughly speaking the Gu proper begins with the dropping of the N.E. Monsoon and the beginning of the S.W. Monsoon at approximately April 1st and lasts six months until the end of September. The Jilal six months begins when the S.W. Monsoon drops and the N.E. Monsoon begins on about October 1st, lasting until the end of the following March.

Accepting this division of the year into two, the JILAL would include all the *Dhair*, *Wajina*, *Hais* and *Todob* rains. The GU would start in April with *Daido* and include *Sermawedo*, *'Aul*, *Sagallo*, and *Karan*. The GU would thus include both the calm windless *Kalil* periods of April and September.

In fact the Somali Seasonal Calendar for the Somaliland Protectorate is very much more complicated (see Table 2). It is based on a combination of:—

(i) The old Persian New Year (perhaps dating from the Persian occupation of Zeila) on about August 4th, DABSHID.

(ii) The Moslem Lunar Calendar.

(iii) A system of shifting the Lunar Calendar every three years to bring it into better adjustment with the Solar Calendar, and therefore the actual rain seasons. This seems to be analogous with the calculation for the Christian Church Calendars.

The following information from which the Calendar of Table 2 is compiled, was supplied by Mr. Amir Dualeh Elmi, of the Habr Toljaala tribe (rer Musa Yusuf). He is also an expert on weather lore, much of which is calculated by him from the occultation of the star SPICA (in Somali DIRIR) or near-occultation by the moon, and observation of meteorological data at these times. The discussion of DIRIRS, however, confuses the issue, as it does not in fact affect the Calendar though many Somalis believe it to do so. DIRIRS are really concerned with meteorological forecasting (and perhaps astrology).

The date of DABSHID (approximately August 4th) is handed down from father to son and calculated by adding the necessary number of days (about 11) to the Lunar Calendar date each year. The Moslem lunar date for DABSHID in A.H. 1369 (in 1950) was 19th Sonfur (Shawal).

After this constant solar date (August 4th) the first 40 days are DHAIRTA HALALOD (i.e. to the end of the S.W. Monsoon), the next 20 are DHAIR HABIS (usually with little wind and little thunder and lightning), and the next 30 (i.e. the real marked beginning of the N.E. Monsoon and usually important widespread rains) are DHAIRTA DIRIROD.

The 90 days from August 4th to November 2nd are the Dhair quarter proper.

The next 92 days, together with the Dhair quarter, make up the six months of the JILAL half-year (August 5th to February 3rd).

The 182 days preceding Dabshid (approximately February 4th to August 3rd) are the GU half-year.

An additional season based on Dabshid is the KARAN, which is 20 days before and 20 days after Dabshid (i.e. July 15th to August 24th). The first half of this is also called SAMALAHO, and the second half is also part of the Dhair Halalod.

Thus it is seen that the simple division of the year into the six months Jilal followed by six months Gu, and the dates of the Karan and the three Dhairs, are constant Gregorian Solar Calendar dates.

The detail of the rest of the year is unfortunately based on the Mohammedan Lunar Calendar. Corrections are made only every third Moslem year, so that these seasons vary in a cycle of three years by 22 days (?) on the Gregorian Solar Calendar (and therefore in relation to Dabshid and the Dhair).

When the Dhair Dirirod finishes (on November 2nd), the balance of that Moslem month is called WAJINA, which may be any number of days from 1 to 30.

The next Moslem month after Wajina is DHAIRTA DAMBESAMA, and the next after that is HAIS.

Then there is another break. If Hais finishes before the end of the 182 (some say 177) days of the Jilal half-year, there is a gap of anything up to two months (called MEHRJAN) during which any rain which falls is also called HAIS rain.

In the seventh month after Dabshid the GU starts. This, in A.H. 1368–70 (i.e. November 3rd, 1948, to September 3rd, 1951), is the Somali month Rejal Dehhe (Arabic Jomada I). The following three (Moslem) years it will be Rejal Dambe (Arabic Jomada II), and so on, and the Somali season of this seventh Moslem month after Dabshid is called TODOB (or LEHHKOR).

The succeeding Moslem lunar months are called DAIDO, SERMAWEDO, 'AUL and SAGALLO (or SAKARO). From Todob to Sagallo, both inclusive, is thus seen to be five Moslem months out of the six months which, ending on August 4th, make up the Gu half-year. Part of the missing six months may precede the Todob (during February if Todob is in March), and is then an extension of Hais. Part may come between the Sagallo month and Dabshid day, being thus included in the first half of Karan (Samalaho).

The following notes have been made on the variable Somali rain seasons, after the comparative calendar (Table 2) had been drawn up:—

Wajina starts constantly on November 3rd but varies in length from 1 to 30 days, completing the lunar month in which November 3rd falls.

Dhair Dambesama is a Moslem lunar month in November to December. The variation in date of its beginning is 25 days in the period 1944–51 shown in the Calendar.

Hais is a Moslem month in December to January varying in starting date up to 25 days. The Gregorian Calendar's New Year's day is always in Hais.

Mehrjan Hais is one to two months in January to February, to complete the six months of the Jilal half-year. Any rain falling in this Mehrjan is included in Hais.

Todob (the month of DIRIR ADI ASSEYE) is a lunar month in February to March, varying in starting date up to 25 days.

Daido is a lunar month in March or April, varying in starting up to 25 days. (The Christian Easter Sunday is always the Sunday after the full moon of Daido.)

Sermawedo is a lunar month in April to May, varying up to 25 days. Most stock-breeders try to mate sheep so that lambs will be born in Sermawedo. The 25 days variation (according to the Solar Calendar) in the best date for the birth of the lambs, is reminiscent of the custom of planting potatoes about Good Friday in parts of Britain.

Possibly there is a lesson in meteorological forecasting to be learned from the ancient lore of these agriculturalists and stock-breeders.

'Aul is a lunar month in May to June varying up to 25 days.

Sagallo (or Sakaro) is a lunar month in June to July varying up to 25 days.

Mehrjan is the balance of days, if any, between the end of Sagallo and the beginning of the Karan (Samalaho) on July 15th.

From July 15th the Somali rain seasons are constant by the Solar Calendar, till the end of the Dhair on November 2nd.

TABLE 1

TABLE SHOWING FIRST DAYS OF SOMALI/ARABIC LUNAR MONTHS IN GREGORIAN DATES, 1944-52

Somali Months	Arabic Months	No. days	A.H. 1363	A.H. 1364	A.H. 1365	A.H. 1366	A.H. 1367	A.H. 1368	A.H. 1369	A.H. 1370	A.H. 1371
DAGO	Muharram	30	—	17.12.44	6.12.45	25.11.46	15.11.47	3.11.48	24.10.49	13.10.50	2.10.51
BULDUROHORE	Saphar	29	—	16. 1.45	5. 1.46	25.12.46	15.12.47	3.12.48	23.11.49	12.11.50	1.11.51
BULDURODAMBE ...	Rabia I	30	—	14. 2.45	3. 2.46	23. 1.47	13. 1.48	1. 1.49	22.12.49	11.12.50	30.11.51
RAJAL HORE	Rabia II	29	—	16. 3.45	5. 3.46	22. 2.47	12. 2.48	31. 1.49	21. 1.50	10. 1.51	30.12.51
RAJAL DEHHE	Jomada I	30	—	14. 4.45	3. 4.46	23. 3.47	12. 3.48	1. 3.49	19. 2.50	8. 2.51	28. 1.52
RAJAL DAMBE	Jomada II	29	—	14. 5.45	3. 5.46	22. 4.47	11. 4.48	31. 3.49	21. 3.50	10. 3.51	26. 2.52
SEBUHH	Rajab	30	—	12. 6.45	1. 6.46	21. 5.47	10. 5.48	29. 4.49	19. 4.50	8. 4.51	27. 3.52
WABERIS	Shaaban	29	—	12. 7.45	1. 7.46	20. 6.47	9. 6.48	29. 5.49	19. 5.50	8. 5.51	27. 4.52
SON	Ramadan	30	—	10. 8.45	30. 7.46	19. 7.47	8. 7.48	27. 6.49	17. 6.50	6. 6.51	26. 5.52
SONFUR	Shawwal	29	—	9. 9.45	29. 8.46	18. 8.47	7. 8.48	27. 7.49	17. 7.50	6. 7.51	25. 6.52
SIDATAL	Dulkaada	30	17.10.44	8.10.45	27. 9.46	16. 9.47	5. 9.48	25. 8.49	15. 8.50	4. 8.51	25. 7.52
ARAFO	Dulheggia	29	17.11.44	7.11.45	27.10.46	16.10.47	5.10.48	24. 9.49	14. 9.50	3. 9.51	24. 8.52
	(In Kabisha years	30)									
			Kabisha days 355	Common days 354	Common days 354	Kabisha days 355	Common days 354	Kabisha days 355	Common days 354	Common days 354	Kabisha days 355

TABLE

SOMALI SEASONAL

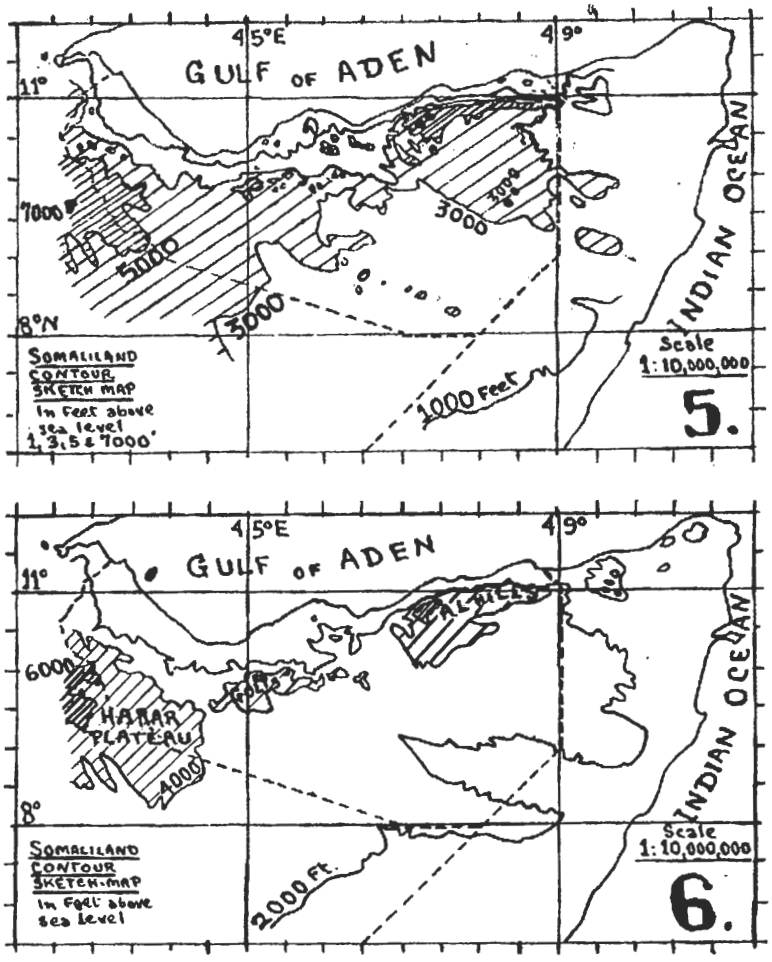
Somali Rain Season	A.H. 1363	A.H. 1364	A.H. 1365	A.H. 1366	A.H. 1367
Dhairta Habis ..	—	—	—	—	—
Dhairta Dirir ..	—	—	—	—	—
Wajina	—	—	—	—	—
Dhairta Dambesama	—	—	—	25.11.46—24.12.46	15.11.47—14.12.47
Hais	—	17.12.44—15. 1.45	6.12.45— 4. 1.46	25.12.46—22. 1.47	15.12.47—12. 1.48
Mehrjan with Hais ..	—	16. 1.45—13. 2.45	5. 1.46— 4. 3.46	23. 1.47—21. 2.47	13. 1.48—11. 2.48
Todob	—	14. 2.45—15. 3.45	5. 3.46— 2. 4.46	22. 2.47—22. 3.47	12. 2.48—11. 3.48
Daido	—	16. 3.45—13. 4.45	3. 4.46— 2. 5.46	23. 3.47—21. 4.47	12. 3.48—10. 4.48
Sermawedo	—	14. 4.45—13. 5.45	3. 5.46—31. 5.46	22. 4.47—20. 5.47	11. 4.48— 9. 5.48
'Aul	—	14. 5.45—11. 6.45	1. 6.46—30. 6.46	21. 5.47—19. 6.47	10. 5.48— 8. 6.48
Sagalo (Sakaro) ..	—	12. 6.45—11. 7.45	1. 7.46—29. 7.46	20. 6.47—18. 7.47	9. 6.48— 7. 7.48
(Mehrjan)	—	12. 7.45—14. 7.45	Nil	Nil	7. 7.48—14. 7.48
Karan (Samalaho) ..	—	15. 7.45— 3. 8.45	15. 7.46— 3. 8.46	15. 7.47— 3. 8.47	15. 7.48— 3. 8.48
DABSHID	4. 8.44	4. 8.45	4. 8.46	4. 8.47	4. 8.48
Karan (second half)	5. 8.44—24. 8.44	5. 8.45—24. 8.45	5. 8.46—24. 8.46	5. 8.47—24. 8.47	5. 8.48—24. 8.48
Dhair Halalod ..	5. 8.44—13. 9.44	5. 8.45—13. 8.45	5. 8.46—13. 9.46	5. 8.47—13. 9.47	5. 8.48—13. 9.48
Dhair Habis ..	14. 9.44— 3.10.44	14. 9.45— 3.10.45	14. 9.46— 3.10.46	14. 9.47— 3.10.47	14. 9.48— 3.10.48
Dhair Dirir ..	4.10.44— 2.11.44	4.10.45— 2.11.45	4.10.46— 2.11.46	4.10.47— 2.11.47	4.10.48— 2.11.48
Wajina	3.11.44—16.11.44	3.11.45— 6.11.45	3.11.46—24.11.46	3.11.47—14.11.47	—
Dhair Dambesama ..	17.11.44—16.12.44	7.11.45— 5.12.45	—	—	—
	Todob in Bulduro Dambe		Todob in Rajal Hore		
Easter day	9. 4.44 Daido	1. 4.45 Daido 17	21. 4.46 Daido 17	6. 4.47 Daido 15	23. 3.48 Daido 17
Last day of A.H. (Moslem year) ..	16.12.44	5.12.45	24.11.46	14.11.47	2.11.48

CALENDAR, 1944-52

A.H. 1368	A.H. 1369	A.H. 1370	A.H. 1371	
—	—	—	&2.10.51— 3.10.51	Dhairta Habis
—	&24.10.49— 2.11.49	&13.10.50— 2.11.50	4.10.51— 2.11.51	Dhairta Dirir
3.11.48— 2.12.48	3.11.49—22.11.49	3.11.50—12.11.50	3.11.51—29.11.51	Wajina
3.12.48—31.12.48	23.11.49—21.12.49	12.11.50—10.12.50	30.11.51—29.12.51	Dhairta Dambesama
1. 1.49—30. 1.49	22.12.49—20. 1.50	11.12.50— 9. 1.51	30.12.51—27. 1.52	Hais
31. 1.49—28. 2.49	21. 1.50—18. 2.50	10. 1.51— 7. 2.51	28. 1.52—25. 2.52	Mehrjan with Hais
1. 3.49—30. 3.49	19. 2.50—20. 3.50	8. 2.51— 9. 3.51	26. 2.52—26. 3.52	Todob
31. 3.49—28. 4.49	21. 3.50—18. 4.50	10. 3.51— 7. 4.51	27. 3.52—26. 4.52	Daido
29. 4.49—28. 5.49	19. 4.50—18. 5.50	8. 4.51— 7. 5.51	27. 4.52—25. 5.52	Sermawedo
29. 5.49—26. 6.49	19. 5.50—16. 6.50	8. 5.51— 5. 6.51	26. 5.52—24. 6.52	'Aul
27. 6.49—26. 7.49	17. 6.50—16. 7.50	6. 6.51— 5. 7.51	25. 6.52—24. 7.52	Sagalo (Sakaro)
Nil	Nil	6. 7.51—14. 7.51	Nil	(Mehrjan)
15. 7.48— 3. 8.49	15. 7.50— 3. 8.50	15. 7.51— 3. 8.51	15. 7.52— 3. 8.52	Karan (Samalaho)
4. 8.49	4. 8.50	4. 8.51	4. 8.52	DABSHID
5. 8.49—24. 8.49	5. 8.50—24. 8.50	5. 8.51—24. 8.51	—	KARAN (second half)
5. 8.49—13. 9.49	5. 8.50—13. 9.50	5. 8.51—13. 9.51	—	DHAIR HALALOD
14. 9.49— 3.10.49	14. 9.50— 3.10.50	14. 9.51— 1.10.51+	—	DHAIRTA HABIS
4.10.49—23.10.49+	4.10.50—12.10.50+	—	—	DHAIRTA DIRIROD
—	—	—	—	Wajina
—	—	—	—	Dhairta Dambesama
Todob in Rajal Dehhe			Todob in Rajal Dambe	
17. 4.49 Daido 18	9. 4.50 Daido 20	25. 3.51 Daido 16	13. 4.52 Daido 18	Easter day
23.10.49	12.10.50	1.10.51	—	Last day of A.H. (Moslem year)

70. As far as records show, areas as large as English counties remain practically unknown. The position of these areas is fairly obvious from the lacunae on the rainfall and tribal maps in this Report. In areas not personally known to the survey officers or to their Somali staff, unless shown on existing maps, no general records such as rainfall or tribal movements could be plotted. When reports about unidentified places were received, Somalis were interrogated, and in many cases the approximate positions of the places or areas named could be ascertained and plotted. At the end of the Survey, however, quite large areas of country remain almost blank on the topographical maps, and therefore very sketchy or blank on the rainfall and tribal maps.

71, 72. (*Illustrations 5 and 6.*)



73. The contour maps (illus. 4, in pocket, and illus. 5 and 6 above) and drainage map (illus. 7, in pocket) are the best compilation of existing topographical knowledge which the writer could obtain by the end of 1950. Illustrations 4 and 7, here drawn separately for cheap printing in black and white, could together be used to make a map of physical geography in colour.

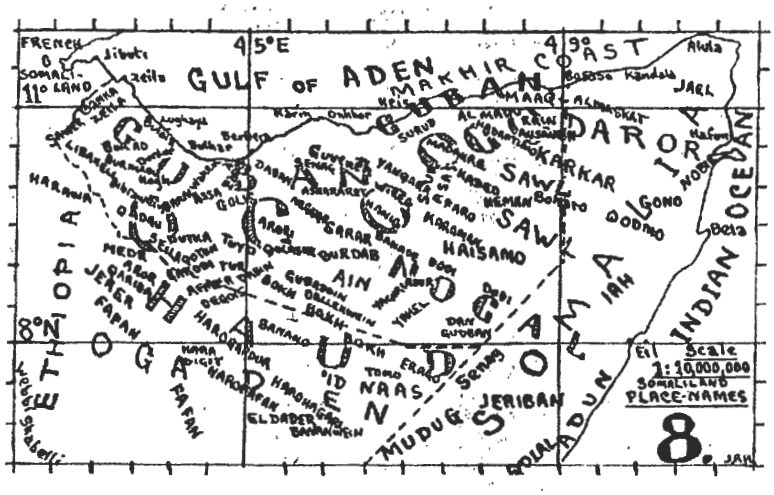
C. Place Names

74. Searching for places on the existing maps resulted early during the Survey in the necessity for a gazetteer. Fortunately the R.G.S. II system was used from the outset. The " First List of Names in the Somaliland Protectorate " (Permanent Committee for Geographical Names: P.C.G.N. 1928) was not available, and as the Gazetteer (Table 3, para. 78) has been found much more useful in practice, it is suggested that it should supersede the 1928 publication.

75. In the Gazetteer positions are given as far as possible to the nearest minute of N. latitude and nearest minute of E. longitude. The retention of the R.G.S. II system of spelling names is strongly recommended, since it has become a universal system of spelling for British soldiers, geographers, geologists and other explorers and scientists who use it throughout the world on their travels, and cannot always learn local languages before they visit a country.

76. A place name sketch map on the scale of 1 : 3,000,000 was included in the 1945 Annual Report. This has been amended and reduced to a scale of 1 : 10,000,000 (illus. 8, below) for the purpose of this Report, as an illustration to the Gazetteer, and to give a general idea of the main areas of the country referred to in the following chapters.

77. (*Illustration* 8.)



78. (*Table* 3, *Gazetteer.*)

TABLE 3

GAZETTEER OF PLACE NAMES, SOMALILAND PROTECTORATE AND GRAZING AREAS

As far as possible names have been spelt in accordance with the R.G.S. II system, as published in the Royal Geographical Society's " Hints to Travellers " (ninth edition) and the War Office " Manual of Map Reading and Field Sketching." This is the Official Somaliland Protectorate spelling for Somali Examinations. It is used throughout the world by explorers, enabling them to pronounce the words which they write down phonetically, fairly intelligibly to illiterate natives.

There are certain to be many errors in spelling, due to variations of dialect, individual pronunciations, variations in hearing of the writers, and in the case of names obtained from written Arabic reports, the accuracy and degree of education of the writer, and the choice of words by the translator. Some names have been taken from existing maps without correction.

Some of the groups of letters particularly liable to interchange are the following:—

(i) Q, G, GH, KH.
(ii) J and G.
(iii) D, R, and Ḍ (cerebral D).
(iv) U and A.
(v) E and 'I ('ain I).

Without any knowledge of the language, mistakes are bound to occur, as descriptive names are often used in the plural, or synonyms employed, especially where a writer has translated a Somali name into Arabic and it has been translated back into Somali.

A few of the positions are from astronomical fixes (to the nearest minute), but many are from road reports, compass camel-march sketch-maps, plane-table surveys based on a local base line tied to uncertain points, or even from descriptions of relative positions with respect to previously plotted places.

Latitudes (all north) and longitudes (all east) are given in preference to grid references, because in practice maps on all scales with the same grid references are never universally available.

This Gazetteer, a first edition of which by Hunt and Viney was published in 1946 (B.S.G.P.4), was found to be one of the necessary working tools for a Survey of Tribal Movements, Rainfall, etc.

To simplify plotting a " five-minute grid " on the scales of 1 : 500,000 and 1 : 1,000,000 cut on celluloid was devised. (It is believed to have been invented years ago and to be called a " Roehmer.") To use this grid it is necessary to mark degree lines on the map. To find a point on the map from the Gazetteer, e.g. BURAO 9° 31′, 45° 34′, place 31 minutes on the 9° N. parallel, and 34 minutes on the 45° E. meridian. The corner of the grid should then coincide with Burao.

It has not been possible to combine this Gazetteer with the " First List of Names in the Somaliland Protectorate " (Permanent Committee on the Geographical Names for British Official use, Royal Geographical Society, February 1928). The following Gazetteer has therefore not been officially approved by the P.C.G.N., but is necessary for the purpose of this Report. Places referred to in the Report will be found in this Gazetteer, the first edition of which was accepted locally as official by the Protectorate Government in 1945.

Started in September 1943, this Gazetteer has been now revised up to January 1951.

TABLE 3—*continued.*

ABABSIN	8° 34′	48° 34′
ABANEH ALI	10° 02′	45° 13′
ABAR ANALEH	8° 54′	46° 23′
ABARSO	9° 37′	43° 56′
ABAS	10° 09′	43° 04′
ABDAL	9° 56′	44° 40′
ABDAL QADR	10° 31′	42° 53′
ABDI GEDI	10° 26′	44° 05′
ABDILLEH	10° 20′	43° 06′
ABDU	11° 05′	48° 48′
ABEID	10° 54′	47° 32′
ABESALI	10° 14′	46° 09′
ABESALI	10° 02′	47° 11′
ABESELE	9° 36′	45° 26′
ABIFOLAN	9° 24′	43° 09′
ABODLEYAL	8° 02′	44° 43′
ABOREI	9° 00′	45° 10′
ABOREN	9° 31′	43° 38′
ABOYALEH	10° 32′	46° 04′
ABTIWAQ	10° 08′	46° 06′
ABUNAMEH	10° 02′	43° 36′
ABUREN	9° 44′	45° 21′
ADABUR	8° 41′	48° 22′
ADAD	9° 51′	43° 26′
ADAD	9° 26′	46° 50′
ADAD	10° 44′	43° 23′
ADAD	10° 20′	42° 47′
ADADALEH	7° 30′	45° 03′
ADADALEH	8° 11′	44° 21′
ADAD KULALEH	9° 26′	46° 50′
ADADLEH	9° 46′	44° 40′
ADADO	11° 19′	48° 37′
'ADADOH	10° 22′	44° 06′
ADA' JANLEH	9° 07′	48° 30′
ADALEH	8° 45′	46° 10′
ADALEH	8° 16′	48° 17′
ADALEH	8° 27′	47° 17′
ADALEH	8° 07′	47° 22′
ADAN QUDUN	9° 46′	47° 36′
ADAN-WAL	8° 37′	46° 10′
ADAR	9° 26′	49° 00′
ADARI (Harar)	9° 18′	42° 08′
ADAWEIN (W)	10° 32′	45° 55′
ADE	8° 20′	47° 22′
ADE AD	10° 31′	46° 10′
ADE ADESO	10° 21′	44° 53′
ADE ADESO	8° 39′	47° 10′
ADE ADEYE	9° 32′	43° 05′
ADE ADEYE	8° 41′	47° 09′
ADE BARAMED	8° 20′	47° 20′
ADE BUR	8° 40′	48° 25′
ADE DERA	8° 27′	48° 47′
ADED KAROR	10° 29′	43° 08′
ADEI	11° 02′	47° 38′
ADEI MIRREH	10° 48′	47° 41′
ADE JIFJIFTA	8° 41′	47° 56′
ADI-BOB	8° 40′	46° 21′
ADI GABA	8° 14′	44° 47′
ADILEIS	8° 06′	46° 48′
ADIN LIBAH	7° 21′	45° 21′
ADI WARABIS	10° 05′	42° 30′
ADO	7° 03′	45° 47′
ADO	10° 34′	46° 06′
ADO	7° 18′	45° 11′
ADON (Gelia Ade)	6° 10′	48° 07′
ADSARAN	8° 20′	47° 20′
ADUN (Godob)	7° 40′	49° 32′
ADUR	8° 59′	47° 12′
ADUR	10° 43′	47° 40′
ADURA	9° 23′	49° 03′
ADUR SUGULEH	9° 18′	45° 37′
AFAF	10° 35′	47° 06′
AFAS	10° 23′	42° 44′
AFAS (W)	11° 02′	43° 36′
AF DAHOLLE	9° 34′	48° 47′
AFDALŌSHA	10° 31′	43° 06′
AFDOH	10° 10′	43° 02′
AF GERILE	9° 27′	48° 46′
AF GUDABAN	10° 56′	47° 17′
AF GUDUD	10° 59′	48° 15′
AFKI ADAD	9° 25′	46° 49′
AFLADIGIN	8° 58′	48° 46′
AFLUADLEH	7° 51′	45° 07′
AFMER	8° 37′	44° 14′
AFSHALAU	10° 48′	47° 27′
AFUFLEH	8° 43′	43° 54′
AFWEINEH	9° 54′	43° 22′
AFYERADO	7° 00′	45° 17′
AGA BARR	10° 14′	43° 16′
AGA GUB	10° 27′	42° 52′
AGA GUR	10° 13′	43° 17′
AGA HUN	10° 13′	43° 24′
AGA ID	9° 59′	46° 40′
AGA MARODI	10° 13′	44° 40′
AGARANTI	9° 42′	44° 56′
AGARWEINA	9° 38′	42° 52′
AGARWEINEH	6° 54′	45° 48′
AGA SARARWEIN	8° 57′	46° 18′
AGASUR	10° 29′	43° 28′
AGAWEIN	9° 09′	45° 14′
AGBABA	9° 47′	45° 17′
AGBABU	7° 53′	47° 14′
AHALALE	8° 19′	46° 02′
AHANKUSORE	11° 04′	48° 29′
AHANWEINEH	8° 35′	44° 15′
AHMED GAB	9° 12′	46° 26′
AHMED RAGSALEH	10° 15′	43° 15′
AHMED SHABEL	11° 01′	43° 03′
AIBAT	11° 30′	43° 27′
AIEIU	8° 45′	43° 54′
AIDA KABITA	10° 05′	45° 41′
AIDKAMANSHEH	9° 37′	45° 09′
AIKURUS	8° 45′	44° 59′
AILA KA DER	10° 32′	45° 56′
	10° 29′	45° 56′
AILO	10° 30′	43° 32′
AIN	10° 06′	45° 07′
AINABO	8° 57′	46° 26′
AINGOIEH	10° 04′	46° 19′
AINTA GADID	10° 14′	44° 10′
AKARA	9° 58′	47° 53′
AKHALALEH	8° 47′	43° 49′
ALABLA	8° 03′	44° 59′
ALA IBADEI	9° 22′	43° 26′
ALALIH	10° 20′	43° 20′
ALALIYOH (top)	10° 25′	46° 35′
ALANDERO	11° 12′	48° 30′
ALA'ULE	10° 08′	42° 56′
ALA'ULE	10° 28′	48° 42′
ALA'ULE	10° 41′	47° 05′
ALA'ULE	9° 56′	45° 06′
AL BAHAL	11° 01′	48° 54′
ALBASA	9° 24′	43° 14′
ALBASA	9° 47′	45° 08′
AL BIYELE	11° 00′	47° 14′
AL DALOLE	10° 27′	46° 15′
ALDUBO	10° 45′	45° 48′
'ALEID	8° 48′	43° 35′
'ALEID YELI	8° 08′	47° 10′
ALEILIH	7° 54′	47° 48′
ALEN BADAN	9° 01′	46° 30′
ALEN WEIN	8° 45′	45° 18′
AL FULA	10° 21′	43° 16′
AL HUDED	10° 43′	47° 07′
ALI BAKUKEH	9° 02′	46° 07′
ALI GELEH	10° 29′	43° 25′
ALLAH KAJID	10° 28′	45° 27′
ALMADU	11° 00′	48° 10′
AL MASKAT	10° 57′	49° 30′
ALOLA	10° 02′	47° 36′
ALOLWEIN	10° 10′	46° 26′
ALOLYALEH	8° 33′	46° 16′
AL ONKHORED	10° 43′	46° 07′
ALUG	9° 58′	43° 16′
ALULA	11° 58′	50° 46′
ALWEIN	10° 22′	45° 17′
ALWEINI	10° 20′	46° 55′
AL WOGEDLEH	10° 28′	45° 45′
AMADIRAH	9° 20′	44° 55′
AMAMUR	9° 02′	47° 03′
AMARUTA	10° 56′	43° 19′
AMBAL	10° 27′	45° 45′
AMBAR	10° 34′	45° 57′
AMBAR	9° 34′	49° 51′
AMUDLEH	9° 16′	45° 32′
ANA HADIGLE	8° 08′	47° 30′
ANA' MADOBEH	8° 05′	45° 07′
ANANI	9° 18′	48° 27′
ANAYA	9° 40′	43° 59′
ANDAGOIS	8° 08′	47° 04′

TABLE 3—*continued*

ANDASAF	10° 10′	46° 43′
ANDATOLI	11° 00′	48° 42′
ANDATOLI	11° 06′	48° 37′
ANDO' DIRSHEH	9° 15′	43° 31′
ANGAL	7° 50′	45° 25′
ANJIT	8° 36′	47° 17′
AQALALEH	7° 41′	46° 26′
ARA 'AD...	7° 12′	45° 28′
'ARA AD...	10° 06′	43° 04′
ARA 'ARI	9° 21′	43° 12′
'ARA BALAMBAL	8° 37′	46° 23′
ARA BARAR	9° 34′	43° 50′
A-RĀBI	10° 00′	42° 40′
ARABSIYO	9° 41′	43° 46′
'ARA GAFĪDA	7° 34′	45° 09′
ARAJEH	11° 04′	49° 43′
ARALA FUFEI	8° 24′	43° 56′
ĀRALEH	9° 32′	43° 51′
ARALEH LUGBUR	8° 14′	44° 12′
ARA MADU	9° 47′	46° 09′
ARAN ARE	9° 00′	44° 00′
ARANLAYE	8° 22′	47° 18′
ARAR	10° 15′	45° 52′
ARAR	8° 52′	50° 09′
ARAR	10° 50′	47° 10′
ARAWEILO	9° 27′	44° 14′
ARAWEIN	10° 04′	44° 44′
ARAWEIN	10° 09′	46° 20′
ARAWEINA	10° 14′	43° 29′
ARDADLEH	10° 21′	46° 44′
ARDADLEH	10° 08′	45° 21′
ARDI	9° 58′	46° 05′
ARDIMOH LABLAB	8° 35′	48° 05′
AREISIN	9° 49′	44° 36′
ARGEGR...	9° 45′	43° 23′
ARGEGTI	8° 58′	48° 55′
ARGEGTI	10° 29′	48° 18′
ARIDAF	8° 19′	46° 19′
ARILEH IYO WEILOSOR ...	11° 00′	49° 46′
ARMADO	9° 16′	46° 24′
ARMALEH	8° 11′	46° 15′
ARMALEH	10° 29′	47° 57′
ARMALEH	8° 59′	48° 57′
ARMALEH	8° 32′	48° 31′
ARMALEH	10° 26′	47° 20′
ARMALEH HOLEIS	8° 32′	44° 58′
ARMA WEIN	10° 29′	49° 00′
ARMOYIN	10° 30′	49° 00′
ARMO	10° 13′	43° 28′
ARMO	9° 29′	48° 51′
ARO GAFIDA	7° 35′	45° 10′
ARO GUDUDAN	9° 40′	43° 42′
AROLEH	8° 52′	48° 15′
AROR	9° 14′	43° 50′
AROR	10° 53′	48° 22′
AROR BIL ATABOD	10° 57′	48° 22′
ARORI	9° 23′	45° 18′
ARORI GABAN	9° 10′	45° 04′
ARORO	10° 56′	47° 55′
ARORO	10° 56′	47° 56′
AROWEIN	10° 15′	43° 30′
AROWEINEH	10° 03′	44° 40′
ARRBAHALEH	8° 31′	46° 10′
ARRDIH	9° 58′	46° 06′
ARRJOG	8° 02′	45° 30′
ARTALLA	9° 42′	46° 11′
ARYALEH	9° 20′	45° 17′
ARYALEH	10° 53′	47° 10′
ASA	10° 16′	46° 38′
ASAS	10° 06′	47° 38′
ASEIL	10° 05′	45° 36′
ASGOGLAN	8° 40′	44° 10′
ASHA'A	10° 45′	42° 34′
ASHA 'ADO (W)	11° 11′	43° 27′
ASHARARET	10° 03′	46° 07′
ASHKIRA 'UN	9° 10′	48° 31′
ASILEH	10° 51′	47° 12′
ASILEHE...	11° 07′	48° 50′
AS JIFA	9° 15′	47° 20′
ASR QOIYA	8° 56′	45° 27′
ASS	10° 33′	42° 38′
ASSA	9° 52′	44° 37′
ASSEH	10° 16′	46° 38′
ASSURA	8° 46′	46° 53′
ASURA	9° 56′	46° 49′
AU BAKADLEH	9° 42′	44° 18′
AU BARREH	9° 48′	43° 13′
AU BUBEH	10° 06′	42° 58′
AUḌAD	10° 04′	45° 13′
AUḌADU	10° 05′	45° 16′
AÜDAL (Zeila)	11° 21′	43° 29′
AU GABA	10° 14′	43° 04′
AUGOYEH	8° 29′	44° 58′
AULIDAQ	10° 13′	48° 38′
AUNURA	9° 18′	43° 17′
AUR BOGEIS	9° 25′	48° 01′
AURDIL	9° 55′	43° 16′
AUR QALAD	10° 54′	43° 25′
AUR QARI	10° 22′	45° 03′
AURYAHAN	10° 04′	46° 30′
AUSHAN...	9° 06′	48° 21′
AUSANEH	10° 33′	48° 51′
AWA DŪR	9° 01′	43° 47′
AWAREH	8° 16′	44° 09′
AWAREH WEIN	9° 03′	45° 45′
AYA BENTI	8° 03′	46° 35′
AYALEH	9° 46′	43° 16′
AYA MAKARAN	10° 17′	42° 34′
BAADWEIN	8° 02′	46° 55′
BAADWEIN	7° 12′	47° 31′
BA'AROR	8° 53′	47° 55′
BA'AROR	9° 39′	46° 55′
BABA	10° 19′	44° 52′
BABANI	8° 08′	49° 22′
BABASEH	7° 30′	44° 55′
BABILE	9° 15′	42° 20′
BABUR	9° 43′	45° 23′
BABUR	9° 14′	45° 52′
BADADA ALLAH	9° 38′	43° 08′
BADA IYO KAYA	9° 07′	47° 44′
BADAH	11° 02′	47° 40′
BAḌAN	10° 43′	48° 20′
BADANABAD	10° 10′	43° 18′
BADEA'A...	10° 36′	47° 43′
BADI	10° 28′	43° 27′
BAḌI DAYED	8° 53′	46° 26′
BAḌI FUFIYEH	7° 54′	46° 10′
BAḌI GELUSOO	8° 10′	44° 35′
BAḌI GUDUD	10° 30′	43° 07′
BAḌI SOO	8° 25′	46° 10′
BAḌI SO'O	8° 35′	44° 20′
BADWEIN	9° 00′	46° 40′
BAHALEHE	9° 09′	48° 20′
BAHALELEH	10° 01′	45° 29′
BAHHDO...	6° 58′	46° 35′
BAILAMALE	10° 03′	46° 20′
BAIRA	6° 57′	47° 20′
BAIRAS	8° 12′	46° 20′
BAJAJA	9° 54′	43° 03′
BAKADAH	9° 21′	45° 50′
BAKALEH	9° 28′	43° 20′
BAKAN	9° 49′	44° 47′
BAKEYE KU FADIDA ...	10° 28′	46° 22′
BAKI	9° 58′	43° 21′
BALAAD	10° 01′	45° 02′
BALĀD	10° 23′	43° 44′
BALAD	9° 02′	43° 35′
BALAD	11° 00′	49° 38′
BALAD AGAGWEIN	10° 37′	46° 14′
BALADIS...	9° 00′	46° 30′
BALAGLEH	10° 31′	46° 09′
BALAMBAL	8° 31′	45° 05′
BALAMBAL	9° 25′	46° 37′
BALAMBAL	11° 09′	48° 33′
BALAYELE	9° 10′	43° 17′
BALDAYA	11° 00′	49° 38′
BALDAYEH	10° 15′	44° 44′
BAL DERA	9° 47′	43° 17′
BALE	9° 38′	43° 25′
BALE	9° 38′	43° 24′
BALLEH (Guveneh top) ...	10° 23′	46° 07′
BALLEH ABAD...	8° 50′	43° 56′
BALLEH ABDI FARAH ...	9° 12′	44° 59′
BALLEH ABDI DERA ...	9° 07′	44° 46′
BALLEH ABDALLA ARAB ...	9° 08′	44° 59′
BALLEH ABOKR SOFI ...	9° 53′	46° 16′
BALLEH AD	8° 45′	45° 20′

TABLE 3—*continued*

BALLEH AD	8° 06′	46° 44′
BALLEH AD	8° 06′	47° 56′
BALLEH AD	8° 33′	46° 04′
BALLEH AINANSHE	9° 00′	45° 07′
BALLEH ALANLEYAL	8° 25′	46° 15′
BALLEH ARALEH	9° 05′	45° 07′
BALLEH AWALEH ADAN	8° 58′	44° 58′
BALLEH AYALEH	8° 32′	46° 15′
BALLEH BA HABR ADAN	9° 22′	43° 17′
BALLEH BODAMADU	8° 28′	45° 32′
BALLEH DAAR	8° 00′	47° 20′
BALLEH DAAR	7° 53′	47° 07′
BALLEH DAAR	7° 57′	46° 49′
BALLEH DANDAN	8° 15′	46° 35′
BALLEH DAYE	8° 03′	45° 37′
BALLEH DIG	8° 21′	45° 59′
BALLEH DEGAWARABA	7° 23′	46° 55′
BALLEH DERIA FINAD	9° 15′	45° 20′
BALLEH DO'OL	8° 17′	46° 25′
BALLEH DO'OL	9° 24′	46° 32′
BALLEH DUREH	8° 22′	46° 39′
BALLEH EGAG	8° 34′	46° 28′
BALLEH EGAL MUSA	9° 15′	45° 50′
BALLEH FARAH AINASHE	9° 02′	45° 04′
BALLEH FINTIR	7° 00′	47° 08′
BALLEH GALOL	8° 36′	44° 09′
BALLEH GARABEI	7° 23′	45° 16′
BALLEH GARDA	8° 20′	46° 40′
BALLEH GOBLEH	8° 42′	46° 28′
BALLEH GOBLEH	8° 55′	45° 07′
BALLEH GOBLEH	8° 22′	44° 22′
BALLEH GOBLEH	8° 26′	44° 26′
BALLEH GOYADED	8° 05′	46° 28′
BALLEH GUDUB	8° 56′	46° 35′
BALLEH GUDUD SIRRO	7° 26′	45° 23′
BALLEH GUDUD TON	7° 13′	45° 29′
BALLEH GULED HAJI	9° 20′	44° 46′
BALLEH GUMAREH	8° 10′	45° 26′
BALLEH GURASE	7° 55′	46° 57′
BALLEH HADA'A	8° 52′	45° 58′
BALLEH HAGAREH	8° 25′	46° 38′
BALLEH HAGOGANEH	7° 18′	45° 11′
BALLEH HAREI	8° 18′	46° 40′
BALLEH HAJIN	8° 34′	46° 08′
BALLEH HALIELO	7° 57′	45° 45′
BALLEH HAMR LAGUHED	8° 11′	46° 50′
BALLEH HARFOGEIS	8° 04′	46° 48′
BALLEH HARWEINA	8° 35′	46° 09′
BALLEH HASSAN MOHAMED	8° 53′	45° 45′
BALLEH HAUD	8° 16′	46° 18′
BALLEH HEDID	6° 56′	46° 50′
BALLEH HERSI SULTAN	8° 54′	44° 59′
BALLEH HIGLALEH	6° 58′	46° 37′
BALLEH HIGLOLEH	7° 47′	46° 08′
BALLEH HILE	9° 09′	45° 35′
BALLEH HULANJI	7° 58′	45° 24′
BALLEH ISMAIL DERIEH	8° 56′	44° 53′
BALLEH JIDFALAYAL	7° 37′	47° 03′
BALLEH JINA ALI	7° 22′	46° 37′
BALLEH KHAIR	8° 01′	46° 08′
BALLEH KHALID	9° 07′	45° 00′
BALLEH KHALID	8° 22′	45° 38′
BALLEH KHURSHE	7° 53′	47° 18′
BALLEH LEBILEH	7° 51′	45° 26′
BALLEH LOKOR	8° 08′	46° 37′
BALLEH MADED	8° 20′	45° 51′
BALLEH MADED	8° 43′	46° 15′
BALLEH MADEDLEH	8° 36′	46° 12′
BALLEH MAGALAYER	9° 09′	45° 56′
BALLEH MAJOR	7° 00′	46° 54′
BALLEH MAROLEH	9° 15′	45° 20′
BALLEH MAROLEH	9° 46′	48° 03′
BALLEH MEGAGLEH	8° 29′	46° 16′
BALLEH MIREFARATAG	7° 38′	46° 56′
BALLEH MOHAMED UGHAS	8° 34′	46° 06′
BALLEH MOQOR	9° 50′	46° 18′
BALLEH ODANLEH	8° 20′	46° 02′
BALLEH OK	8° 57′	46° 36′
BALLEH OMR AJI	8° 23′	46° 18′
BALLEH QALIFA QABEH	8° 31′	45° 52′
BALLEH QAYADED	8° 03′	46° 25′
BALLEH QOL AD	8° 06′	46° 45′
BALLEH QORANSEI	8° 14′	46° 50′
BALLEH RER MOHAMED	8° 10′	46° 14′
BALLEH SABR	10° 09′	48° 52′
BALLEH SALADIGOLEH	8° 20′	45° 37′
BALLEH SALAH	8° 57′	45° 10′
BALLEH SAWIR	8° 31′	46° 13′
BALLEH SHABEL	7° 32′	45° 44′
BALLEH SHALAHSHALA	9° 14′	45° 35′
BALLEH SHANGALEH	8° 17′	46° 20′
BALLEH SHEIKH ISAQ	9° 20′	44° 46′
BALLEH SHIL	7° 54′	45° 56′
BALLEH SHILQORAH	8° 32′	46° 30′
BALLEH WEIN	8° 35′	46° 00′
BALLEH WIYIL	8° 33′	46° 27′
BALLEHYA KHURSHI	7° 54′	47° 18′
BALLIYOH	10° 20′	48° 41′
BALLIYOH	10° 40′	48° 10′
BALLIYOH	9° 21′	48° 25′
BALLIYO KHAIRO	8° 27′	46° 14′
BALOLEHE	9° 53′	46° 38′
BAL WEIN	9° 29′	47° 26′
BAL YERA	9° 10′	44° 40′
BAKI	9° 59′	43° 22′
BAN ADE	9° 15′	46° 52′
BANAN BOQON	10° 48′	47° 09′
BANAN WEIN	7° 02′	45° 50′
BANANO	8° 10′	45° 25′
BAN AUL	9° 36′	45° 42′
BANA WEIN	7° 20′	47° 21′
BAN BIDAR	9° 05′	45° 17′
BAN DEGOLEH	10° 00′	45° 13′
BAN GAL	9° 42′	46° 47′
BAN JULO	9° 10′	43° 22′
BANI KAYAHA	9° 07′	47° 44′
BANKA AROR	9° 00′	43° 41′
BANKA BALAAD	9° 03′	43° 35′
BANKA QOLADE	9° 10′	44° 10′
BAN QODA'	9° 18′	43° 48′
BAN ODAN	9° 07′	44° 12′
BAN YERA	9° 28′	44° 25′
BANYERA ADA	9° 21′	45° 51′
BAOBANEH	8° 10′	49° 26′
BAONEH	9° 56′	43° 07′
BAQASLEH	8° 46′	46° 52′
BAQAYELEH	10° 06′	44° 24′
BAQLEH	9° 17′	45° 00′
BAR	10° 32′	46° 02′
BAR AD	8° 54′	45° 08′
BARAN	8° 15′	47° 15′
BARAN (Badan)	10° 43′	48° 20′
BARARBOB	10° 07′	43° 14′
BARAHA	8° 36′	47° 56′
BARAHALEH	8° 52′	46° 39′
BARAJISLEH	7° 54′	46° 46′
BARA QUDUDUN	9° 46′	46° 49′
BARARIS	10° 22′	44° 05′
BARBARAD	9° 07′	47° 06′
BARDALEI	8° 05′	43° 58′
BARED	11° 02′	47° 27′
BARGAL	11° 17′	51° 04′
BARGUNTEN	11° 07′	47° 38′
BARI	8° 02′	47° 05′
BARI TIR	10° 52′	48° 57′
BARIN QARARAD	7° 50′	47° 00′
BARJEH	9° 36′	43° 30′
BARKA HAGR	9° 50′	43° 50′
BARKASAN	10° 32′	46° 00′
BARMADOBA	10° 23′	48° 44′
BARMADOBE	9° 00′	48° 54′
BAR MADOBE	8° 15′	50° 08′
BARO	10° 22′	43° 56′
BAROH	10° 35′	43° 10′
BARORAN	7° 58′	47° 48′
BARQAMAL	8° 52′	46° 00′
BARQAQEYO	9° 10′	48° 18′
BARQASAN	9° 59′	44° 48′
BARREH SHANBI	8° 57′	46° 07′
BARTAH	8° 07′	44° 19′
BARUR ASA	11° 09′	48° 53′
BARWEIN	11° 15′	48° 35′
BASBASAH	9° 11′	47° 52′
BASHEI	10° 29′	47° 32′
BATALALEH	10° 29′	45° 07′
BATAL ERAGO	7° 30′	47° 18′
BAWD	10° 38′	45° 55′
BAWED	7° 30′	47° 08′
BAWN	10° 12′	43° 06′

TABLE 3—*continued*

BEDA	10° 27′	42° 58′
BEDENBED	10° 18′	43° 07′
BEDR WANAK	9° 35′	44° 24′
BE'ED GALO	10° 14′	47° 44′
BE'ED JOGEN	8° 22′	44° 44′
BE'ED JOGEN	10° 39′	43° 06′
BE'EDLA	9° 20′	43° 10′
BE'ED LASAR	7° 39′	46° 56′
BEILA	9° 29′	50° 48′
BEILAMALE	10° 03′	46° 20′
BEIRA	6° 57′	47° 20′
BEI RAS	8° 32′	46° 25′
BELIYO SUBKHO	10° 27′	46° 03′
BENDR KASIM	11° 17′	49° 11′
BENIN	11° 02′	43° 23′
BENINBALE	9° 52′	43° 22′
BER	9° 22′	45° 47′
BERATO	9° 22′	45° 04′
BERBERA	10° 26′	45° 02′
BERBERA LIGHTHOUSE	10° 24′ 49″.2	44° 58′ 42″.7
BERDAGAB	8° 34′	48° 02′
BERDASHEL	9° 25′	46° 47′
BEREGID	10° 51′	43° 34′
BERETABLEH	8° 21′	47° 56′
BERWEISO	9° 43′	47° 36′
BEYELE	8° 15′	44° 07′
BEYO AFWEIN	10° 14′	44° 37′
BEYOH	10° 06′	46° 17′
BEYO ANOD	10° 35′	42° 38′
BEYO DADER	10° 15′	42° 42′
BEYO FARDOD	10° 15′	45° 45′
BEYO HRAMR	10° 07′	45° 21′
BEYO MAAN	10° 00′	46° 50′
BIDATEH	11° 06′	48° 42′
BIHEN	8° 26′	48° 25′
BIHEN	10° 09′	47° 07′
BIHEN	9° 36′	46° 55′
BIHEN	10° 38′	48° 25′
BIHEN	9° 58′	42° 56′
BIHENDULA	10° 10′	45° 08′
BIHENGAHA	10° 25′	45° 39′
BIJI	10° 10′	44° 05′
BIJI	10° 10′	42° 37′
BILALEI	10° 10′	43° 00′
BILDALEH	10° 27′	46° 16′
BILDALEI	10° 10′	44° 13′
BIL'IL BADBADO	7° 30′	45° 41′
BIL'IL BOYAH	9° 17′	45° 41′
BIL'IL BURAN	10° 04′	48° 46′
BIL'IL EBED	6° 55′	46° 09′
BIL'IL 'EBED	7° 59′	48° 14′
BIL'IL GELJAALO	9° 47′	48° 47′
BIL'ILI	8° 02′	49° 00′
BIL'IL IYO HABO	9° 25′	48° 20′
BIL'IL OGADEN	8° 32′	44° 49′
BIL'IL QORAN	7° 56′	47° 15′
BIRDALI	9° 47′	43° 20′
BIRHAMR	10° 45′	47° 53′
BIROLEH	8° 09′	45° 56′
BIRONEH	8° 17′	45° 52′
BIYAHO	7° 08′	46° 12′
BIYEIS	9° 06′	43° 32′
BIYO ADALEH	10° 00′	44° 15′
BIYO ADO	11° 09′	49° 00′
BIYO ADO	8° 17′	49° 48′
BIYO ADO	10° 00′	42° 57′
BIYO AFKEDA (W)	10° 41′	46° 15′
BIYO BAHAI	10° 03′	42° 30′
BIYO BANEH	10° 03′	42° 30′
BIYO BOLGASHAN	9° 51′	44° 19′
BIYO DADER	9° 53′	43° 31′
BIYO DADER	10° 25′	45° 28′
BIYO DAI (W)	9° 55′	44° 19′
BIYO DANAN	10° 42′	46° 05′
BIYO DANAN	10° 38′	46° 00′
BIYO ELAN	10° 53′	43° 27′
BIYO GORA	10° 23′	45° 12′
BIYO GUDUD	9° 16′	48° 31′
BIYO GUDUD	10° 28′	46° 04′
BIYO GURGUREH	10° 24′	42° 42′
BIYO HAJIN	10° 54′	43° 27′
BIYO KABOBE	10° 23′	42° 35′
BIYO QASIN (W)	11° 17′	43° 25′
BIYO SALAH	10° 57′	43° 22′
BIYO WISSIL	9° 34′	45° 27′
BOANNA	8° 23′	47° 58′
BOA QODAHLEI	10° 30′	47° 17′
BOBOLEH	9° 58′	46° 18′
BOD	9° 04′	47° 37′
BOD ABUR	9° 02′	47° 22′
BODA MADU	8° 28′	45° 52′
BODLEH	8° 59′	47° 10′
BODO (N)	10° 33′	46° 11′
BODO (S)	10° 32′	46° 11′
BO'ELI	9° 49′	46° 18′
BOGH AFYERA	7° 10′	47° 35′
BOGHOL JIRREH	9° 32′	44° 01′
BOGHON	10° 50′	47° 05′
BOGLIH	10° 27′	52° 50′
BOHARO	9° 44′	49° 00′
BOHARO	9° 52′	48° 45′
BOHOL	10° 51′	47° 27′
BOHOL	9° 42′	46° 26′
BOHOL	9° 15′	47° 17′
BOHOL	10° 44′	43° 29′
BOHOLALEI	8° 21′	44° 26′
BOHOL DIDER	9° 26′	45° 40′
BOHOLE YAL	8° 38′	47° 38′
BOHOL GASHAN	9° 52′	44° 20′
BOHOL WARABA	8° 36′	47° 50′
BOHOTLEH WEIN	8° 14′	46° 19′
BOHOTLEH YERA	9° 03′	46° 04′
BOKH	7° 23′	46° 38′
BOKH	10° 06′	44° 59′
BOKH	8° 54′	45° 11′
BOKH	9° 03′	45° 14′
BOKH ARARET	10° 57′	47° 06′
BOKH DERMED	7° 12′	47° 33′
BOKH DIDER (W)	10° 42′	46° 16′
BOKHGABAN	8° 54′	45° 08′
BOKHGOREYU	8° 49′	48° 29′
BOKH HAR	8° 25′	47° 34′
BO'O	10° 36′	47° 18′
BO'O	8° 59′	46° 17′
BO'OH	10° 32′	43° 10′
BOQ BIDAR	11° 04′	48° 40′
BOQDA	10° 08′	45° 02′
BOQDER	8° 35′	48° 47′
BOQH	10° 36′	47° 12′
BOQH	7° 32′	46° 38′
BOQON GORAYO	8° 42′	46° 01′
BOQON RIGO	10° 04′	44° 13′
BOQONSAN	10° 03′	44° 21′
BOQSHANLEH	8° 27′	47° 37′
BORAMA	9° 10′	47° 18′
BORAMA	9° 44′	45° 44′
BORAMA	9° 56′	43° 11′
BORANTAFAF	9° 22′	43° 38′
BOSAN BOSLEH	8° 12′	46° 24′
BOSASO	11° 17′	49° 11′
BOS QOYEH	8° 54′	46° 05′
BOTOR	9° 45′	43° 36′
BUDUD	8° 06′	44° 16′
BUDUNBUTO	7° 39′	46° 56′
BUHA	10° 22′	46° 20′
BUL	10° 45′	43° 28′
BULAL	8° 22′	47° 51′
BULALEH	8° 52′	45° 59′
BULALEH	7° 53′	43° 47′
BULAWEIN	9° 38′	42° 57′
BULGIH	9° 43′	42° 57′
BULHAR	10° 23′	44° 25′
BULO	10° 46′	45° 59′
BULOH ADE	10° 58′	43° 40′
BULOH HARED	10° 45′	43° 51′
BULOH QUREH	9° 38′	42° 57′
BULOINKA	9° 38′	42° 57′
BULUDA	8° 17′	44° 00′
BUQ	10° 31′	43° 22′
BUQ DAMISO	9° 06′	47° 30′
BUQ DARKEIN	8° 44′	46° 36′
BUQ DAWA'O	10° 36′	46° 15′
BUQ DOFAR	10° 05′	44° 54′
BUQ GIGO	10° 32′	43° 22′
BUQHAR	8° 25′	47° 25′
BUQRAMALEH	10° 33′	43° 23′
BUQRAS	8° 10′	46° 19′
BUQSAN	9° 51′	44° 51′
BURA	11° 02′	42° 52′

TABLE 3—*continued*

BUR AD	10° 28′	43° 20′
BURADHAWALA	8° 43′	44° 51′
BURADLE	8° 46′	47° 58′
BURAHA HAHIYAD	8° 17′	48° 13′
BURA JERIN	8° 59′	48° 34′
BUR ALAKHUT	11° 09′	48° 41′
BUR ALED	11° 12′	48° 49′
BURAN	10° 13′	48° 47′
BURANOD	9° 07′	47° 20′
BURAO	9° 31′	45° 34′
BURAO DUREH	8° 21′	44° 26′
BURAO GABO	8° 32′	44° 52′
BURAO GAJO	8° 42′	44° 50′
BURAO KIBIR	8° 44′	45° 28′
BURAO SHILIS	8° 26′	46° 10′
BURAO SULUB	8° 46′	44° 53′
BURAS	7° 22′	47° 10′
BUR BAYAL	11° 03′	48° 59′
BUR DAB	9° 07′	46° 15′
BUR DAGAH MADU	10° 28′	42° 23′
BUR DEHHDOD	10° 27′	46° 05′
BURDI	9° 54′	43° 27′
BUR DOLANDOL	9° 39′	46° 37′
BUR ELALOD	10° 18′	48° 17′
BUR GASLEI	8° 08′	49° 04′
BUR HAHE	8° 16′	48° 12′
BUR HANAN	8° 12′	47° 13′
BUR HERO	8° 32′	47° 53′
BURHISSE	8° 20′	47° 40′
BURKAWEINA	9° 57′	46° 25′
BUR LIBAHH	8° 13′	48° 10′
BUR MAAG	10° 24′	50° 37′
BUR MADU	10° 12′	43° 46′
BURMADU	10° 12′	43° 20′
BUR MADU	10° 30′	42° 30′
BUR MADOBA	10° 18′	46° 50′
BUR MIDGAN	8° 49′	49° 24′
BUR MODAHA MARODI	8° 16′	48° 26′
BUR WADAL	8° 28′	48° 16′
BUR SERI (top)	10° 35′	46° 25′
BURSHIN (W)	10° 35′	46° 23′
BURTA HABRTA	11° 13′	48° 42′
BURTA QORTAWEINA	10° 52′	43° 22′
BUR TINLEH	7° 48′	48° 02′
BURUD	9° 12′	48° 24′
BURWABA	9° 48′	43° 36′
BURWEIN	8° 20′	47° 21′
BUSHALE	9° 05′	43° 19′
BUSTA	10° 18′	45° 04′
BUTAWEINA	8° 50′	46° 32′
BUTIJI	9° 50′	43° 54′
BUTUR	9° 42′	43° 22′
DAADID	8° 34′	45° 29′
DAAGAG	10° 50′	46° 58′
DA'ANDER	9° 36′	46° 10′
DAAR	10° 10′	43° 10′
DAAR	10° 13′	49° 44′
DAARBUDUQ	9° 51′	44° 30′
DAAT	11° 08′	48° 39′
DABA ADADEH	9° 18′	44° 38′
DABA ADO	9° 46′	43° 19′
DABABLEHE	10° 46′	47° 46′
DABABLEYAL	8° 17′	46° 26′
DABA BUR DAB	9° 09′	46° 02′
DAB AD	9° 17′	45° 50′
DAB AD	8° 50′	46° 01′
DABA DEHAD (W)	10° 21′	46° 23′
DABA DEREH	10° 07′	46° 25′
DABA DILLA	10° 27′	43° 15′
DABA EMAN	10° 36′	46° 16′
DABA GARAGAROH	9° 02′	46° 44′
DABAGŌ	11° 07′	47° 59′
DABA GOHLEH	10° 25′	47° 30′
DABA GORAYALE	8° 43′	44° 50′
DABA GUMBUR	9° 31′	44° 32′
DABA GUMARED	9° 20′	43° 59′
DABA HIDIMED	9° 34′	44° 39′
DABAHOGATO	7° 47′	46° 50′
DABAIL DER (top)	10° 32′	46° 07′
DABAIL DER (W)	10° 33′	46° 07′
DABAIL WEINA	8° 37′	44° 20′
DABAIL WEINA	8° 33′	43° 57′
DABAIL WEINA	10° 11′	42° 43′
DABAIL WEINA	9° 14′	43° 38′
DABAIL WEINA	8° 28′	44° 15′
DABAISHA	11° 10′	48° 16′
DABA JATIREH	10° 42′	49° 16′
DABA KALHERERI	9° 40′	46° 20′
DABA LADIG	9° 33′	48° 30′
DABALOL	9° 02′	45° 25′
DABA MUGARED	9° 43′	45° 58′
DABAN	10° 43′	46° 16′
DABAN	10° 17′	45° 17′
DABAN LEHHSHE	9° 15′	48° 16′
DABANO	9° 35′	47° 20′
DABAP	10° 05′	42° 32′
DABAQABAD	8° 48′	45° 55′
DABARO	9° 21′	47° 26′
DABA SABAR	10° 24′	46° 22′
DABASANIS	10° 17′	44° 43′
DABA SHABEL	10° 22′	46° 23′
DABATALOH	9° 51′	45° 28′
DABA YODLEH	9° 14′	45° 46′
DABDER	10° 58′	48° 13′
DABDER	10° 02′	45° 22′
DABDER	10° 33′	45° 57′
DABDER	8° 09′	47° 47′
DABDERA	10° 24′	47° 35′
DABDERO	8° 56′	46° 27′
DABEHSHIN	11° 14′	48° 24′
DABERKEN	10° 00′	47° 35′
DABERQAD	9° 20′	45° 03′
DABGADOT	10° 44′	47° 01′
DABIADA	10° 27′	47° 30′
DABIN	8° 55′	45° 02′
DABILIH	9° 12′	43° 34′
DABIYO	9° 33′	47° 44′
DABLEHE	10° 46′	47° 46′
DABOLAQ	9° 31′	43° 52′
DABOLO	9° 08′	45° 24′
DABR	10° 21′	49° 45′
DABRA	11° 11′	48° 21′
DABR BAN	9° 55′	44° 29′
DABR DALOL	8° 57′	46° 21′
DABR YERE	9° 53′	44° 56′
DABURO	9° 36′	43° 42′
DAD	9° 03′	47° 05′
DADAB	10° 58′	47° 33′
DADABQALIN	10° 46′	47° 23′
DADABTA	9° 10′	45° 56′
DADABUH	10° 37′	49° 09′
DADAR	11° 07′	49° 52′
DADBARBAR	11° 05′	48° 10′
DADBIN	10° 40′	43° 17′
DADDERA	9° 22′	45° 52′
DADIN HANLADID	10° 32′	46° 09′
DADIN AULEH	11° 05′	48° 09′
DADIN WARABA	10° 02′	44° 10′
DADIN YAHIA	9° 50′	47° 28′
DADGALATO	10° 39′	46° 11′
DAD GALATO	8° 37′	47° 13′
DAD MADED	9° 15′	45° 08′
DAGA FAJAS	9° 32′	43° 09′
DAGAGA	9° 41′	45° 03′
DAGAHA AD	9° 33′	43° 30′
DAGAHA BE'EDA	10° 39′	43° 08′
DAGAHA GUDUD	10° 43′	46° 18′
DAGAHALEI	8° 05′	45° 46′
DAGAHA MAIDO	10° 05′	45° 02′
DAGAHANYA ADO	8° 05′	45° 00′
DAGAHANYA ADO	8° 32′	47° 27′
DAGAHANYA ADO	7° 13′	45° 39′
DAGAH BŪR	7° 38′	44° 52′
DAGAH BŪR	8° 14′	43° 34′
DAGAH DALOLE	8° 14′	49° 24′
DAGAH GURGUR	8° 59′	48° 07′
DAGAH HRAGR	9° 49′	45° 12′
DAGAH ISSASAR	9° 24′	46° 36′
DAGAH KULED	11° 02′	48° 50′
DAGAH LABASOD	10° 34′	47° 49′
DAGAH LAGANE	9° 51′	43° 36′
DAGAHLEH	8° 08′	45° 52′
DAGAH SHABEL	10° 09′	45° 13′
DAGARH	10° 27′	47° 15′
DAGOB	8° 06′	47° 09′
DAHAMO	9° 18′	48° 53′
DAHAMO	10° 38′	47° 27′
DAHAMOMA	8° 35′	48° 55′

TABLE 3—*continued*

DAHAN	9° 47′	48° 54′
DAHAR	9° 45′	48° 50′
DAHO	9° 32′	50° 40′
DAH YALE	8° 51′	45° 40′
DAI ANI	9° 32′	48° 37′
DAI MOLEH	10° 06′	45° 05′
DAIMOLEH WEIN	10° 07′	45° 03′
DAIMOLEH YER	10° 04′	45° 05′
DAIR FADAL	8° 16′	45° 24′
DAJIL	10° 55′	47° 42′
DAKAB	7° 40′	46° 20′
DAKAB	8° 25′	45° 23′
DAKABAHRU	8° 05′	44° 25′
DALA 'AD	9° 59′	44° 41′
DALADI	8° 57′	44° 13′
DALAHA	10° 15′	47° 17′
DALALALE	10° 22′	42° 59′
DALALAN	10° 50′	47° 05′
DALAMA ONEH	9° 05′	46° 23′
DALDA'A	8° 32′	47° 37′
DALDAWAN	9° 35′	44° 58′
DALEIMALE	10° 07′	42° 34′
DALKABLEH	11° 02′	48° 13′
DALLAHELEI	8° 47′	45° 02′
DALOH	9° 57′	44° 53′
DALOH	10° 47′	47° 18′
DALOL	10° 28′	47° 42′
DALOL DARALEH	9° 11′	48° 35′
DALOL HIGLALEH	9° 12′	48° 34′
DALOLO	9° 10′	48° 37′
DALOSHA	10° 04′	43° 05′
DALQAABLEH	10° 37′	46° 14′
DAL WARABOD	11° 08′	48° 55′
DAL WEIN	10° 15′	49° 05′
DAL YEREH	8° 33′	47° 35′
DALYOH	9° 44′	47° 36′
DAMAL	10° 32′	43° 19′
DAMAL	10° 53′	47° 25′
DAMAL	9° 45′	44° 08′
DAMALA ASSEH	8° 15′	47° 56′
DAMAL ABODI	8° 35′	45° 16′
DAMAL ABODI	10° 08′	46° 22′
DAMALAGAL	9° 34′	48° 33′
DAMALAGUB	8° 18′	47° 37′
DAMAL ASURA	7° 45′	45° 50′
DAMALA WARA OD	10° 55′	48° 22′
DAMAL DAAR	9° 40′	44° 06′
DAMAL DAFARUR	9° 48′	44° 10′
DAMALEH	11° 04′	48° 17′
DAMALEH	11° 06′	48° 16′
DAMAL GULANLEH	9° 51′	44° 12′
DAMAL JUGLI	9° 58′	49° 04′
DAMALO AS	8° 23′	47° 29′
DAMAN	9° 03′	47° 30′
DAMAS DER	10° 07′	46° 52′
DAM BALIN	10° 22′	45° 27′
DAMBAS BUR	7° 59′	45° 57′
DAMBAS WEIN	10° 40′	45° 50′
DAMBAS WEIN (W)	10° 34′	46° 21′
DAMBILIS	10° 14′	48° 27′
DAMER	9° 18′	48° 33′
DAMER	10° 33′	43° 27′
DAMERA	9° 25′	43° 28′
DAMERA AD	7° 46′	46° 47′
DAMERABOB	9° 25′	43° 28′
DAMERA LAGUHED	9° 40′	46° 13′
DAMERIH	7° 36′	44° 56′
DAMERO	8° 20′	47° 24′
DAMR	11° 00′	48° 27′
DAMUK	9° 58′	43° 14′
DANAN	11° 14′	48° 44′
DANAN	9° 02′	48° 17′
DANAN	10° 06′	47° 48′
DANAN GARBOLEH	10° 03′	45° 10′
DANANO	10° 33′	46° 22′
DANANO	10° 32′	46° 23′
DANANO	9° 30′	46° 40′
DANANTOLEH	9° 06′	48° 29′
DANBAKH	10° 23′	46° 38′
DANBARI	9° 40′	45° 43′
DANBARI	8° 32′	48° 32′
DANBEDA	10° 05′	47° 40′
DANDOYE	9° 07′	46° 44′
DANGHAREH	8° 23′	47° 08′
DANGHAREH	9° 47′	45° 56′
DAN GUDBAN	8° 10′	47° 38′
DANKUGLE	8° 50′	48° 40′
DANOT	7° 33′	45° 18′
DĀN QILAF	8° 07′	44° 52′
DĀN QILAF	8° 27′	44° 58′
DANWEIN	10° 17′	48° 15′
DAQAHAYA	8° 30′	47° 25′
DARA AS	10° 02′	43° 20′
DARABLEH	10° 08′	42° 56′
DAR AD	9° 17′	48° 32′
DARAGODLEH	10° 10′	44° 53′
DARAH DER	9° 00′	46° 39′
DARA DAWANLEH (W)	9° 58′	44° 14′
DARAR	9° 43′	44° 14′
DARAN HAREH	9° 27′	47° 38′
DARATOLEH	7° 19′	45° 30′
DARAWEINA (W)	9° 42′	44° 12′
DARAYO	11° 00′	48° 51′
DAREMA 'ADOH	8° 19′	46° 17′
DAREMO	7° 58′	44° 51′
DAREMO HAYEH	8° 48′	46° 49′
DARHUMO	9° 25′	44° 34′
DARI ADE	8° 36′	47° 15′
DARIANOLIH	8° 36′	47° 15′
DARIMO	9° 50′	43° 30′
DARISGUD	9° 10′	47° 40′
DARIYO	10° 09′	47° 38′
DARIYOGESAWEIN	9° 02′	47° 34′
DARJALEH	10° 39′	45° 55′
DARKAINLEH	10° 30′	43° 16′
DARKEIN DALAQ	8° 30′	44° 12′
DARKEIN GENYO	8° 00′	47° 00′
DARKEINLEH	9° 13′	45° 52′
DARKEIN WANASH	8° 09′	46° 34′
DARODFUL	8° 07′	45° 21′
DAROR	8° 15′	44° 45′
DAROR GAJO	10° 38′	43° 05′
DARREH AS	9° 59′	45° 01′
DARREH HORKA AYU	9° 42′	47° 04′
DARREH HOS	10° 02′	44° 57′
DARREH LAMAN	9° 25′	47° 34′
DARREH SAREI	9° 59′	44° 57′
DARSEI	9° 28′	47° 17′
DARUDA	7° 41′	47° 03′
DARWANAJI	9° 52′	43° 07′
DARYALEH	8° 24′	45° 28′
DARYALEH	8° 32′	47° 34′
DASOH	10° 33′	43 °07′
DAUL DAUL	10° 06′	46° 50′
DAULIS	10° 24′	46° 31′
DAURARIN	10° 11′	46° 34′
DAWA ALI	8° 55′	44° 15′
DAWA ALI	9° 47′	44° 48′
DAWA ALI	9° 24′	43° 54′
DAWA ALI	9° 48′	43° 17′
DAYAHA	10° 34′	47° 11′
DAYAN	8° 04′	46° 50′
DAYER	11° 04′	48° 13′
DAYER	11° 05′	48° 24′
DEA	8° 24′	43° 47′
DEBI	10° 02′	43° 12′
DEBILE	11° 05′	48° 24′
DEBIS	9° 49′	44° 38′
DEBIYE	9° 49′	43° 59′
DE'EREH	10° 21′	43° 26′
DE'EROH	9° 51′	44° 55′
DEGAWARABA	7° 59′	45° 14′
DEGBOH	10° 47′	47° 22′
DEGOIS	8° 30′	44° 35′
DEGWEINLEH	9° 15′	49° 00′
DEHEMAD	10° 46′	46° 51′
DEHH	10° 12′	45° 48′
DEHH AD	9° 44′	45° 13′
DEHHTAL	7° 23′	47° 08′
DEHHTAL	9° 22′	43° 02′
DEILO	8° 02′	47° 09′
DEIR	8° 17′	43° 55′
DEMEREI	7° 37′	44° 56′
DEN	9° 30′	45° 02′
DEN ARTE	10° 10′	45° 03′
DERBIGA (Gogeisa)	9° 46′	43° 35′
DERI	9° 19′	45° 30′
DERIN	9° 20′	45° 01′
DIA	11° 01′	48° 09′
DIBA'AH	10° 37′	46° 36′

TABLE 3—*continued*

DIBGAH	10° 29′	47° 03′
DIBGAL	10° 20′	47° 36′
DIBILEH	9° 12′	43° 36′
DIBILEH	10° 21′	43° 06′
DIBIQ	9° 22′	43° 30′
DIBIYALAH	9° 58′	43° 19′
DIBOLEH	9° 11′	43° 35′
DIBRAWEIN	10° 25′	42° 59′
DIBRAWEIN	10° 00′	43° 24′
DIBRIYADLEH	8° 35′	46° 10′
DIDARE	8° 45′	46° 01′
DIDAYA	9° 05′	47° 50′
DIDAYAH	9° 05′	47° 50′
DIDIB ADOH	8° 35′	47° 17′
DIDID	10° 09′	43° 00′
DIDIMOH	8° 25′	44° 20′
DIDIN	9° 40′	47° 11′
DIDIN	7° 11′	45° 17′
DIDIN	8° 28′	44° 29′
DIDIN	10° 40′	46° 45′
DIDIN	9° 44′	48° 07′
DIDIN ANJELO	8° 50′	46° 53′
DIDIN ARALEH	8° 13′	48° 25′
DIDINKA	8° 30′	47° 21′
DIDINKA	10° 55′	47° 28′
DI'ERO	10° 17′	43° 25′
DIG	9° 04′	47° 30′
DIG	7° 45′	44° 30′
DIGALE	9° 47′	44° 46′
DIGALE	8° 59′	48° 29′
DIGAWEINA	8° 20′	43° 57′
DIGELE	8° 57′	47° 30′
DIGELEH	9° 02′	46° 58′
DIH	9° 58′	45° 42′
	10° 12′	45° 48′
DIH AD	8° 59′	47° 44′
DIH AD	9° 43′	45° 14′
DIH DAHOT	10° 48′	48° 16′
DIH GUDBAN	10° 18′	42° 55′
DIHIMAD	9° 58′	45° 42′
DIK	10° 58′	47° 32′
DIKHIL	11° 06′	42° 23′
DIKRILE	8° 40′	43° 23′
DILALO	8° 34′	46° 30′
DILANZE	8° 47′	46° 55′
DILEYE	11° 02′	43° 21′
DILLIN ANOD	9° 11′	45° 11′
DILLA	9° 47′	43° 22′
DIMBILIL	10° 19′	45° 33′
DINAS	10° 04′	46° 27′
DINGAL	10° 04′	45° 04′
DINGAL	10° 12′	42° 55′
DINLEH	8° 21′	45° 51′
DINLEYAL	8° 27′	45° 42′
DINOLEHE	10° 29′	47° 08′
DINSO	11° 06′	48° 38′
DIREDAWA	9° 48′	41° 50′
DIREKH	11° 11′	48° 48′
DIRI GOBO	8° 47′	47° 11′
DIRINDIR	8° 05′	47° 15′
DIRINDIR	11° 10′	48° 32′
DIRINDIREH	8° 58′	47° 32′
DIRIQWEINEH	9° 10′	45° 42′
DITO	7° 43′	44° 45′
DIE'SIWEINA	8° 50′	48° 03′
DOBO	10° 17′	43° 16′
DOBO ANTUG	9° 17′	46° 52′
DOBO GUDUD	8° 27′	44° 52′
DOBO GUDUD	8° 51′	46° 03′
DOBO HARERI	10° 20′	43° 11′
DOBO WEINA	8° 00′	47° 35′
DOBO WEINA	9° 25′	44° 52′
DOD ADAD	8° 23′	44° 10′
DODAMA	9° 47′	45° 31′
DODI	9° 00′	47° 30′
	8° 40′	48° 08′
DODI GABAN	9° 42′	46° 58′
DOFDULEH	11° 17′	48° 31′
DOFE'O	9° 29′	44° 50′
DOFARAYAL	8° 23′	46° 23′
DOFARGUD	9° 07′	48° 25′
DOGOBLEH	8° 25′	48° 06′
DOGOR	9° 39′	44° 20′
DOGOSHE	8° 31′	45° 44′
DOGUBLEH	9° 28.	47° 26′
DOH ADA	10° 32′	44° 08′
DOHADA MAHATO	8° 15′	44° 10′
DOH DERA	10° 24′	48° 10′
DOH MADED	8° 15′	46° 12′
DOHO BILAYU	8° 09′	44° 47′
DOHOD	10° 39′	47° 04′
DOHODA ARALEH LUGBUR	8° 15′	44° 10′
DOHO GARASLEH	8° 10′	44° 15′
DOHO GERILE	7° 52′	47° 06′
DOHO GORAYU	8° 24′	44° 51′
DOHO HABASWEIN	8° 11′	44° 28′
DOHR DUR	11° 00′	48° 23′
DOKDOKSIN	10° 08′	45° 47′
DOKUKULI	10° 00′	46° 45′
DOLO	6° 56′	45° 07′
DOMBIRELLI	8° 12′	45° 03′
DO'MO	7° 53′	46° 51′
DO'MO	10° 41′	48° 44′
DON	8° 38′	46° 18′
DÖN	8° 15′	47° 29′
DONIGAL	10° 43′	45° 55′
DONKUKOQ	8° 10′	48° 11′
DONNI	10° 53′	47° 05′
DO'OL	8° 17′	46° 25′
DO'OLEH	7° 48′	46° 20′
DO'OLEH HADHAD	8° 43′	48° 29′
DOOLMADU	9° 36′	47° 31′
DOQONQAL	10° 34′	44° 08′
DORA JEBIS	9° 58′	43° 09′
DORER	10° 33′	46° 04′
DOSALEH	7° 19′	47° 29′
DOXAWEINA	8° 54′	48° 02′
DOYO	9° 58′	47° 32′
DOYO	10° 34′	46° 36′
DUBÀR	10° 20′	45° 04′
DUBATO	9° 44′	44° 29′
DUBERIN	10° 02′	46° 07′
DUBERIN TUG	10° 08′	45° 53′
DUBQAILO	9° 59′	44° 44′
DUBRIAT	10° 21′	45° 09′
DÙBUR	9° 52′	45° 18′
DUBURI	9° 46′	46° 28′
DUBURIHI	9° 34′	43° 40′
DUBUROH	9° 39′	43° 32′
DUD	9° 19′	44° 08′
DUD ADAD	8° 22′	44° 10′
DUD HOI	10° 12′	48° 25′
DUDKAWEIN	9° 19′	44° 08′
	9° 18′	44° 35′
DUDIMO	9° 21′	47° 14′
DUDO	9° 19′	50° 14′
DUDO	10° 09′	46° 25′
DUDSUBHANYO	8° 57′	46° 07′
DUDSUBHANYO	9° 53′	47° 23′
DUDUB	6° 55′	46° 41′
DUDUBALEH	10° 28′	46° 10′
DUDUB (AS) (W)	10° 26′	46° 22′
DUDUB (QORI'AD)	10° 20′	46° 46′
DUDUBA	9° 49′	44° 50′
DUDUBO	11° 06′	48° 54
DUDUBOH	9° 47′	44° 55′
DUDUMA AD	8° 20′	44° 30′
DUDWEIN	9° 19′	44° 08′
DUFEA AU	10° 32′	47° 50′
DUFEA 'AU	9° 21′	48° 51′
DUG	11° 02′	48° 51′
DUG	9° 21′	42° 57′
DUG DUGLEH	7° 35′	45° 20′
DUGLEHI	8° 30′	46° 45′
DUG TIRREHWEIN	11° 02′	48° 15′
DUG TIRREHYER	11° 02′	48° 14′
DUHULALI	8° 55′	44° 21′
DUHUMALU	9° 19′	47° 22′
DUHUN	8° 32′	47° 25′
DUHUN	10° 03′	46° 06′
DUHUN	9° 54′	43° 26′
DUHUNKUREB	9° 09′	46° 39′
DULA'AR'ARAF	8° 53′	46° 20′
DUL AD	9° 00′	45° 15′
DUL AD	8° 50′	46° 01′
DULATI	9° 37′	42° 40′
DULBEED	8° 58′	46° 34′
DUL BEED	9° 01′	47° 46′
DUL BE'ED	9° 43′	44° 54′

DUG LAL	8° 40′	46° 28′
DUL GERENUGED	9° 10′	48° 50′
DUL GUBED	9° 40′	46° 07′
DUL GUBET	10° 33′	46° 14′
DULI	10° 49′	47° 10′
DULKA HUDUN	9° 06′	47° 28′
DUL MADOBA	9° 07′	46° 00′
DUL MADOBA	8° 40′	49° 13′
DUL MADOBEH	9° 45′	44° 50′
DUL MADU	10° 04′	50° 13′
DUL MEGAG	9° 42′	44° 58′
DULOH	9° 42′	44° 59′
DULYA	9° 44′	47° 36′
DUMAIYOH	10° 22′	46° 24′
DUMEI	8° 55′	48° 31′
DUMEI	10° 32′	47° 16′
DUMOD	11° 13′	49° 01′
DUMODLEH	8° 30′	46° 22′
DUNBÜLUK	9° 55′	48° 11′
DUN DOYE	9° 04′	46° 50′
DUNDUMA AD	8° 20′	44° 21′
DUN DUMA ADLEI	9° 06′	43° 26′
DUNDUMA DER	8° 42′	45° 02′
DUNDUMALIQLIQ	8° 31′	46° 28′
DUNDUMOH	10° 05′	48° 48′
DUNDUN	10° 05′	48° 48′
DUR AD	8° 58′	45° 02′
DURBET	11° 09′	48° 35′
DURDUR	10° 14′	43° 36′
DURDUR AD	10° 12′	43° 01′
DURDUR DURBEIT	10° 14′	47° 24′
DURDUREH	11° 18′	48° 36′
DURDURU	10° 28′	48° 52′
DURDIL	10° 42′	45° 48′
DUREI	9° 12′	43° 45′
DUR ELAN	10° 08′	46° 22′
DURERO	10° 10′	47° 50′
DUREYAL	7° 16′	47° 35′
DUR IDAD	10° 48′	49° 14′
DURO	10° 04′	46° 31′
DURUJEH	10° 05′	48° 42′
DUR UDAN	11° 02′	43° 37′
DURUKSI	8° 31′	45° 27′
DUR WAYALI	8° 05′	45° 39′
DUR WAYELEH	9° 23′	48° 35′
DURYAH	9° 25′	43° 17′
DUS	8° 16′	48° 17′
DUSKA GUBTEI	10° 04′	46° 42′
DUSMO	8° 10′	45° 01′
DUSMO	8° 20′	43° 55′
DUWI	10° 02′	44° 14′
DUYO ALI	7° 29′	46° 34′
DUYOH	10° 34′	46° 46′
DUYO HNSHO	8° 32′	47° 21′
EDADO	10° 12′	42° 55′
EDAR	10° 29′	43° 10′
EDEGAN	9° 02′	44° 49′
'EḎIḎI	8° 39′	43° 18′
EDI JAREH	10° 11′	47° 58′
ED NAAS (*see* 'ID NAAS)		
EGA'	10° 00′	46° 22′
EGAG	8° 01′	47° 48′
EGAG	8° 40′	46° 31′
EGAG	9° 22′	48° 28′
EGAL HAD	10° 01′	43° 06′
EGU	9° 51′	43° 15′
EHEDAD	10° 00′	47° 00′
EHHO	9° 34′	46° 52′
'EIK	8° 58′	45° 20′
'EIK BIL'ILEH	9° 22′	45° 16′
EI MOQLALEH	7° 39′	46° 50′
EIL	7° 59′	49° 49′
EINAD	11° 02′	48° 56′
EL ADEH	9° 46′	47° 36′
EL AFWEIN	9° 55′	47° 15′
ELAHAN	10° 55′	47° 26′
'ELAL	9° 56′	46° 17′
ELAM BIDOLIH	8° 51′	46° 01′
ELAM BILOLE	9° 59′	46° 08′
ELAN GUBADO	10° 01′	45° 13′
ELANKA	9° 40′	45° 04′
EL ANOD	10° 09′	44° 35′
EL ANOD (W)	10° 12′	46° 26′
EL ANOD	10° 03′	44° 30′
ELAYU	11° 15′	48° 53′
EL BAHAI	9° 25′	42° 52′
EL BAHAI	6° 40′	45° 40′
EL BAHAI	7° 58′	44° 57′
EL BAHAI	10° 31′	46° 36′
EL BALDOH	9° 48′	43° 04′
EL BIRDALEH	10° 09′	44° 59′
EL BIRDALEH	9° 47′	43° 27′
EL BUH	9° 50′	50° 40′
EL BUH	10° 13′	48° 20′
EL BULSHO	8° 25′	45° 53′
EL DAB	8° 57′	46° 31′
EL DADABLEH	10° 28′	47° 16′
EL DABAN	10° 48′	47° 23′
EL DAMAN	9° 58′	44° 22′
EL DAMAS	10° 46′	46° 11′
EL DANAN	10° 04′	44° 29′
EL DARAD	10° 42′	45° 36′
EL DER	10° 14′	47° 19′
ELDER	8° 44′	47° 19′
EL DERA	9° 40′	45° 50′
EL DERE	9° 35′	45° 52′
EL DERO	11° 09′	49° 01′
EL DIBIR (W)	10° 20′	46° 26′
ELDIBIR	10° 54′	47° 15′
EL DIBIR	11° 07′	48° 22′
EL DIBIR	11° 04′	48° 51′
EL DIBBIR	8° 15′	47° 06′
EL DOFAR	10° 38′	49° 02′
EL DUR ELAN	10° 07′	46° 22′
EL ELANLEH	10° 09′	46° 03′
EL FURDAN	6° 53′	46° 44′
ELER UDOH	10° 06′	43° 01′
EL FORLABA	10° 13′	42° 47′
EL GAL (Silil)	10° 59′	43° 27′
EL GINISED	9° 30′	42° 41′
EL GIRDI	10° 34′	45° 13′
EL GOREI	11° 26′	43° 18′
EL GOS	7° 13′	48° 51′
EL HAḎAN	11° 01′	47° 10′
EL HADATAH	9° 10′	48° 45′
EL HADE	9° 50′	43° 47′
EL HIḎID	7° 57′	47° 39′
EL HUMA	9° 22′	45° 10′
ELILAD (W)	10° 33′	46° 20′
EL INA AMA	10° 34′	47° 51′
ELIS	10° 12′	42° 38′
EL JEHH	8° 20′	47° 13′
EL LAHAN		
EL LAHELEI	10° 09′	44° 10′
EL LAHELEI	9° 23′	47° 10′
EL LAMAN	10° 32′	47° 21′
EL LAMUH	9° 40′	45° 03′
EL MAAN	10° 05′	46° 24′
EL MADAH	9° 26′	42° 56′
EL MADOBA	8° 26′	45° 48′
EL MADU	8° 39′	48° 20′
EL MADU	10° 14′	49° 13′
EL MAGA'ALE	10° 21′	48° 11′
EL MARALE	8° 42′	46° 11′
ELMIS	10° 22′	44° 17′
EL QOREI	11° 26′	43° 18′
EL QOREI	10° 30′	47° 30′
EL QOT		
EL SHEIKH	9° 27′	44° 17′
EL USBALEH	10° 54′	46° 58′
EL WAH	8° 00′	48° 05′
EL WA'AISED	8° 11′	48° 16′
EL WEIN	9° 38′	47° 39′
EL WEIN	10° 04′	45° 23′
EL WEIN	8° 54′	46° 13′
EL YA'EI	9° 26′	43° 24′
EMR YER (W)	10° 45′	45° 57′
EOE	10° 29′	46° 15′
ERAGO	7° 54′	47° 10′
ERATUKO	10° 36′	45° 56′
EREDUWE	11° 04′	48° 56′
ERGAN	10° 58′	48° 18′
ERIAN	10° 00′ 9° 55′	47° 30′ 47° 35′
ERIE	10° 06′	49° 14′
ERIGAVO	10° 37′	47° 22′
ERTOLEH	10° 40′	47° 02′

TABLE 3—*continued*

FADANFAD	10° 01′	45° 07′
FADANFAD	9° 57′	46° 10′
FADI GERADLEH	8° 14′	46° 17′
FADIGAP	9° 38′	47° 02′
FADIWEIN	8° 15′	47° 16′
FADWEIN (W)	11° 15′	43° 26′
FAF	9° 22′	43° 38′
FAFANYER	7° 36′	44° 46′
FANDALO	10° 15′	46° 06′
FANTAWEINA	8° 02′	46° 20′
FA'O	9° 12′	45° 49′
FAQAYUB	10° 00′	46° 00′
FARA ADADLEH	8° 18′	47° 34′
FARA DEROH	10° 16′	45° 08′
FARA GOL	9° 20′	46° 58′
FARA LIBAN	10° 20′	43° 03′
FARA MEGAG	10° 26′	48° 03′
FAR 'ANO	7° 53′	44° 40′
FARA SANKADERA	9° 35′	43° 27′
FARASLAYAL	8° 29′	46° 13′
FARAWEINEH	9° 26′	43° 48′
FARA YERYER	9° 02′	46° 44′
FAR BARIYO	8° 39′	46° 30′
FAR BIL'IL	8° 15′	47° 56′
FARDALAYE	8° 00′	46° 00′
FAR DEBIYOD	8° 22′	48° 19′
FAR GADLEH	8° 37′	47° 18′
FAR GALEH	10° 38′	47° 06′
FARGAMIN	8° 09′	48° 18′
FAR HAMUD	10° 13′	48° 46′
FAR HAREI	7° 11′	45° 28′
FAR HASKUL	9° 04′	48° 39′
FAR LIBAHH	9° 15′	44° 10′
FAR MARA	9° 01′	46° 25′
FAR MARA	9° 18′	48° 51′
FARO	9° 41′	47° 39′
FARO	10° 40′	46° 19′
FARO ADO	9° 18′	44° 45′
FARO DUGAG	8° 17′	47° 33′
FARO IDALIH	8° 55′	48° 18′
FAROMEGAG	10° 26′	48° 03′
FARO SARE	10° 38′	46° 22′
FAR SHABEL	9° 07′	47° 40′
FARSHABEL	9° 59′	48° 46′
FARUR	10° 05′	44° 28′
FARURTAMIDGAN	9° 03′	44′ 11°
FARWEIN	9° 00′	43° 15′
	9° 10′	43° 30′
FAYO	9° 20′	45° 46′
FEDA 'AD	7° 55′	46° 20′
FEDA ADO	7° 47′	45° 56′
FEDI GERADLEH	7° 58′	46° 40′
FERDIDIN	8° 05′	47° 55′
FERDIDIN	10° 04′	46° 17′
FERDIGAP	9° 38′	47° 02′
FERIO	10° 16′	45° 32′
FUGUHO	10° 19′	44° 13′
FULA	10° 51′	43° 08′
FULAH	11° 04′	43° 31′
FULANFUL	8° 25′	44° 28′
FULANFUL	9° 59′	43° 08′
FUREYAL	8° 32′	46° 10′
FUTAHAF	8° 28′	48° 22′

GA'AB	10° 15′	46° 57′
GA'AD	9° 22′	46° 11′
GA'ALGULEH	9° 16′	48° 40′
GAAMADERELI	8° 04′	46° 57′
GA'AN	9° 54′	44° 12′
GAAN	11° 15′	48° 21′
GA'AN BARILEH	10° 20′	46° 11′
GA'AN LIBAH	9° 52′	44° 48′
GABA	8° 07′	50° 02′
GABABUR	7° 04′	45° 16′
GABAID	9° 00′	48° 36′
GABAL	7° 02′	45° 35′
GABAL DEIS	10° 42′	45° 58′
GABALIMOH	8° 02′	44° 38′
GABAN HURDO	9° 32′	43° 43′
GABAN HURDU	8° 00′	44° 15′
GABAN HURUD	7° 56′	44° 22′
GABAR MADO	9° 40′	46° 56′
GABATO	10° 48′	47° 15′
GABDA	10° 22′	47° 20′
GABDA	10° 26′	48° 01′
GABDERA	10° 20′	43° 35′
GABEIDER	8° 32′	48° 34′
GABEN HURIDO	9° 32′	43° 43′
GABILALEH	8° 29′	46° 13′
GABO	8° 55′	46° 17′
GABRI	8° 00′	45° 50′
GAD	10° 05′	43° 13′
GADAD	11° 04′	48° 31′
GADERIO	10° 37′	45° 55′
GADHELLI	9° 10′	46° 55′
GADKA BANYERA	9° 28′	44° 27′
GADKA IDINKA	10° 42′	46° 00′
GADKA TINADKA	9° 48′	44° 54′
GADKA WEIN	10° 02′	44° 58′
GADKA YER	10° 04′	44° 59′
GADKA YOGHOL	9° 29′	43° 53′
GADLADAL	10° 01′	43° 04′
GADLEYAL	8° 27′	47° 46′
GADLEYAL	8° 53′	46° 02′
GADOB MARENEH	10° 17′	44° 45′
GADYERA	8° 33′	46° 19′
GAFU	6° 59′	45° 20′
GAGAB (W)	11° 13′	43° 29′
GAGAB	8° 19′	44° 22′
GAGABOD	8° 52′	46° 04′
GAGBODLEH	10° 32′	43° 15′
GAGUL	10° 47′	48° 26′
GAHAID	8° 02′	47° 45′
GAHASH	8° 15′	47° 55′
GAHAIDLEH	8° 42′	44° 42′
GAHAIDWEINA	8° 24′	44° 06′
GAHAWEINEH	8° 52′	45° 41′
GAHED	8° 28′	44° 11′
GAHO	8° 59′	43° 02′
GAHODWEINA	8° 34′	47° 36′
GAL (W)	10° 36′	45° 57′
GAL	10° 24′	46° 38′
GALADI	6° 57′	46° 26′
GAL AWALEH (W)	10° 41′	45° 54′
GAL DUBLEH (W)	10° 37′	46° 05′
GAL DE'ERE	10° 29′	46° 04′
GAL EDLE	9° 49′	47° 11′
GALFEI	8° 40′	46° 36′
GALGAL	8° 33′	46° 17′
GALGAL	10° 18′	46° 18′
GALGALLA	10° 59′	49° 03′
GAL HAMUD	7° 33′	47° 08′
GAL HEDIGALE	10° 27′	45° 41′
GALHOR	9° 15′	47° 27′
GAL IYO Q'A	9° 45′	47° 20′
GALKA SANDUKHA	7° 56′	45° 48′
GALKAYU	6° 47′	47° 26′
GALKUDAL	8° 25′	47° 22′
GALMADOBEH	10° 35′	43° 04′
GALNOLEH	8° 39′	48° 38′
GALOL ADE	9° 52′	47° 04′
GALOL ARSHILE	9° 05′	46° 05′
GALOLEH	9° 27′	44° 58′
GALOLEH	9° 47′	45° 18′
GALOLEH	9° 43′	43° 40′
GALOL GARA'AH	9° 05′	46° 06′
GALOL GUNLEH	8° 30′	45° 06′
GALOL HOGATU	8° 58′	46° 00′
GALOL MADO	9° 10′	46° 05′
GALOL MADOBEH	9° 15′	45° 50′
GALOL WABANEH	8° 37′	44° 50′
GALOL WEINEH	9° 02′	45° 02′
GAL QAWL	10° 23′	46° 38′
GAL RIADLEH (W)	10° 35′	46° 22′
GAL RUBLEH	10° 05′	47° 05′
GAL SHIMBIROD	10° 20′	46° 49′
GAL URAGLEH	10° 57′	47° 24′
GAL WETO	11° 07′	47° 56′
GAMAD	8° 49′	43° 43′
GAMBAD	8° 29′	44° 27′
GAMBADE	10° 58′	47° 43′
GAMBADEH	8° 35′	47° 37′
GAMBA HO (W)	10° 46′	45° 59′
GAMBA HOR	8° 56′	46° 06′
GAMILE	9° 07′	47° 29′
GAMOJIN	10° 19′	43° 11′
GAMOSIN	10° 16′	43° 20′
GANBISEH	7° 31′	44° 54′
GAOLO	9° 02′	48° 17′

TABLE 3—*continued*

GARA	10° 35′	50° 47′
GARA AD	6° 57′	49° 19′
GARAB	8° 50′	46° 45′
GARABAD	9° 38′	43° 45′
GARAB AD	9° 58′	47° 34′
GARAB AD	9° 05′	46° 28′
GARAB AD	9° 48′	44° 45′
GARAB AD	10° 02′	42° 42′
GARABASSEH	9° 20′	42° 53′
GARAB HAGATU	8° 47′	47° 57′
GARAB HARIR	9° 05′	43° 23′
GARABIDANLEH	8° 02′	45° 31′
GARABIS	9° 27′	43° 37′
GARABQAREH	10° 26′	47° 24′
GARABWEIN	10° 43′	46° 13′
GARABWEIN	10° 10′	45° 45′
GARAD	10° 14′	42° 54′
GARADAG	9° 29′	46° 53′
GARADÛG	8° 27′	44° 10′
GARAGUMATO	9° 43′	42° 56′
GARAH	10° 48′	48° 23′
GARAH	9° 15′	48° 25′
GARAJILEH	10° 16′	48° 45′
GARAMBALAD	8° 21′	48° 05′
GARAMO	8° 11′	48° 05′
GARANDUB	8° 15′	48° 07′
GARASGOI	9° 54′	45° 13′
GARASLEH	10° 34′	43° 16′
GARBADA AD	10° 33′	46° 05′
GARBADIR	10° 07′	44° 57′
GARBADIR	8° 27′	47° 56′
GARBA GABAT	8° 39′	48° 45′
GARBAHADLEH	9° 37′	43° 16′
GARBAHARIR	8° 45′	43° 22′
GARBALEH	10° 16′	49° 47′
GARBUTEYE	7° 57′	47° 57′
GARDA BERIS	10° 30′	48° 53′
GARDO	9° 29′	49° 02′
GAREIDALE	9° 15′	43° 38′
GARGARA	10° 45′	43° 05′
GARGAR AD	10° 50′	46° 59′
GARGAR AD	9° 12′	45° 02′
GARGARO	9° 37′	45° 50′
GARGOR (W)	10° 25′	46° 17′
GARGORI	10° 19′	43° 05′
GARLOGUBEI	6° 52′	45° 03′
GARMAL	8° 35′	50° 19′
GARÔDI	8° 53′	44° 27′
	8° 55′	43° 57′
GAROH	10° 07′	47° 08′
GARONWEIN	8° 35′	49° 34′
GARUNLEH	8° 10′	49° 35′
GARYERA	9° 10′	48° 12′
GASHAMA AD	8° 35′	44° 12′
GASHAMADA	8° 07′	45° 21′
GASHAMADA	8° 35′	44° 12′
GATAMA	9° 20′	45° 44′
GAUGAULE	11° 05′	48° 35′
GAULALALEH	8° 04′	45° 44′
GAULALEH	9° 30′	48° 44′
GAWAH	9° 42′	43° 00′
GAWBAWEINA	7° 55′	46° 35′
GAWLKA	9° 42′	43° 24′
GEBA GEBO	9° 45′	43° 56′
GEBI	10° 39′	48° 30′
GEBI ASSEH	8° 18′	43° 51′
GEBIDER	9° 00′	48° 34′
GEBILE	9° 42′	43° 37′
GED ABAIRA	9° 40′	43° 45′
GED ABOKR	9° 21′	45° 30′
GED ALAN	11° 06′	48° 40′
GED ASO	8° 08′	47° 51′
GED BALAD	9° 01′	43° 36′
	9° 30′	43° 25′
GED BAKEYE	10° 43′	46° 08′
GEDEIS	9° 58′	45° 31′
GED ELMI	9° 43′	49° 00′
GED GAL	8° 23′	48° 26′
GED GOREYOH	8° 22′	46° 11′
GEDID	9° 35′	43° 09′
GEDIDA	10° 15′	43° 16′
GED DIQSIH	9° 52′	43° 24′
GED DOBO	10° 07′	45° 12′
GEDKA DEBTA	9° 48′	43° 59′
GED LARIFE	10° 59′	48° 22′
GED MADU	11° 00′	47° 31′
GED NUGUL	8° 44′	48° 50
GEDO MIDELE	8° 36′	48° 20
GEDO QARSATO	8° 52′	46° 02
GED QUDUN	9° 27′	43° 27
GED REDABED	9° 27′	44° 47
GED SAREI	10° 09′	46° 07
GED SORON	8° 51′	46° 20
GEDWABANEH	8° 42′	45° 11′
GED YERO	11° 02′	48° 41′
GEGEBOD	11° 07′	48° 30′
GÊGEDI GOREGA	8° 44′	44° 18′
GEILAH	10° 20′	43° 06′
GEL ASSEYE	9° 28′	46° 50′
GEL ASSEYE	8° 35′	47° 39′
GEL 'AYILIYEH	7° 50′	45° 41′
GEL DORE	10° 59′	48° 21′
GEL DUB	10° 41′	45° 55′
GELGELINTA	9° 17′	45° 44′
GELI ADAD	10° 08′	44° 03′
GOREYUODET	9° 02′	45° 17′
GEL HUBSHO	8° 40′	48° 05′
GEL HUNGU	10° 45′	43° 01′
GELI DARHUMOH	9° 25′	44° 32′
GELKUSORAN	8° 56′	46° 21′
GELKUSORAN	9° 33′	46° 42′
GELKUSORAN	8° 13′	47° 13′
GELMAQARIS	9° 24′	43° 48′
GELMAWEDO	8° 07′	47° 20′
GEL NUJIS	8° 00′	47° 55′
GELOKOR	10° 43′	46° 08′
GELOKR	8° 34′	43° 51′
GELOKR	10° 04′	45° 09′
GEL QARBET	9° 30′	43° 57′
GEL QARISO	8° 00′	48° 03′
GEL SADADEYO	8° 21′	45° 43′
GEL SO'O	8° 10′	44° 35′
GEL SORE	11° 00′	48° 21′
GEL WANAJI	9° 15′	46° 08′
GEL WANAJI	10° 34′	43° 00′
GEL WETEN	11° 02′	47° 55′
GEL YUMIS	9° 06′	45° 41′
GENBISSEH	7° 39′	44° 54′
GERARA DEREH	7° 40′	45° 54′
GERENUKHLEH	8° 10′	45° 50′
GERGARA (W)	10° 44′	43° 02′
GERIAD	10° 55′	43° 22′
GERIADO (W)	10° 33′	43° 06′
GERIAN (W)	10° 30′	46° 15′
GERIGOAN	10° 12′	44° 58′
GERIGOAN	10° 21′	42° 48′
GERIGOAN	10° 17′	45° 02′
GERIGOAN	10° 14′	43° 46′
GERIGOAN	10° 04′	44° 21′
GERIH	10° 24′	44° 37′
GERIKAL	10° 01′	42° 42′
GERISO	10° 36′	43° 27′
GERO	7° 00′	46° 57′
GEROWEH	8° 23′	48° 29′
GESDER (W)	10° 18′	46° 25′
GESERGEBI	10° 03′	43° 22′
GESIR (*see* QASIR)		
GESJIFEN (W)	10° 35′	46° 10′
GETITALE	9° 36′	44° 49′
GHADURGI	10° 53′	47° 08′
GHARAB	10° 27′	47° 24′
GHARAB AD (W)	10° 33′	46° 05′
GHARAB HURED	10° 42′	45° 55′
GHARAB ONKHORED	10° 44′	46° 13′
GHARAB WEIN	10° 35′	46° 05′
GHARAB WEIN	10° 43′	46° 13′
GHAREH	10° 17′	47° 36′
GHERRI	9° 30′	43° 00′
GIDIL	9° 59′	46° 15′
GINIYAH	9° 03′	45° 20′
GIRNI	9° 47′	45° 06′
GOANI (top)	10° 27′	46° 10′
GOBABLEH	8° 42′	46° 29′
GOB ANDAWEIN	10° 09′	46° 05′
GOBDERA	10° 14′	45° 24′
GOBDERA	10° 10′	43° 13′
GOB EMET	11° 00′	48° 11′
GOBHAGALE	8° 28′	47° 30′
GOBLA DOHH	8° 16′	46° 20′
GOBLEH	8° 42′	46° 29′

TABLE 3—*continued*

GOBLEH	9° 09′	47° 35′
GOBLEH	9° 16′	48° 06′
GOBLEH	9° 16′	43° 07′
GOBLEH DOHH	8° 27′	46° 57′
GOBLEYO	9° 16′	48° 07′
GOBSAR	10° 30′	44° 13′
GOBWEINA	7° 55′	46° 34′
GOBYEREH	9° 30′	43° 13′
GODA ALE	10° 54′	43° 02′
GODA BASARI...	10° 42′	42° 36′
GOD AD...	10° 27′	43° 04′
GOD ADE	8° 58′	46° 39′
GOD ADLEI	11° 15′	48° 48′
GOD ĀLO	9° 08′	47° 55′
GOD ANOD	10° 07′	47° 18′
GOD DURUWAH	7° 56′	47° 50′
GOD DURUWAH	9° 18′	48° 43′
GOD HAILE	9° 03′	47° 03′
GODIGA ARORI	9° 27′	45° 27′
GODIN	8° 50′	48° 00′
GODIN EBRAIN	10° 57′	43° 28′
GODIRALI	8° 04′	45° 35′
GODOB	7° 40′	49° 32′
GODOREI	9° 43′	46° 04′
GOD WARABA...	9° 18′	48° 43′
GOFLUL	9° 53′	42° 25′
GOGAN	11° 00′	43° 22′
GOGESAH	9° 46′	43° 37′
GOGOL WANAK	9° 39′	43° 38′
GOGOSHIGABE	8° 58′	48° 34′
GOH DERO	8° 59′	46° 28′
GOIGETEH	9° 47′	42° 53′
GOITA	9° 42′	45° 27′
GOJILEH...	10° 28′	46° 08′
GOKTI	10° 05′	42° 52′
GOLADABED	9° 18′	46° 25′
GOL ADE	10° 07′	45° 02′
GOL ALIGHERI	8° 24′	48° 18′
GOLA MIDIG	10° 46′	45° 46′
GOL BALAD	9° 07′	48° 09′
GOL BULALEH	8° 52′	44° 25′
GOL DERO	8° 42′	46° 34′
GOL DERO	9° 50′	49° 00′
GOL EBED	10° 11′	45° 06′
GOLELUH	8° 53′	48° 13′
GOL GODON	9° 53′	45° 19′
GOLGO'ONDO	9° 08′	47° 50′
GOL HARFO	9° 11′	47° 38′
GOLILOH	8° 44′	47° 00′
GOLLAYEDEH	8° 33′	47° 22′
GOLUJID...	10° 05′	42° 58′
GONDALIBAH	8° 19′	45° 05′
GONDAWEINA...	9° 17′	45° 42′
GONLEH...	8° 40′	45° 36′
GONO	9° 47′	50° 08′
GONWEINEH	9° 04′	43° 56′
GONOF	10° 37′	45° 56′
GO'O	9° 47′	44° 56′
GOONDALEH	8° 16′	44° 16′
GO'ONDALEH	8° 41′	44° 58′
GO'ONDALEH	8° 34′	46° 20′
GORAHAI	6° 36′	44° 22′
GORAHHWEIN...	9° 33′	45° 13′
GORA QADEI	8° 23′	43° 45′
GORAWARABA	8° 57′	46° 34′
GORAYA 'EDI	7° 31′	45° 18′
GORAYA HUN...	8° 36′	45° 20′
GORAYU DEGALA	8° 29′	45° 47′
GORBADEH	11° 16′	48° 36′
GOREGA...	8° 43′	44° 16′
GOREI (LG)	9° 40′	45° 06′
GOREYUODET...	9° 02′	45° 17′
GORFO	10° 07′	46° 16′
GORGOR (Fort)	10° 59′	47° 30′
GORGOREH	8° 15′	45° 43′
GORI	10° 00′	45° 01′
GORIA AD	10° 47′	46° 14′
GORIA ADO	9° 03′	43° 54′
GORIAHUN	8° 36′	45° 20′
GORIALE	9° 03′	46° 02′
GORIALE	11° 10′	48° 30′
GORIALE	7° 35′	45° 20′
GORIALE	7° 52′	46° 29′
GORIALE	9° 46′	46° 15′
GORIALE	9° 33′	44° 31′
GORIA MADOBA	10° 59′	47° 35′
GORIA MADOBO	10° 07′	45° 07′
GORIAWEIN	8° 55′	46° 19′
GORIDER	9° 08′	46° 41′
GORI DUMAT	11° 09′	48° 23′
GORI GUBAN	10° 35′	46° 08′
GORI JAB	10° 17′	43° 04′
GORIKUHAR	9° 09′	47° 51′
GORILE	7° 10′	47° 40′
GORILE	7° 57′	47° 35′
GORILEH	7° 58′	47° 35′
GORI MADOBA	11° 04′	48° 39′
GORIRIT...	8° 03′	48° 06′
GORI WAHAROD (W) ...	10° 46′	46° 08′
GORMANLEH	11° 05′	48° 48′
GOSA WEINA	9° 07′	46° 46′
GOSIN	8° 38′	47° 23′
GOSOLKA	9° 12′	44° 11′
GOTIN	10° 02′	45° 08′
GOTIN	9° 45′	46° 01′
GUBADO...	10° 18′	48° 28′
GUBADOH	8° 51′	45° 52′
GUBAT ANA'MADU	8° 05′	45° 06′
GUBAT DALA'O	8° 15′	45° 09′
GUBAT FALAGO	7° 50′	45° 30′
GUBAT GAHAWEINA ...	8° 52′	45° 41′
GUBAT GUN	8° 17′	45° 00′
GUBAT GUN	7° 52′	44° 24′
GUBAT HALDAR	8° 22′	45° 42′
GUBAT HARIR	8° 54′	45° 44′
GUBAT HUN	8° 53′	45° 34′
GUBATI HIL YER	8° 46′	45° 27′
GUBATI HIL WEIN	8° 49′	45° 27′
GUBAT JIRAN...	7° 21′	49° 19′
GUBATKA AHMEDHIRI ...	8° 25′	44° 25′
GUBATO AD	7° 58′	46° 54′
GUBATO AD	8° 02′	46° 55′
GUBATO ARAB	8° 57′	45° 13′
GUBATO FIN	8° 48′	45° 08′
GUBATO LIBAHELE	8° 56′	44° 55′
GUBATO WEIN	8° 23′	43° 57′
GUBATOYIN	8° 42′	43° 59′
GUBATOYIN	9° 35′	47° 56′
GUBATOYIN	9° 36′	46° 13′
GUBAT SANYERA	9° 01′	45° 40′
GUBAT WARABEYE	8° 54′	45° 38′
GUDAD	8° 06′	45° 56′
GUD FARO	10° 25′	45° 23′
GUDGUD	11° 05′	48° 13′
GUDIN GARAS	11° 05′	43° 27′
GUDKA	9° 30′	43° 23′
GUD LOAD	10° 12′	47° 20′
GUDMAN	10° 10′	47° 09′
GUD MORORO	11° 02′	48° 20′
GUDMU	9° 43′	46° 44′
GUDOLAU	9° 06′	46° 57′
GUDUB	8° 56′	46° 35′
GUDUBI	8° 49′	45° 00′
GUDUD	9° 16′	48° 13′
GUDUNLAWI	9° 06′	47° 02′
GULANLEH	9° 47′	44° 26′
GULED HAJI	9° 20′	44° 44′
GULO	9° 10′	43° 21′
GUMAR	7° 33′	45° 13′
GUMAREH	8° 05′	45° 00′
GUMAREH	8° 16′	45° 34′
GUMARTEH	10° 07′	47° 27′
GUMBURA	9° 46′	46° 05′
GUMBUR ABESSO	10° 05′	45° 08′
GUMBURAHA BANKA ...	9° 12′	43° 56′
GUMBUR ARORH	9° 44′	46° 09′
GUMBUR AS	9° 47′	43° 30′
GUMBUR BURHISSE... ...	10° 09′	45° 55′
GUMBURIN	9° 52′	46° 00′
GUMBUR GARABWEIN ...	10° 10′	45° 45′
GUMBUR GELMAWEDO ...	8° 07′	47° 19′
GUMBUR HASSAN	10° 34′	43° 27′
GUMBUR HANGEYO ...	9° 18′	45° 41′
GUMBUR IN	9° 56′	46° 13′
GUMBUR LIBAH	9° 03′	45° 48′
GUMBUR LIBAHAYU ...	10° 08′	46° 34′
GUMBUR MADED	9° 20′	45° 52′
GUMBUR MEGAG	9° 20′	45° 50′
GUMBURO	9° 52′	46° 22′
GUMBURU	6° 55′	45° 55′

TABLE 3—*continued*

GUMEIS	8° 51′	46° 47′
GUNAD	9° 22′	46° 16′
GUN DERA	10° 30′	43° 29′
GUNDERO	8° 05′	45° 23′
GUNREH	11° 02′	48° 40′
GUNTI ADO	8° 45′	46° 34′
GUNTIGA DAMAL	9° 56′	44° 15′
GUNWEINEH	10° 03′	46° 14′
GUONDAWEIN	9° 48′	44° 54′
GURA'AN	7° 55′	44° 22′
GURA'AN	8° 43′	46° 27′
GURANJALEH	9° 54′	43° 11′
GURASAR	8° 52′	46° 22′
GURATI	7° 49′	44° 27′
GURDOMI	7° 56′	44° 22′
GURDUMAT	11° 13′	48° 22′
GUREBAR	11° 03′	48° 09′
GURED	9° 45′	47° 06′
GUREIS	9° 30′	42° 35′
GURIABALEH	10° 58′	48° 05′
GURI ABOHR	10° 08′	45° 03′
GURIASAN	9° 12′	48° 29′
GURIASAN	10° 02′	47° 15′
GURIA'UL	9° 52′	43° 14′
GURI AUR	10° 08′	45° 04′
GUR MALEH	9° 23′	48° 25′
GURUDON	11° 00′	48° 14′
GURIGEBIL	9° 00′	48° 27′
GUTAR	8° 52′	44° 58′
GUTOYIN	10° 48′	43° 06′
GUVENEH	10° 23′	46° 07′
GUYO ADEH	9° 00′	43° 20′
HABA HUMA	9° 00′	43° 15′
HABA HUMA	8° 30′	44° 06′
HABAJI	9° 50′	46° 15′
HABAL ASO	8° 20′	45° 00′
HABALA WARSENGELI	8° 03′	47° 07′
HABALEH	9° 24′	44° 08′
HABALEH	10° 18′	43° 11′
HABAL FARAGAB	10° 27′	46° 06′
HABAL ISHWALE	11° 01′	48° 20′
HABAL KAYER	8° 53′	46° 16′
HABAL RAREN	10° 11′	46° 29′
HABALO	9° 44′	45° 03′
HABALO TOMALOD	10° 09′	44° 52′
HAB ANOD	7° 01′	45° 22′
HABAS	10° 26′	42° 47′
HABASLEH	9° 22′	45° 38′
HABASWEIN	9° 10′	44° 00′
HABASWEIN (W)	10° 12′	46° 20′
HABASWEIN	8° 15′	44° 31′
HABASYOH	8° 09′	47° 27′
HABAWEIN	7° 50′	45° 25′
HABAWEINA	8° 24′	46° 07′
HABĒDLEH	9° 30′	43° 56′
HAB IYO QOLQOL	9° 04′	48° 09′
HABO AD	9° 30′	48° 17′
HABRIR	9° 07′	43° 41′
HABR SHIRREH	10° 14′	48° 33′
HABOYEDA	10° 17′	44° 09′
HABURA	8° 15′	45° 37′
HAD	10° 02′	42° 24′
HAD	10° 49′	47° 10′
HAḌAD	9° 32′	43° 56′
HAḌAḌAN	10° 30′	46° 30′
HADADENBIH	10° 07′	43° 07′
HADAFTIMO	10° 40′	48° 15′
HÀDANI	10° 30′	46° 03′
HADATA	9° 12′	48° 45′
HADED	10° 00′	48° 00′
HAḌED	11° 05′	47° 47′
HADERO	8° 07′	46° 24′
HADIGHADIG	9° 30′	44° 20′
HADKAJID	9° 48′	47° 58′
HADLA	9° 29′	46° 40′
HADODIL	9° 57′	46° 24′
HADOH	10° 59′	47° 13′
HADWANAK	9° 04′	43° 56′
HADWEIN	11° 01′	48° 31′
HADWEIN	10° 41′	43° 28′
HAFUN	10° 25′	51° 16′
HAGA GERAD	9° 12′	46° 08′
HAGAL	9° 31′	43° 57′
HAGAL	10° 16′	45° 45′
HAGAREH	10° 16′	43° 07′
HAGAREH	8° 18′	49° 06′
HAGAREH	8° 00′	47° 20′
HAGAR GELGELIMED	9° 54′	47° 05′
HAGŌGA	8° 07′	45° 21′
HAGOGA	8° 26′	46° 10′
HAGOGA	10° 52′	43° 37′
HAGOGANI	8° 25′	46° 20′
HAGOGANI	7° 03′	45° 44′
HAGOGANI	10° 10′	43° 15′
HAGOGANI ADO	7° 18′	45° 11′
HAGRAJIN	9° 06′	47° 32′
HAGR BODLEH	8° 40′	45° 30′
HAGR DABOH	8° 02′	47° 56′
HAGR DEGEDLEH	8° 23′	44° 37′
HAGRIN	9° 15′	47° 37′
HAGR SARARWEIN	7° 56′	46° 19′
HAGR WALAH	8° 15′	48° 15′
HAHE	9° 22′	44° 58′
HAHE	7° 48′	43° 40′
HAHE	8° 17′	47° 11′
HAHEYAH	8° 15′	48° 16′
HAIDAMO	9° 10′	48° 18′
HAIDANYELE	11° 06′	48° 02′
HAID DUATO	8° 35′	45° 39′
HAILE	10° 12′	45° 20′
HAIMOLEH	11° 05′	48° 36′
HAIS	11° 12′	48° 57′
HAISENIT	8° 45′	47° 08′
HAIS JIRREH	11° 00′	47° 38′
HAIRAMADLEH	10° 01′	45° 10′
HAIYEH	8° 16′	45° 37′
HAKARA	10° 10′	43° 11′
HAL	10° 09′	48° 52′
HALDAGAN	10° 48′	47° 41′
HALEINA	10° 45′	47° 13′
HALEYA	9° 34′	44° 08′
HALHALIS	8° 20′	45° 25′
HALIELO	9° 12′	46° 37′
HALIMALE	10° 14′	43° 08′
HALIN	9° 06′	48° 38′
HALLISO	9° 50′	43° 11′
HAMAMA	10° 57′	48° 45′
HAMAR	8° 15′	43° 15′
HAMARI	10° 14′	43° 15′
HAMARO	9° 48′	44° 39′
HAMARTA	9° 59′	45° 12′
HAMARTA KULANLAH	9° 52′	44° 57′
HAMAS	10° 06′	44° 50′
HAMR	9° 45′	44° 30′
HAMR KUR	9° 03′	48° 32′
HAMR KUR	7° 55′	47° 52′
HAMR LAGUHED	8° 11′	46° 50′
HAMUḌ	8° 45′	48° 44′
HAMUḌ	8° 41′	47° 23′
HAMUḌ	9° 10′	47° 22′
HAMUḌ	8° 48′	48° 47′
HAMUḌ	11° 03′	49° 07′
HAMUḌ	8° 37′	42° 26′
HANAN	10° 35′	46° 18′
HANAN	8° 42′	46° 25′
HANBAR	10° 39′	46° 20′
HANENLIH	8° 38′	48° 08′
HANFALEI	9° 33′	43° 00′
HANGALOL	9° 54′	45° 08′
HANGALOL	9° 49′	46° 36′
HANGAGARE (W)	11° 04′	43° 34′
HANGARAD	10° 02′	46° 16′
HANGEI	10° 16′	49° 03′
HANGEI	9° 07′	47° 37′
HANGERI	10° 16′	43° 16′
HANGEYO	10° 04′	43° 04′
HANGULAN	10° 41′	45° 50′
HANIG	9° 42′	46° 45′
HANJIRA	10° 02′	44° 16′
HANKOKIB	7° 32′	45° 52′
HANKOKIB	7° 50′	47° 55′
HANKUKUBLEYAL	9° 07′	46° 20′
HANLADID (W)	10° 33′	46° 09′
HANLEBI	10° 44′	45° 55′
HAN MAḌEDLEH	9° 30′	44° 01′
HAN QOḌA'	10° 41′	46° 17′
HANSOGA	9° 11′	48° 08′
HAN WOBLEH	10° 34′	46° 07′

CHAPTER IV
TOPOGRAPHY

A. Existing Topographical Maps

59. A topographical map is the simplest and most efficient basic reference for other survey work. It should be based on an accurate geodetic map (i.e. points accurately marked both on the ground and on a map of the Earth's surface as a whole).

60. Somaliland has not yet been included in the geodetic network of Africa, but some fairly accurate points have been fixed by astronomical means, and may be obtained from the Directorate of Colonial Surveys, Teddington. Unfortunately many of these points are not permanently marked on the ground, or refer to peaks and hill-tops from which temporary stone beacons have disappeared, and these points of course cannot be accepted as an accurate geodetic network.

61. The most recent astronomical fix is that of Berbera Lighthouse, made by a surveyor of the Shell Company, and given in the Gazetteer (Table 3) (10° 24′ 49″. 2 N., 44° 58′ 42″. 7 E.).

62. The existing astronomically fixed points are, however, sufficient for the making of maps on the scale of 1 : 250,000 (approximately quarter-inch to the mile), or maps on smaller scales, of limited areas in the coastal lowlands, and in sight of the Main Watershed Ranges.

63. The existing published maps are of very variable value in different areas. Some of the most satisfactory are those made by Colonel Swayne at the end of the nineteenth century, by duration of camel-march and compass between points fixed by him astronomically during his hunting trips (Swayne, 1895). Some of the most misleading maps are those of the Railway Survey, 1906, and the Boundary Surveys of the 1930's, in which narrow strips of country have been accurately surveyed and others filled in, often extremely inaccurately. With the aerial photographs and the information given in this Report, an improved series of maps could now be made.

B. Improvised Mapping

64. It has therefore been necessary to improvise a topographical map from the existing published maps and by further amateur survey to cover as much of the area as possible. Topography—popularly confused with the wider term " Survey "—has only been sketched in where better maps are lacking, for the purpose of forming a basis for the General Survey of the Protectorate and Grazing Areas.

65. In areas where there are well-mapped, visible landmarks, plane table surveys have been based on such points, e.g. Stock's Elayu-Heis plane table survey based on the N.E. boundary pillars of the international boundary with Somalia Italiana; Hunt's Golis-Guban plane table survey based on Somaliland Oil Exploration Co.'s fixed points.

66. In other areas, e.g. Hargeisa Valley, Zeila Plain, and Onkhor area (Hunt, 1939 and 1945), base lines have been measured and extended by plane tabling: in the first two cases with telescopic alidade measuring heights, and in the last by ordinary alidade, plane tabling, and heights by aneroid with a few angle checks. Such maps are tied in to existing maps as well as may be; where possible to distant astronomically fixed points, but elsewhere merely by " fitting " into existing maps.

67. In the Plateau area (e.g. the Haud and Sawl Haud mostly by Macfadyen, and much of the area south of the Main Watershed by Hunt and Viney), the maps have been amplified for the most part by motor-vehicle mileometer, compass, watch, and aneroid (though in some areas of the central Haud Macfadyen also used aerial photographs). In some cases the mileometer was replaced by the duration of camel-marches on compass bearings, and by both these means a fair degree of accuracy can be obtained by painstaking care.

68. Diurnal hourly aneroid graphs were prepared before and after each such survey, and heights corrected from these graphs. If the results were not fairly constant before and after a short survey the heights were checked again or discarded altogether. In the course of a year the heights shown by an altimeter (aneroid) at one place, have been recorded as varying as much as 470 feet, and the diurnal variation is usually 150 to 200 feet. It is believed that the heights recorded by means of aneroids during the General Survey are mostly accurate within about 50 feet, and almost certainly within 200 feet.

69. Small areas such as townships and air landing-grounds have been measured by tape and compass, or pace and compass, and sometimes extended by compass bearings. A series of such maps was included in the 1947 Annual Report of the General Survey, Illustrations XII to XXI, Townships 1 : 2,000, Stations 1 : 25,000, Environs 1 : 50,000, and Landing-Grounds 1 : 10,000. The series was not completed for the whole Protectorate, but copies of the completed maps are available for local use from the Stationery Officer, Hargeisa.

TABLE 3—*continued*

HAQAYO	9° 37′	45° 08′
HAQE OBOLEH	9° 32′	45° 08′
HAQI MALASLEH	9° 38′	45° 08′
HAQ SO'O	8° 34′	46° 03′
HARA'AYARSHI	9° 07′	47° 39′
HARAD	9° 26′	42° 55′
HARADAD	9° 31′	43° 46′
HARADINDINO	8° 13′	44° 10′
HARADLEH	9° 16′	48° 34′
HARAF	9° 33′	43° 57′
HARAGLEHE	10° 35′	46° 30′
HARALEISU	7° 43′	46° 55′
HARAQONDI	9° 59′	43° 06′
HARAR	9° 18′	42° 08′
HARAR DIGIT	7° 47′	44° 27′
HARASAN	9° 33′	43° 09′
HARAWA	9° 57′	42° 54′
HARAWA	10° 30′	50° 05′
HARAWATI	8° 24′	46° 14′
HARBAD	11° 03′	48° 26′
HARE	8° 18′	46° 40′
HARED MINDILI	10° 14′	42° 54′
HAREH	9° 20′	43° 03′
HARER HAR	9° 04′	46° 01′
HARERI DEILO	7° 02′	45° 43′
HARERI MANSO	8° 41′	48° 41′
HARERI SOLELI	7° 48′	46° 45′
HARERI TURMAK	7° 33′	46° 42′
HARFA DEI	10° 40′	46° 08′
HARFO AGABAR	7° 20′	47° 37′
HARGAAN	10° 55′	47° 10′
HARGEGR	8° 30′	47° 15′
HARGEISA	9° 33′	44° 04′
HARHARSHEH	9° 38′	48° 17′
HARIRAD	10° 22′	42° 50′
HARIS	10° 10′	48° 42′
HARISO	7° 08′	48° 27′
HARIYO	9° 47′	45° 16′
HARO	10° 22′	46° 04′
HARO	10° 24′	43° 05′
HARO ABASGUL	7° 45′	44° 30′
	8° 17′	44° 09′
HARO DIGET	7° 49′	44° 27′
HARO FAFAN	7° 30′	45° 00′
	7° 40′	44° 38′
HARO GARDUR	8° 09′	44° 45′
HARO HAGARI	7° 05′	45° 54′
	7° 33′	45°-18′
HAROREIS	9° 25′	43° 04′
HAROREISO	7° 40′	44° 40′
HAROREISOH	6° 27′	43° 30′
HAROSAN	7° 45′	45° 16′
HARSHIN	9° 00′	43° 47′
HARTI DEQ	8° 01′	47° 30′
HARTI KHOR	10° 17′	47° 40′
HARUḌ AD	10° 13′	48° 52′
HARUN	9° 51′	44° 48′
HARWEIN	9° 55′	44° 50′
HARWEIN	9° 00′	45° 07′
HARWEINA	8° 35′	46° 09′
HASADIN	9° 47′	43° 15′
HASADINLEH	10° 08′	43° 06′
HĀSASHA	10° 55′	47° 31′
HASHAU	11° 10′	47° 28′
HASKA	10° 07′	45° 18′
HASKUL	8° 34′	45° 03′
HASKUL	8° 38′	45° 10′
HASKUL	8° 57′	45° 51′
HASNAN	10° 48′	47° 16′
HASSAN GADE	6° 57′	46° 18′
HAURA TIROH	10° 57′	48° 45′
	11° 03′	48° 44′
HAWARO	11° 07′	48° 28′
HAYABLEH	8° 03′	44° 45′
HAYEH	7° 21′	45° 30′
HAYO IYO DURBAN ...	8° 34′	44° 03′
HEḌ	10° 02′	44° 43′
HEḌHEḌ	9° 32′	44° 47′
HEḌ HEḌ (W)	10° 35′	46° 17′
HEḌ HEḌ	9° 50′	47° 03′
HEḌ HEḌ (coal)	10° 33′	46° 16′
HEḌHEḌ	9° 57′	49° 00′
HEḌHEḌ	9° 12′	46° 00′
HEḌID	11° 05′	47° 20′
HEDID	11° 10′	49° 00′
HEDID	11° 04′	48° 36′
HEḌIDERA	9° 10′	48° 48′
HEDIDO	10° 59′	48° 51′
HEDIDO	10° 47′	45° 47′
HEDIGALE	9° 59′	44° 27′
HEDIGANTI	8° 58′	48° 45′
HEDINHETALE	8° 02′	43° 48′
HEDINTA	9° 39′	43° 46′
HEDKA SALID	10° 09′	45° 13′
HEḌOD (W)	9° 38′	43° 58′
HEḌO FARINJI	8° 41′	44° 14′
HEḌO HARAROLE	9° 36′	46° 50′
HEGABOH	10° 07′	44° 45′
HEG ADO	10° 33′	46° 10′
HEGAN MIDA'ANYO ...	9° 48′	46° 02′
HEGLEH	10° 35′	45° 55′
HEIGALI	7° 47′	46° 08′
HEIS	10° 53′	46° 54′
HELA	10° 49′	47° 28′
HELMA'ADO	8° 25′	47° 46′
HELMARALE	8° 40′	46° 24′
HEMAL X	10° 52′	43° 26′
HEMAL	10° 31′	43° 08′
HEMAN	11° 17′	48° 39′
HEMAN	9° 42′	48° 20′
HEMAN GAREN	10° 40′	47° 35′
HENJIR DER	9° 20′	47° 42′
HENSA	10° 52′	42° 56′
H'ENWEINA	9° 58′	44° 50′
HERE	8° 50′	45° 57′
HERIA GALO	9° 08′	45° 46′
HERIO GULO	6° 59′	45° 24′
HERIO HAGOGA	8° 14′	45° 24′
HERIYE	8° 19′	47° 49′
HERO BARKADET	9° 54′	46° 40′
HEROFARINJI	9° 07′	46° 03′
HERO GELI	9° 30′	42° 54′
HERO GOREYU	9° 01′	49° 12′
HERSI BUH	11° 07′	43° 13′
HID AIN	9° 47′	46° 17′
HIḌ GALOL	8° 49′	46° 38′
HIDID	10° 57′	47° 23′
HIDIDO	8° 35′	46° 07′
HIDIDO	8° 57′	48° 50′
HIDIGMALEH	7° 55′	44° 46′
HIGLALEH	8° 20′	43° 30′
HIGLIGAB	10° 22′	49° 00′
HIGLOLEH	8° 40′	46° 58′
HIGLU DUNKAL	8° 57′	46° 07′
HIGLU FARDOD	9° 05′	45° 00′
HIGLU ELAUSLEH	9° 30′	48° 47′
HIGLU LAS BEILEH	7° 57′	46° 53′
HIGLU MARODI	8° 15′	47° 55′
HIGLU QARQARIYEH ...	8° 48′	47° 24′
HIGLU QORDER	8° 25′	47° 00′
HĪL	9° 18′	46° 14′
HILINWAL	10° 26′	42° 45′
HILO	10° 13′	48° 40′
HILOLEH	10° 15′	43° 02′
H'IMAN QAREN	10° 40′	47° 36′
HINBIL	10° 13′	43° 19′
HINDISO	9° 48′	43° 17′
HIRAB GIRREH	10° 20′	43° 01′
HIRR	9° 51′	46° 21′
HOBAT	10° 24′	48° 58′
HOBATKABALOLEHE ...	10° 01′	46° 32′
HODAYA	11° 12′	48° 45′
HODEYO WEIN	7° 41′	45° 08′
HODMO (W)	10° 37′	46° 16′
HOḌOH	9° 12′	48° 37′
HODONLEH	10° 31′	46° 31′
HŌG	10° 02′	43° 31′
	10° 02′	43° 52′
HŌGADADER	10° 08′	43° 03′
HOGĀSHAHUN	8° 35′	45° 20′
HOG FARAS	10° 31′	43° 25′
HOGTA DIRINTA	6° 55′	45° 53′
HOHOB	10° 09′	43° 14′
HOLAL	9° 52′	50° 50′
HOL HOL	8° 57′	47° 45′
HOL HOL	10° 30′	47° 30′
HŌLQŪT	10° 05′	45° 25′
HOR ABESSO	11° 04′	48° 16′
HORBODLEH	8° 47′	44° 17′
HORDUD	11° 00′	48° 03′

TABLE 3—*continued*

HOREH	10° 13′	42° 56′
HORKAH	8° 51′	46° 15′
HORMOH	10° 33′	48° 59′
HOROHEDLEH	9° 53′	44° 02′
HORO KHALIFO	8° 49′	43° 08′
HORONEH	10° 27′	43° 01′
HORUDA	11° 01′	48° 17′
HORUFADI	8° 35′	46° 25′
HOSAWEIN	9° 34′	47° 34′
HOSULUJIF	8° 05′	45° 14′
HOSWEINA	10° 30′	43° 20′
HRABKA	10° 10′	45° 21′
HRAGR	11° 07′	48° 40′
HRAGR	9° 58′	45° 19′
HREBAN	11° 09′	47° 28′
HRIGIT	9° 37′	45° 18′
HUBERA	10° 40′	48° 32′
HUBERA	10° 31′	46° 03′
HUDEI	10° 11′	45° 05′
HUDISO	10° 02′	45° 12′
HUDELLI	9° 15′	45° 48′
HUD QA'ABLEH	10° 15′	46° 50′
HUD QAL	10° 13′	48° 48′
HUDUN	9° 09′	47° 29′
HUDUNLEH	10° 30′	46° 33′
HUFTIRO	8° 46′	46° 48′
HUGUF	9° 56′	45° 52′
HUJALEH GUREH	8° 41′	44° 33′
HULANJI	7° 58′	45° 24′
HUL GABOBE	10° 03′	45° 06′
HULHULSHAN	10° 07′	49° 00′
HULIA	11° 02′	48° 42′
HULKA	9° 22′	43° 09′
HULUL	8° 35′	46° 18′
HULUL	9° 58′	46° 41′
HULUQ	9° 42′	43° 46′
HUMBAIS	11° 17′	48° 47′
HUMBAIS	11° 08′	47° 13′
HUMBELI	10° 01′	44° 51′
HUMBUL	10° 18′	48° 52′
HUNDO	8° 58′	43° 01′
HUNDULLEH	9° 20′	44° 08′
HUNDURGAL	9° 09′	48° 32′
HUNGUFTI	8° 45′	44° 46′
HUNQOROWEINA	11° 05′	48° 41′
HUNSHALEH	8° 20′	48° 15′
HUR (W)	10° 41′	45° 56′
HUR	8° 47′	50° 22′
HURANHUR	11° 11′	48° 42′
HURANHUR	10° 06′	47° 44′
HURI YEH	7° 56′	47° 43′
HUSSEIN	10° 35′	43° 16′
HUSUS LAWI	8° 05′	47° 10′
IAH	8° 41′	49° 45′
IBADEI	9° 22′	43° 26′
IBSA	9° 48′	42° 54′
IDA ASSEYE	9° 12′	45° 58′
IDA KABEITA	10° 05′	45° 20′
IDA KARSEI	11° 02′	47° 43′
IDANKA	9° 12′	43° 56′
IDAR	9° 54′	43° 02′
IDIDEH SAMAD	9° 40′	46° 53′
IDIDIYOH	9° 20′	43° 20′
IDIDIYOH	8° 11′	44° 28′
IDIG	8° 58′	46° 20′
'IDIYA AS	8° 03′	45° 54′
IDIQ	10° 35′	46° 00′
'ID NAAS	7° 40′	45° 55′
	7° 30′	47° 10′
IDO FAITO	10° 10′	45° 00′
IDRIS	10° 34′	43° 37′
IGAKA JERER	9° 00′	43° 00′
IJARA	9° 35′	43° 38′
IJIWAJI	9° 37′	43° 32′
ILAD	10° 04′	47° 51′
ILAD	10° 25′	47° 05′
ILAHA GARDO	9° 29′	49° 02′
IL DER	8° 43′	47° 19′
IL DERA	10° 23′	43° 47′
ILGAROH	10° 32′	46° 26′
ILKAMIH	8° 05′	47° 22′
ILIG	7° 17′	45° 34′
ILIG	7° 45′	49° 49′
ILIMO	9° 45′	43° 36′
ILIMO	9° 03′	44° 20′
ILIMO	9° 04′	43° 14′
ILINTA	9° 43′	43° 27′
ILLALA DERA	9° 39′	42° 51′
ILLAMO	10° 30′	46° 48′
ILLIBAHED	9° 52′	43° 12′
ILKA DALANLEH	9° 22′	45° 43′
ILMADER	8° 10′	47° 13′
ILMA GASH	9° 18′	44° 41′
ILMAHEDO	7° 32′	45° 30′
ILMA SHANSHA 'ADE	8° 30′	46° 05′
ILOH	9° 10′	48° 52′
ILOH	9° 52′	42° 58′
IMIRH	10° 47′	45° 58′
INA BAQAL	9° 27′	43° 20′
INA DANDAN	8° 48′	46° 04′
INA ERMAN AD	8° 00′	48° 24′
INA GUHA	8° 55′	44° 15′
INA KARBOSH	9° 32′	44° 10′
INDA AD	11° 04′	48° 28′
INDAGUBI	8° 50′	47° 52′
INJIR QAILO	9° 17′	45° 45′
'INLAYAL	9° 17′	44° 15′
IRADAMEH	10° 30′	49° 22′
'IRAFED	8° 38′	45° 17′
IRDEI	7° 47′	47° 37′
IRA GAFIDA	7° 35′	45° 10′
IRAHO	10° 45′	48° 45′
'IRIRI	8° 39′	43° 18′
IRRBADKI	8° 58′	46° 18′
IRYEREH	8° 14′	44° 11′
ISHA JAMA GABAR	8° 27′	45° 46′
ISHA MADEDKA	8° 38′	45° 37′
ISHA MESENGO	9° 44′	44° 48′
ISHA OBASHA	9° 32′	44° 00′
ISHA QARAMIGA	7° 43′	46° 51′
ISSKUDARAMO	8° 42′	46° 22′
ISSKUDARH	9° 54′	44° 54′
ISSKUDON WEINEH	8° 30′	45° 20′
ISSKUSHUBAN	10° 17′	50° 14′
ISMADOHO	9° 10′	48° 49′
ISWAT	7° 56′	46° 00′
IYIH	10° 03′	43° 14′
JAF	8° 30′	46° 24′
JALEFON	9° 40′	46° 17′
JALELO	11° 10′	45° 45′
JALELO	10° 40′	46° 16′
JALELO	10° 59′	42° 57′
JALELO	8° 55′	46° 19′
JALELO	9° 13′	44° 45′
JALELO	9° 48′	44° 17′
JAMA GABAR	8° 27′	45° 46′
JAMAN	10° 38′	47° 38′
JAMIADKA MARQAHALEH	8° 52′	43° 57′
JAN'AD	10° 23′	43° 23′
JANA BATALO	9° 49′	43° 12′
JANAGABAN	9° 52′	43° 04′
JANDELA	8° 28′	48° 43′
JARA HORATO	9° 50′	43° 23′
JARATO	9° 53′	44° 43′
JAU	11° 13′	48° 47′
JAWAN	10° 29′	46° 28′
JEDUB	9° 45′	43° 21′
JEHAL	11° 02′	48° 34′
JEH'DIN JIE	8° 58′	47° 38′
JEIDER	10° 16′	44° 46′
JEKA (JIKA, CIECA)	9° 47′	42° 34′
JEKA	9° 35′	43° 10′
JEKA	9° 46′	43° 37′
JELHAD JEBIS	8° 17′	45° 06′
JENA GABAN	9° 51′	43° 05′
JERANI	10° 32′	46° 08′
JERIBAN	7° 14′	48° 57′
JERIN	9° 30′	45° 20′
JERJER	10° 10′	46° 09′
JERJERO	10° 07′	45° 18′
JIBAGANLEH	8° 04′	48° 39′
JIBAGANLEH	8° 31′	48° 37′
JIBAHA	8° 24′	48° 22′
JIBANIS	10° 37′	46° 10′
JIBUTI	11° 36′	43° 09′
JIDAHEN	10° 50′	49° 48′

JIDALI	10° 43′	47° 39′
JIDAMO	8° 50′	48° 08′
JIDAN BE'ED	9° 09′	46° 51′
JIDANBOH	9° 35′	49° 11′
JIDANBUL	9° 34′	47° 34′
JIDANBUL	8° 33′	48° 00′
JIDANDIG	9° 05′	47° 32′
JIDAN HIGLALEH	9° 20′	47° 15′
JIDAN MEGAG	9° 15′	47° 11′
JIDANSHILEH	9° 05′	47° 33′
JID ĀRO	10° 21′	45° 48′
JIDBAJEBIS	9° 09′	47° 24′
JIDBALI	8° 59′	47° 10′
JIDBANAN	8° 18′	47° 52′
JIDEH (W)	10° 34′	43° 01′
JIDFALAYAL	7° 37′	47° 03′
JIDGABAN	10° 42′	45° 52′
JIDGABANEH	9° 58′	46° 22′
JIDGODANYO	8° 59′	46° 36′
JIDIBI	9° 02′	45° 52′
JID LOAD	10° 51′	48° 32′
JIDSALAH	9° 05′	46° 46′
JIDYEL	8° 20′	48° 22′
JIE	9° 27′	43° 18′
JIEYEDAH	10° 20′	45° 03′
JIF	10° 14′	43° 21′
JIFIS	10° 09′	48° 55′
JIFO	9° 44′	43° 17′
JIFOIN	9° 44′	43° 21′
JIFO ME'EDER	9° 45′	43° 17′
JIFO URI	9° 43′	43° 25′
JIFTOH	10° 20′	44° 57′
JIGJIGA	9° 20′	42° 48′
JIKA	9° 47′	42° 34′
JILAB	8° 25′	48° 34′
JILAB	8° 55′	46° 32′
JILABLEH	8° 01′	45° 35′
JILABLEH	7° 25′	45° 11′
JILBAJEBIS	9° 09′	47° 24′
JILBEH	8° 45′	43° 35′
JIL BELI	10° 25′	44° 13′
JILBISYELEH	8° 24′	45° 48′
JILBISYELEH	7° 56′	46° 53′
JILBO	10° 57′	47° 02′
JILFALE	7° 37′	47° 03′
JILIBO	8° 25′	46° 33′
JILIBO	8° 25′	46° 42′
JILIBRAIN	10° 45′	47° 12′
JILIBSEGALEH	10° 48′	47° 20′
JILIBSUGUR	10° 49′	47° 15′
JILIN	10° 50′	47° 51′
JILUB TOBANEH	8° 14′	46° 12′
JIMBA	9° 07′	45° 17′
JINA ALI	7° 22′	46° 37′
JINABO	7° 36′	44° 55′
JINA'SENI	9° 30′	42° 40′
JINBA'ALI	9° 15′	45° 52′
JINSAMEH	10° 21′	49° 00′
JIRER	9° 09′	47° 51′
JIRGABO	8° 07′	43° 52′
JIRI	9° 48′	43° 06′
JIRI 'AUL	9° 11′	43° 32′
JIRIDLA	11° 09′	48° 49′
JIRIQALI	9° 20′	45° 56′
JIR IYO ADAD	7° 28′	46° 10′
JIRJIR	9° 34′	45° 38′
JIRJIR	11° 01′	48° 36′
JIRJIR	10° 06′	43° 02′
JIRJIR	9° 03′	48° 24′
JIRJIRADOH	10° 13′	48° 39′
JIRJIR GARGAR	10° 52′	47° 16′
JISASLEH	8° 25′	45° 48′
JÖGTADA HÖDAGA	10° 32′	46° 15′
JUFO	10° 07′	43° 00′
JUQ	9° 25′	43° 10′
JUQ	9° 13′	43° 47′
JUQMADR	9° 40′	43° 12′
JUQO	9° 40′	43° 12′
KA'AYO	9° 00′	48° 36′
KĀBADI	9° 39′	45° 01′
KABAL	10° 02′	44° 17′
KABAL	10° 19′	45° 25′
KABAL QABAD	10° 25′	42° 59′
KABASAMO	9° 27′	44° 34′
KABILE	10° 16′	44° 12′
KABOG	9° 35′	45° 09′
KABR OGADEN	8° 56′	46° 28′
KADAR	10° 02′	43° 56′
KALAB	11° 11′	48° 34′
KALABAID	7° 45′	45° 50′
KALABAIDKA	7° 42′	46° 50′
KALA BELELGU	7° 57′	47° 32′
KALAD	9° 10′	48° 08′
KAL AD (W)	10° 32′	46° 10′
KALADA'AH	9° 30′	45° 18′
KAL ADOTI	11° 04′	48° 15′
KALAGORAYO	9° 35′	46° 07′
KALAGOIYEH	9° 30′	44° 09′
KALAGOIYEH	9° 09′	44° 15′
KALAGUBET	9° 25′	49° 00′
KALA JAB	10° 35′	43° 09′
KALAJAB	10° 42′	46° 10′
KALA JEHH	8° 52′	46° 16′
KALAMAD	8° 56′	44° 20′
KALA ODAN	9° 06′	45° 50′
KALAQABAD	9° 25′	48° 29′
KALAQANSA	9° 17′	49° 00′
KALARUG	10° 38′	45° 50′
KALA RUG	9° 10′	47° 50′
KALA RUG	10° 16′	47° 10′
KAL AS	8° 51′	46° 07′
KALA SOO	9° 04′	44° 59′
KALA YA'A	8° 51′	45° 43′
KALAYU	7° 58′	47° 23′
KAL BELELEGUH	7° 59′	47° 32′
KAL BO'O	10° 01′	46° 50′
KAL DADUB	9° 42′	45° 13′
KAL DAMUO	8° 52′	48° 52′
KAL DARABLEH	10° 02′	47° 32′
KALDARE	9° 50′	46° 40′
KAL DIG	8° 28′	47° 36′
KAL DIG	9° 55′	46° 41′
KALEH	9° 53′	44° 35′
KALGARO	8° 52′	47° 57′
KALHARERI	9° 39′	46° 22′
KAL HEDID	11° 01′	48° 12′
KALHOR	9° 14′	47° 28′
KALIS	8° 24′	49° 05′
KALMA	11° 01′	48° 45′
KAL MADU	11° 07′	48° 21′
KAL MAMA'O (W)	10° 34′	46° 27′
KALMOH	8° 44′	47° 59′
KALQANSAH	9° 55′	46° 16′
KAL QASALAD	11° 04′	48° 38′
KAL QOROF	10° 12′	47° 17′
KALQUDUN	9° 06′	45° 54′
KAL SHABEL	9° 29′	43° 45′
KAL SHEIKH	10° 07′	47° 12′
KALYAHET	8° 46′	49° 12′
KAMAROYAN	8° 15′	44° 32′
	7° 57′	44° 34′
KANDALA	11° 29′	49° 52′
KARAMAN	9° 35′	47° 22′
KARBASHLEH	9° 19′	45° 40′
KARIMO	9° 36′	46° 21′
KARIN	10° 50′	45° 47′
KARIN	9° 36′	44° 28′
KARIN ADOTEH	10° 35′	48° 52′
KARIN ANAMAYAYEH	10° 42′	46° 08′
KARIN BIYOD	9° 55′	47° 17′
KARIN BOSASO	10° 58′	49° 13′
KARIN DABAILWEIN	8° 09′	47° 34′
KARIN DAMBAL (W)	10° 38′	46° 02′
KARIN DASHEH	10° 58′	47° 28′
KARIN GARAS	11° 04′	48° 20′
KARIN GEBILE	10° 00′	45° 38′
KARIN HAĎAD	10° 11′	44° 22′
KARIN HEGANEH	11° 03′	48° 38′
KARIN HIL	10° 32′	48° 20′
KARIN KUL	11° 09′	48° 29′
KARIN KULAN	10° 15′	44° 45′
KARIN MOHOR MADU	10° 32′	46° 25′
KARIN RORAMA	11° 03′	48° 20′
KARIN SHABEL	9° 29′	43° 53′
KARIN YERO	9° 08′	46° 03′
KARIREI	9° 22′	45° 01′
KARKAR	10° 20′	48° 35′
	10° 07′	49° 12′

TABLE 3—*continued*

KARMO ARBET	10° 10′	45° 12′
KELIA ADO	10° 43′	46° 06′
KELIDIYAL	10° 42′	46° 14′
KENDALI	11° 02′	48° 33′
KERAJ	11° 03′	48° 53′
KERIRE	9° 00′	43° 25′
KHAYATSAME	10° 21′	49° 00′
KHORSHARI	10° 50′	45° 53′
KHORSHE	8° 32′	45° 08′
KIDIYOD	10° 00′	43° 38′
KIDYELI	9° 25′	43° 20′
KIDYELI	9° 08′	43° 18′
KIRIT	8° 58′	46° 09′
KIRKIRI	8° 17′	45° 28′
KODA YEREH	9° 47′	44° 30′
KORALI	9° 35′	42° 48′
KORAMBAKTIS	8° 08′	47° 14′
KORANSHAH	7° 03′	45° 52′
KORANTI	10° 55′	47° 06′
KORA TUNSHE	9° 09′	47° 13′
KORATUNSHE	7° 37′	46° 49′
KORA TUNSHE	9° 34′	49° 03′
KORE	8° 14′	44° 11′
KOREH	9° 39′	43° 02′
KORONKHOR	10° 35′	46° 11′
KORONLEGED	9° 15′	45° 05′
KORONQOGIS	9° 29′	43° 46′
KUBEN	10° 12′	46° 18′
KUL	10° 04′	46° 09′
KUL	11° 03′	48° 35′
KULAL	9° 42′	47° 36′
KULALEH	9° 26′	46° 48′
KULALO	9° 46′	47° 40′
KULAL YER	9° 46′	47° 35′
KULAN	10° 18′	44° 56′
KULOH	10° 07′	46° 12′
KUMHO	11° 14′	48° 52′
KURA HANGEYE	9° 17′	45° 36′
KUR ANOD	8° 22′	48° 17′
KURGERAD	8° 12′	47° 48′
KURHEMO	9° 10′	45° 26′
KURIYALAYAL	9° 02′	46° 06′
KUR MEGAG	10° 43′	46° 05′
KUROH QARAROH	8° 12′	46° 25′
KURSA ADOH	9° 58′	46° 15′
KUR SHABELLO	8° 11′	47° 15′
KURTIMALE	8° 40′	47° 38′
KURTIMALE	9° 10′	43° 27′
KURTIMO	8° 38′	47° 37′
KURTIMO	10° 29′	48° 35′
KURTUMO	10° 12′	47° 45′
KURTUMO	9° 35′	49° 05′
KURUNBEHH	9° 49′	46° 37′
KURUS HEIS	9° 35′	46° 41′
KURYALEH	8° 41′	48° 39′
KUSEI	8° 03′	46° 17′
LA'AYIN	9° 11′	47° 48′
LABA AFLEH	9° 00′	46° 40′
LABA ARDALEH	7° 58′	47° 42′
LABADU	8° 36′	45° 12′
LABA DUQSILEH	9° 45′	47° 06′
LABAGARDEI	8° 26′	44° 00′
LABA GERI	10° 24′	44° 37′
LABAGŌRA	8° 12′	48° 12′
LABAH	10° 48′	47° 02′
LABA LIQLEH	8° 20′	48° 21′
LABA MADAHALEH	8° 32′	47° 51′
LABA NOQOD	8° 44′	44° 50′
LABA QABIDLE	11° 03′	43° 05′
LABA SEHATEI	8° 20′	44° 38′
LAFA DEBIYOD	8° 29′	45° 39′
LAFAHA	9° 17′	43° 27′
LAFAHA	8° 25′	45° 46′
LAF AHMED	9° 04′	45° 16′
LAFA MARODI	9° 27′	44° 45′
LAFARUG	10° 02′	44° 48′
LAFAWEINA	9° 10′	47° 15′
LAF DAHABA	9° 36′	42° 55′
LAF DIRINDIR	9° 25′	45° 27′
LAF DIRINDIR	9° 44′	46° 06′
LAFO	9° 56′	46° 17′
LAFO	9° 17′	43° 27′
LAFTA AMADERA	9° 20′	44° 56′
LAFTA KIDIGA	9° 08′	43° 18′
LAFTA TINKA	9° 40′	43° 46′
LAF WA'AIS	8° 33′	44° 07′
LAFWEINIH	9° 10′	47° 15′
LAG ALED	10° 40′	47° 07′
LAG AROH	8° 21′	47° 54′
LAHAN SHEHH (W)	10° 39′	46° 12′
LAHILO	10° 07′	43° 00′
LAH WALWAL	10° 32′	46° 12′
LAJIDALI	7° 35′	46° 35′
LAKABET	9° 57′	42° 27′
LAKU BOTLEH	7° 54′	44° 22′
LAKU QOTOMALE	8° 01′	44° 30′
LALIS	10° 05′	45° 10′
LALISKWE	9° 37′	43° 50′
LAMA ABDI GEDI	9° 18′	45° 31′
LAMA DEGO	8° 11′	44° 58′
LAMA LOSHAL	7° 04′	45° 36′
LAMANLOYE	9° 59′	48° 40′
LAMA QODA	8° 27′	45° 03′
LAN ARAHED	7° 39′	46° 53′
LAN BALELO	7° 11′	45° 25′
LAN BARAKO	9° 22′	42° 48′
LANDER	8° 30′	45° 10′
LANDER	9° 05′	43° 58′
LANDER	9° 14′	45° 54′
LANDERA	7° 26′	44° 22′
LAN HAID	8° 25′	45° 36′
LAN IDAD	7° 10′	47° 35′
LAN KOSHIN	8° 00′	46° 24′
LANLEH	10° 41′	43° 11′
LANLEH	8° 50′	48° 10′
LANMULAHO	8° 36′	45° 13′
LANTA ABDIGEDI	9° 25′	45° 33′
LANTA BOD	9° 01′	47° 37′
LANTA DUNDUMADA	9° 24′	45° 23′
LANTA GOREGA	9° 40′	43° 16′
LANTA ORDENKA	9° 20′	43° 38′
LAQ DEREH	10° 48′	45° 46′
LAQ DERO	8° 20′	49° 09′
LASA DAR	8° 35′	46° 52′
LASA DAWA'O	11° 11′	43° 31′
LASA DAWA'O	10° 05′	45° 00′
LAS ADEI	9° 59′	46° 39′
LASA DIBATAG	8° 30′	46° 30′
LASA JALAWADI	9° 24′	46° 12′
LAS AKANTEH	7° 55′	46° 20′
LAS ALIQAULAL	10° 47′	47° 21′
LAS ANOD	8° 28′	47° 22′
LAS ANOD	10° 02′	42° 57′
LAS ARO	9° 51′	49° 30′
LASA URDAN	9° 13′	47° 51′
LASA WELOD	8° 14′	48° 13′
LAS BAHAI	10° 37′	48° 49′
LAS BAR	11° 03′	48° 38′
LAS DAREI	9° 54′	44° 00′
LAS DAWA'O	9° 16′	48° 07′
LAS DAWA'O	8° 15′	48° 21′
LAS DAWA'O	10° 28′	49° 05′
LAS DO'OLEH	7° 48′	46° 20′
LAS DUREH	8° 15′	48° 13′
LAS DUREH	10° 02′	43° 21′
LAS DUREH	10° 11′	46° 00′
LAS DUR ELAN	10° 08′	46° 22′
LAS DOLOP	7° 41′	47° 03′
LAS ELAN	10° 15′	47° 12′
LASELAN	9° 50′	45° 59′
LAS ELBERDALE	8° 23′	47° 29′
LAS GALOL	9° 44′	47° 02′
LAS GELJIRREH	8° 58′	46° 14′
LAS GHAL	9° 53′	45° 54′
LAS HADLEH	10° 08′	45° 08′
LASHIDA	10° 42′	46° 59′
LAS HUMBALEH (W)	10° 44′	46° 17′
LAS IDLEH	10° 11′	45° 57′
LAS KHOREH	11° 09′	48° 12′
LAS MAAN	11° 14′	48° 46′
LAS MAGANLEH	8° 35′	47° 30′
LAS MAYAL	11° 12′	48° 27′
LAS MUSA (W)	10° 45′	46° 06′
LASO	9° 24′	46° 11′
LAS SUBAN	7° 56′	46° 52′
LAS WARWAR	9° 02′	48° 58′
LAS WEITEIN	9° 56′	42° 41′
LAU	10° 11′	45° 00′

TABLE 3—*continued*

LAYILIHKAL	10° 00′	43° 05′
LEBI ALAN	8° 49′	45° 41′
LEBI ASHAN	8° 40′	44° 20′
LEBI AULEH	9° 23′	45° 32′
LEBI AUSHAN	8° 59′	44° 49′
LEBI BUSLEH	8° 33′	46° 13′
LEBI DALOLEH	9° 02′	45° 24′
LEBI DERA	8° 52′	45° 12′
LEBIDUB	7° 35′	47° 00′
LEBI DUSMALEH	7° 55′	46° 52′
LEBI HAGO	9° 40′	48° 16′
LEBI HON	8° 22′	44° 00′
LEBI MUYO	9° 08′	46° 48′
LEBIN BARREH	8° 14′	48° 11′
LEBI RARE	9° 14′	45° 53′
LEBI SEGALLEH	8° 48′	44° 44′
LEG AD	8° 06′	44° 42′
LEG DERA	9° 12′	47° 51′
LEHELUH	8° 36′	48° 36′
LEHMAD	9° 39′	47° 30′
LIBAHH FUL	10° 38′	42° 54′
LIBAHH HELEI	8° 58′	44° 57′
LIBAHH HELEI	8° 40′	45° 52′
LIBAHH HELEI	10° 22′	43° 01′
LIBAHHLEYAL	8° 41′	45° 43′
LIBAHH QAUDAMAN	8° 51′	44° 28′
LIKALEH	10° 12′	42° 45′
LO	11° 07′	48° 04′
LO'ADA	10° 19′	49° 41′
	10° 05′	49° 28′
LODMOH	8° 30′	48° 38′
LO FANTO	10° 25′	48° 04′
LO FULA	10° 37′	45° 43′
LOHYOH	9° 12′	48° 25′
LOJEBIR	10° 07′	45° 27′
LO' SUBKO	9° 02′	47° 30′
LOYA	9° 38′	45° 20′
LOYA AS	11° 09′	43° 26′
LUG DAMAS	11° 08′	48° 32′
LUG DERO	9° 12′	47° 51′
LUG HAYA	10° 43′	43° 54′
LUGOYEH	7° 36′	45° 53′
LUGTA LISHA	10° 04′	46° 24′
LUGUD	9° 36′	44° 22′
LULUMA SHILIS	8° 37′	48° 07′
LULUMUH	8° 42′	48° 01′
LUQUN LAB	9° 36′	44° 35′
MAAN	11° 12′	48° 15′
MA'ARAK	10° 49′	47° 09′
MADAH	10° 59′	47° 27′
MADAHWEIN	9° 47′	46° 06′
MADALKUHAULE	9° 44′	48° 20′
MADALWEIN	9° 12′	43° 40′
MADARAHA	10° 28′	47° 36′
MADAWEIN	9° 12′	43° 41′
MADAWEIN	8° 59′	46° 25′
MADED	10° 42′	47° 03′
MADEDBUR	7° 11′	45° 25′
MADEDLEH	10° 37′	46° 09′
MADEDLEH	8° 01′	45° 27′
MADEDLEH	8° 53′	43° 47′
MADEDOH	9° 45′	46° 56′
MADIFAN	10° 39′	46° 17′
MADMOGHORREH	9° 45′	49° 19′
MADRSHON	11° 01′	48° 58′
MADYAL	7° 54′	47° 03′
MAGA'ALI	10° 21′	48° 11′
MAGA ALI	7° 53′	47° 42′
MAGAB	10° 24′	45° 15′
MAGALAYER	9° 09′	45° 59′
MAGAR	10° 17′	49° 49′
	10° 00′	49° 44′
MAGNO	10° 57′	47° 20′
MAGOLDERA	9° 25′	43° 08′
MAH	10° 37′	47° 05′
MAHAN	8° 56′	46° 55′
MAHAS	10° 41′	46° 57′
MAH QULEH	8° 45′	45° 10′
MAHATO	9° 20′	45° 59′
MAHATO	8° 20′	44° 10′
MAHUELEH	8° 25′	48° 10′
MAIDAH	10° 15′	42° 47′
MAIDASAR	9° 40′	44° 47′
MAIT	11° 01′	47° 07′
MAIT	10° 58′	47° 05′
MAIT ISLAND	11° 13′	47° 15′
MAIOYIN	8° 07′	44° 15′
MAKNIS	9° 35′	42° 45′
MALAL	10° 15′	46° 19′
MALAS	10° 17′	42° 49′
MALASLE	7° 36′	48° 03′
MALASLE	9° 38′	45° 09′
MALAWAD	8° 38′	48° 02′
MALGU	10° 06′	44° 43′
MALKADIJE	10° 34′	43° 13′
MALOG ANO	8° 10′	45° 53′
MALOL	9° 58′	45° 15′
MALU	9° 33′	43° 57′
MAMAGABAN	9° 33′	47° 05′
MANDAHO	11° 00′	43° 11′
MANDERA	9° 55′	44° 43′
MANEHOYIN	9° 08′	47° 47′
MANET	7° 26′	47° 00′
MANJA ASSEH	10° 07′	45° 08′
MANJADADLEH	7° 47′	46° 38′
MANJA MAQARSHO	10° 37′	48° 19′
MANJA YIHIN	11° 05′	49° 01′
MANNA	11° 08′	48° 26′
MAQADO (N)	10° 07′	45° 04′
MAQADO (S)	10° 06′	45° 05′
MAQFUD	8° 13′	45° 00′
MAQORAH	8° 44′	45° 07′
MARABOLE	9° 22′	44° 40′
MARAGA	10° 02′	43° 06′
MARAGMAL	8° 56′	48° 20′
MARAJABEH	8° 48′	46° 42′
MARALAYAL	10° 31′	49° 14′
MARALEH	9° 52′	42° 55′
MARALIHI	10° 22′	42° 54′
MARAQ	10° 21′	43° 18′
MARAQHOR	7° 46′	45° 30′
MARAQTUR	7° 30′	45° 35′
MARAQUROH	8° 52′	43° 52′
MARAQUROH	8° 45′	44° 57′
MARAR	9° 32′	42° 42′
MARARALEH	7° 52′	47° 07′
MARAR ALEYAL	7° 52′	47° 07′
MARAWADI	10° 45′	47° 24′
MARDA	9° 22′	42° 42′
MARDO	11° 12′	48° 54′
MAREDLEI	9° 09′	46° 35′
MAREGALE	10° 09′	43° 23′
MAREGALE	8° 22′	47° 22′
MAREGTA	10° 37′	46° 16′
MARGAFATOH	10° 20′	43° 05′
MARIN	10° 15′	47° 02′
MARKANWEINA	7° 43′	46° 34′
MARMAR GEDLEH	10° 30′	42° 46′
MARMAR HIR	10° 34′	42° 50′
MARMAROD	8° 50′	45° 40′
MARMAROD	9° 50′	46° 17′
MARODEH	7° 53′	44° 11′
MARODIJEHH	9° 37′	44° 15′
MARODILE	9° 52′	43° 56′
MARODI REB	10° 08′	48° 34′
MARODI 'UN	11° 11′	48° 27′
MAROJEH	10° 55′	48° 59′
MARORALEH	7° 57′	46° 43′
MARQANWEINA	10° 19′	46° 18′
MARQANWEINA	7° 47′	46° 31′
MARSIN	7° 36′	44° 52′
MARSO	45° 00′	10° 00′
MASAGA BUQLEH	8° 30′	46° 16′
MASAGAN	10° 25′	47° 32′
MASALAHA	9° 28′	43° 56′
MASAREH	7° 29′	45° 14′
MASH ALED	11° 02′	48° 18′
MASKAN IYO AGAR	8° 58′	46° 20′
MASLE	8° 55′	43° 45′
MASLE	9° 17′	45° 55′
MASNADA JIBRIL	9° 56′	43° 04′
MATANO	8° 53′	48° 16′
MAWN	11° 02′	48° 25′
MEDALE	10° 23′	44° 26′
MEDISHE	10° 45′	47° 35′
MEDR	9° 15′	43° 25′
MEGAG	10° 03′	48° 27′
MEGAG IDEN	8° 59′	46° 37′

TABLE 3—*continued*

MEGAG JIFA	7° 46′	45° 27′
MEGAGLAYAL	8° 30′	46° 19′
MEGAGTA	9° 35′	44° 14′
MELADEN	10° 25′	49° 51′
MELAWAD	8° 38′	48° 02′
MELISHE	10° 45′	47° 35′
MELOGO	11° 04′	47° 14′
MERALEI	8° 27′	48° 06′
MEREISANEH	7° 50′	47° 57′
MERHIL	11° 05′	47° 23′
MERIDO	9° 37′	43° 34′
MERIYE	9° 50′	45° 57′
MERKO	9° 31′	43° 09′
MERKO	9° 54′	44° 42′
MERMERSANEH	8° 12′	44° 11′
MERSIN	7° 31′	44° 53′
MERSIN GALGALLO	7° 41′	45° 00′
MESENGO	9° 38′	44° 47′
MIDA'ANYO	9° 40′	47° 40′
MIDGAT	10° 31′	46° 18′
MIDGOT	10° 44′	46° 15′
MIDO YERYERO	11° 02′	47° 58′
MIET ARARET	10° 49′	47° 11′
MILHO	11° 04′	48° 33′
MI'ILOH	9° 25′	46° 43′
MILMIL	8° 17′	43° 52′
MINDI'IROH	8° 02′	46° 47′
MINDI YER	10° 09′	48° 29′
MIREFADLI	7° 26′	46° 50′
MIREFARATAG	6° 59′	45° 56′
MIREG	10° 22′	46° 18′
MIRGATUH	9° 48′	46° 19′
MISILEH	10° 13′	43° 02′
MISINGU	9° 38′	44° 37′
MISIR	8° 52′	46° 12′
MISIRTA	8° 52′	48° 11′
MODAHA MARODI	7° 43′	46° 54′
MODAHA MARODI (Bur)	8° 16′	48° 28′
MODAHA WEIN	9° 47′	46° 06′
MOGHOR	10° 39′	46° 35′
MOGHOR	10° 50′	48° 25′
MOGHOR	9° 33′	45° 03′
MOGHORAHED	11° 00′	48° 25′
MOGHOR LIBAHH	10° 58′	48° 24′
MOHOLEN	7° 53′	44° 05′
MOHOLIN	8° 02′	44° 46′
MOHORO HOSTE	10° 31′	46° 20′
MOHORO SARE	10° 24′	46° 18′
MOQLO TAGTAG	8° 43′	46° 14′
MOQOR	9° 50′	46° 18′
MOYALEH	8° 28′	44° 19′
MOYALEHO	9° 28′	42° 42′
MUDIN	10° 20′	46° 32′
MUDUG	6° 40′	47° 30′
MUGAH	9° 17′	48° 03′
MUG'U	9° 09′	47° 47′
MUGUR	8° 58′	48° 22′
MUGWEINEH	8° 37′	47° 38′
MUKURTOH	8° 56′	48° 23′
MULA ALI	9° 12′	43° 02′
MULE DERE	10° 09′	47° 14′
MURA ARAB	10° 42′	46° 17′
MURAIADA (Yeroweh)	9° 24′	45° 43′
MURAIADA	8° 47′	46° 11′
MUR DABER	10° 28′	46° 21′
MUR DAHA	10° 07′	45° 03′
MUR DAHAN	10° 36′	46° 23′
MUR DALOLEH	10° 26′	46° 16′
MUR DAQ	9° 29′	46° 45′
MUR DE'EREH	10° 50′	47° 09′
MUR DERA	8° 24′	48° 59′
MUR FANI	10° 40′	46° 17′
MUR FARAH	10° 35′	46° 19′
MUR GONI	10° 38′	46° 16′
MURIAAD	10° 32′	46° 23′
MUR JIRJIR	10° 37′	46° 16′
MURKULEH	10° 59′	47° 30′
MUSA HASSAN	9° 49′	43° 23′
MUYO	9° 05′	46° 48′
NAAS	10° 11′	44° 02′
NABADID	9° 41′	43° 27′
NADI	10° 03′	43° 14′
NAGOH 'ASESE	9° 29′	43° 19′
NAHAS	9° 17′	48° 25′
NALEYA DIRDIR	8° 26′	46° 05′
NAQAL	9° 37′	44° 15′
NASA HABLOD	9° 36′	44° 06′
NASIYE	8° 43′	45° 03′
NASIYE	8° 43′	45° 36′
NEGADWEINA	8° 12′	45° 57′
NEGAD WEINEH	9° 10′	47° 36′
NEGEGR	9° 49′	45° 43′
NEF KUISHEH	8° 17′	47° 41′
NIDAQ	10° 44′	49° 08′
NIDIQ	9° 58′	46° 12′
NOBIR	10° 15′	50° 45′
NOGAL	8° 55′	47° 30′
NOGAL GABAN	8° 33′	49° 09′
NOLEYEH QODALEH	8° 35′	45° 45′
NOLEYAL	8° 28′	45° 48′
NUGUL	9° 09′	48° 15′
NUNSASO	9° 48′	46° 21′
OBALE	9° 27′	44° 06′
OBDOH	10° 47′	47° 18′
OBOL	9° 52′	45° 08′
OBOL	10° 10′	42° 54′
OBOL	8° 06′	47° 06′
OBOL	10° 28′	46° 08′
OBOL DERA	9° 32′	45° 08′
OBOLEHE	10° 13′	43° 15′
OBOL GUBATE	9° 36′	45° 16′
OBOL JIFTA	9° 32′	44° 00′
OBOL JIRIN	11° 06′	48° 26′
ODAH	9° 49′	43° 17′
ODAJIT	9° 37′	43° 32′
ODALE	8° 23′	46° 25′
ODAN	9° 43′	43° 54′
ODANLEH	8° 20′	46° 02′
ODAGOYEH	8° 29′	47° 25′
ODAWA DIRI	11° 05′	43° 31′
ODAWEINA	9° 11′	45° 50′
ODLA	10° 13′	46° 19′
ODLA	11° 17′	48° 43′
ODWEINA	9° 24′	45° 04′
OFEIN SARE	10° 47′	49° 39′
OK	9° 59′	46° 11′
OK	8° 55′	46° 37′
OKADALEH	7° 48′	45° 15′
OLESAN	9° 02′	46° 12′
OMEN	10° 06′	45° 07′
OMR AJI	8° 24′	46° 19′
OMR KELI	7° 13′	47° 17′
'ONAQABAT	9° 54′	42° 41′
ONKHOR (W)	10° 46′	46° 13′
ONKHOR	10° 39′	48° 46′
'ONQORO	10° 21′	48° 42′
ORDAN	9° 06′	44° 11′
ORGIYO	9° 05′	47° 25′
OSOLIH	10° 30′	43° 45′
QA'AB	10° 13′	46° 57′
QA'AB	9° 22′	46° 11′
QABALE	7° 26′	45° 35′
QABALLEH	10° 10′	42° 48′
QABEH	8° 07′	47° 22′
QABILALEH	8° 29′	46° 13′
QABORALE	9° 58′	46° 05′
QABRI	8° 02′	45° 50′
QABRI BAHAR	10° 19′	43° 48′
QABRI BAYA	9° 08′	43° 08′
QABRI DAHAREH	6° 45′	44° 17′
QABRI GUROD	8° 52′	45° 24′
QABRI HULUL	8° 36′	46° 17′
QABRI MA'ALIN	9° 26′	43° 16′
QABRI MAH	9° 23′	45° 33′
QABRI NUNNO	9° 38′	43° 08′
QABRI SAMANEH	9° 25′	46° 44′
QABRI UGHAZ	9° 56′	43° 04′
QABR ODWEINA	7° 27′	46° 39′
QABROWEINA	6° 55′	47° 00′
QABRURWEIN	7° 42′	46° 38′
QABUR	10° 13′	42° 38′
QADAU	9° 30′	43° 30′
QADON HADLEI	7° 04′	45° 21′
QADONLEH	8° 35′	44° 05′

QAḌON MADOBA	7° 30′	46° 40′
QADON MADU	9° 22′	46° 10′
QADWEIN	9° 38′	46° 14′
QAIDR	9° 08′	43° 22′
QAIDR ADO	7° 33′	45° 18′
QAIDR ADO	8° 32′	44° 00′
QAIDR BOLEH	8° 37′	45° 33′
QAIDR GOBLEH	8° 55′	43° 30′
QAIDR HAGOG	8° 15′	48° 09′
QAIDR JEHH	7° 58′	45° 52′
QAIDR KHALIFO	8° 16′	44° 08′
QAIDR KIDILE	8° 14′	44° 05′
QAIDR URKURUS	8° 30′	46° 23′
QAIDR WALASAQO	8° 30′	48° 24′
QAILEH DERE	9° 48′	44° 22′
QAILOWEINA	8° 37′	45° 38′
QALALAN	7° 54′	46° 57′
QALANQAL	8° 30′	44° 07′
QALANQAL	10° 18′	50 °02′
QALANQAL	8° 16′	46° 09′
QALANQAL	9° 47′	49° 19′
QALI AU NUR	9° 20′	43° 17′
QALI ELBASA	9° 23′	43° 13′
QALINDERA	9° 04′	46° 25′
QALIYOH	9° 20′	43° 16′
QALO ATO	7° 54′	46° 53′
QALO ATO	9° 50′	45° 00′
QALO ATO	9° 07′	47° 10′
QAL QORILE	9° 15′	44° 04′
QALWO	10° 02′	48° 52′
QAMADIN	9° 27′	46° 10′
QANDADLEH	9° 00′	45° 45′
QANSAH	9° 31′	44° 51′
QANSAH AU YAHIA	8° 41′	44° 15′
QAOLO	9° 02′	48° 17′
QARADAG	9° 29′	46° 53′
QARADUG	8° 25′	44° 10′
QARAJILE	10° 16′	48° 45′
QARAMIGA (Isha)	7° 43′	46° 51′
QARAR	10° 38′	47° 47′
QARARO	8° 52′	46° 10′
QARARO	10° 05′	43° 02′
QARARO YER	7° 50′	45° 55′
QARARO WEIN	7° 40′	46° 38′
QARBOSH	8° 15′	44° 30′
QARBUTEYE	7° 56′	48° 00′
QARI	10° 00′	43° 00′
QARI	10° 28′	47° 25′
QARIDA	9° 15′	43° 00′
	8° 20′	43° 30′
QAROLASLEH	7° 50′	45° 54′
QARONWEINEH	8° 35′	49° 31′
QARQOR	10° 21′	46° 13′
QARQOR	8° 47′	49° 30′
QARSODI	8° 13′	44° 54′
QARWANEH	10° 23′	42° 47′
QARWARABA	9° 15′	44° 04′
QASAD	10° 18′	43° 13′
QASIR	10° 55′	48° 50′
QATIROH	10° 17′	48° 44′
QAULO	8° 54′	48° 17′
QAWK	10° 08′	46° 07′
QEIDARO	8° 32′	45° 20′
QEIDR HAYEH	7° 21′	45° 30′
QOBOROSH	9° 36′	43° 18′
QOD	10° 01′	44° 57′
QOḌA'	9° 08′	45° 00′
QOḌA'	9° 59′	48° 32′
QOḌ AD	8° 40′	50 °03′
QOḌA' DALAN	8° 14′	46° 10′
QOḌA' DERO	8° 37′	46° 06′
QOḌA' DERO	8° 40′	47° 32′
QOḌA DODIYED	8° 53′	47° 28′
QOḌA' GA'AB	8° 44′	45° 08′
QOḌA FIDANEH	8° 21′	46° 52′
QOḌA HANDULLEH	8° 46′	46° 04′
QOḌANYO	9° 07′	46° 35′
QOḌA' QOIYAN	7° 56′	46° 20′
QOḌA RAMALEH	8° 30′	45° 00′
QOḌA' RAMALEH	9° 06′	43° 47′
QOḌA SAFAR	8° 50′	45° 58′
QOḌA' TAGTAG	9° 22′	45° 39′
QOḌA' WEINE	8° 45′	43° 54′
QOḌMIS	7° 55′	46° 17′
QODMO	9° 33′	49° 55′
QOFLEH	10° 30′	46° 10′
QOFLUL	9° 52′	42° 26′
QOL	9° 32′	48° 27′
QOL AD	8° 40′	43° 40′
QOLADE	9° 10′	44° 12′
QOLAL	8° 53′	44° 23′
QOLAL	6° 30′	48° 45′
QOLAL	9° 39′	44° 37′
QOLAL	9° 17′	45° 29′
QOL'AN	10° 33′	43° 08′
QOL BIDAR	8° 56′	43° 25′
QOL DA'AREH	8° 40′	44° 22′
QOL FAḌANFAD	8° 33′	47° 23′
QOL GODOREI	9° 03′	45° 32′
QOL HAYABLEH	9° 09′	45° 26′
QOLKA	9° 42′	43° 26′
QOLKAWEIN	9° 22′	43° 55′
QOL MADOBA	8° 40′	43° 55′
QOL MADOBE	8° 38′	46° 11′
QOL MASLE	9° 07′	45° 21′
QOL MIDGAN	9° 04′	45° 20′
QOLQOL	10° 12′	43° 10′
QOLQOL DER	10° 04′	42° 57′
QOL SARIN	9° 55′	46° 18′
QOQANI	9° 26′	47° 10′
QOQOB	9° 13′	44° 25′
QORA'AD	9° 47′	44° 39′
QORAHH	8° 07′	45° 21′
QORFLEH	9° 10′	47° 49′
QORGAB	9° 56′	43° 12′
QORIALE	9° 03′	46° 02′
QORIALE	9° 19′	47° 00′
QORIALE	7° 35′	45° 20′
QORIALE	7° 52′	46° 29′
QORIALE	9° 33′	44° 31′
QORIALE	9° 46′	46° 16′
QORIAWEIN	8° 57′	46° 17′
QORI DER	9° 08′	46° 41′
QORIJAB	10° 17′	43° 04′
QORIKUJAB	8° 32′	48° 23′
QORILUGUD	8° 32′	46° 13′
QORIRIT	8° 00′	48° 07′
QORI TAGTAG	8° 39′	46° 13′
QOROF	10° 44′	48° 25′
QOROF	7° 04′	46° 27′
QORURUHLE	9° 15′	45° 53′
QORURUHLE	8° 27′	45° 02′
QOS	8° 27′	44° 31′
QOSUL	9° 18′	45° 00′
QOTAMADA	9° 07′	43° 11′
QOTOMOH	9° 07′	43° 11′
QOTON	10° 35′	50° 28′
QOTON	10° 27′	43° 11′
QOTON DABO	9° 17′	44° 37′
QOTON MADU	9° 22′	46° 10′
QOTON QADADI	10° 30′	43° 14′
QOTONWEIN	9° 04′	44° 27′
QOTUMALE	7° 42′	45° 22′
QOYAN	9° 45′	43° 24′
QULAN	10° 05′	43° 02′
QURUHSAMEH	7° 18′	45° 31′
QURUROHLEHE	8° 27′	45° 02′
QUTAR	8° 52′	44° 58′
RABA AD	9° 32′	48° 22′
RABABLEH	8° 17′	48° 18′
RABASO	8° 28′	44° 25′
RABKA	10° 10′	45° 21′
RABSH (Mait Is.)	11° 13′	47° 15′
RADYEREH	8° 34′	46° 04′
RAFAQ	10° 23′	43° 14′
RAGABADI	10° 12′	42° 51′
RAGR (HRAGR)	9° 58′	45° 19′
RAGR (HRAGR)	11° 07′	48° 40′
RAGUDA	10° 43′	46° 37′
RAIN	10° 46′	48° 48′
RAKU	9° 57′	42° 23′
RAMALEH	8° 08′	46° 57′
RAMALEH	8° 37′	46° 00′
RANGAHA	11° 08′	48° 46′
RANBAD	9° 17′	43° 27′
RAQAS	10° 46′	47° 00′
RAQDA HERSI HAMAKŌ	8° 13′	45° 02′
RAQO	10° 25′	45° 55′

TABLE 3—*continued*

RAS GELWETEN	11° 07′	47° 55′
RAT	10° 45′	48° 31′
REBAN	11° 09′	47° 28′
REDALEH	10° 14′	43° 02′
REIDAP ARDAH	8° 35′	45° 55′
REIDAP ARDALEH	8° 51′	44° 22′
REIDAP AROS	8° 46′	44° 23′
REIDAP DERA	8° 37′	45° 25′
REIDAP DINI	8° 40′	46° 08′
REIDAP DO'	8° 06′	45° 13′
REIDAP DUB	9° 08′	46° 03′
REIDAP EBED	8° 59′	44° 55′
REIDAP EDEB	8° 37′	45° 09′
REIDAP GAGAB	8° 19′	44° 22′
REIDAP GELEH	8° 32′	44° 53′
REIDAP GUN	8° 31′	44° 36′
REIDAP GUN	7° 50′	44° 37′
REIDAP HARAGO	8° 08′	45° 15′
REIDAP HARE	8° 25′	45° 09′
REIDAPHUN	8° 25′	47° 43′
REIDAP KATUMI	8° 39′	45° 04′
REIDAP KHORSHE	8° 32′	45° 09′
REIDAPLEH	8° 25′	44° 16′
REIDAP MOQOREH	8° 48′	45° 06′
REIDAP ODBALEH	8° 30′	45° 10′
REIDAP QAN	7° 42′	45° 02′
REIDAP QAN	7° 51′	45° 50′
REIDAP QORAN	9° 16′	45° 37′
RENWEINA	8° 00′	46° 00′
RERENLI	11° 10′	43° 16′
RIGIT	9° 37′	45° 18′
RIGOIN	10° 30′	47° 54′
RIHDOHAN	8° 02′	48° 35′
RIJIMO	9° 53′	46° 35′
RINJI	7° 50′	46° 46′
RIYADABIH	8° 51′	46° 00′
RIYAHED	8° 26′	45° 37′
RIYAKADEH	10° 24′	43° 27′
ROHH	7° 13′	47° 26′
ROHALEI	10° 34′	43° 18′
ROR	10° 16′	46° 55′
RUKAH	9° 17′	43° 26′
RUKEISA	9° 55′	42° 50′
RUKOH	9° 22′	43° 09′
RUGE	10° 55′	47° 15′
RUKUN GUBLEH	10° 34′	46° 11′
RUNDUD	7° 48′	45° 48′
RUQI	9° 58′	43° 26′
RUQUNBALEH	8° 40′	46° 06′
SAAD DIN	11° 26′	43° 27′
SAAMADEGO	8° 30′	46° 22′
SABA'AD	9° 45′	44° 59′
SABE	11° 05′	48° 22′
SABEN AD	10° 25′	47° 35′
SADDEHH GED	10° 43′	46° 11′
SADDEHH GED	8° 48′	48° 36′
SADDEHH GED	9° 03′	46° 30′
SAHADER	8° 04′	47° 08′
SAHA GEBAGEBA	8° 40′	47° 40′
SAHEL (Berbera)	10° 26′	45° 02′
SAHO	10° 36′	46° 01′
SAILAN	10° 52′	47° 00′
SAILKOD	8° 09′	46° 47′
SAIN	10° 48′	42° 55′
SAKARO SHARERH	10° 05′	45° 18′
SAKARO YURYURIN	9° 55′	47° 19′
SĀLA DIGOLEH	9° 17′	45° 38′
SĀLA ERAGO	7° 51′	47° 08′
SĀLA GALOLEH	8° 34′	46° 31′
SĀLA GUB	10° 34′	42° 47′
SALAHALEI	9° 50′	43° 07′
SALAH' INLEH	8° 15′	46° 32′
SALAHLEH	8° 21′	48° 32′
SALAI	10° 12′	44° 19′
SALA IBRAN	9° 13′	45° 56′
SALALMAH	8° 03′	47° 29′
SALALMAH	8° 06′	48° 08′
SALAN	10° 46′	42° 53′
SALANYERA	9° 50′	43° 28′
SALAWEL	10° 02′	45° 08′
SALDIGEH	10° 32′	45° 57′
SALITA DER	7° 59′	47° 37′
SALMAHA GURA'AN	8° 43′	46° 27′
SALMAIT	8° 47′	48° 38′
SALMEGOREH	8° 59′	47° 16′
SALMOH	8° 49′	46° 29′
SAMAD TAGAN	9° 45′	46° 55′
SAMADU	9° 45′	46° 56′
SAMAK	7° 45′	48° 00′
SAMALA	8° 49′	46° 52′
SAMATER WARABA	10° 20′	43° 04′
SAMALAYAL	8° 47′	46° 52′
SAMESDER	9° 52′	49° 07′
SAMOYIN	7° 11′	45° 17′
SAMOYIN	7° 53′	45° 00′
SANAG	7° 33′	47° 52′
SANDERA	11° 21′	43° 16′
SAN GURMO	7° 45′	47° 58′
SANKA BARISKA	10° 19′	45° 38′
SANKA DORE	10° 36′	43° 26′
SANKA HODEIGA	10° 02′	45° 05′
SANWEINI (W)	10° 36′	46° 29′
SANYANJOG	9° 22′	46° 10′
SANYERA	9° 01′	45° 39′
SAQIAD	8° 40′	46° 30′
SARA HAN (W)	10° 39′	46° 11′
SARAJ	11° 09′	48° 36′
SARAR	9° 25′	46° 18′
SARE	9° 54′	47° 36′
SAREH	11° 04′	43° 34′
SARERTA HUBNOLA	9° 45′	44° 51′
SARIN	9° 54′	46° 17′
SARIREH	8° 36′	48° 06′
SARMAN	8° 14′	47° 16′
SARMANDERGO	8° 23′	46° 25′
SARMANGAJO	8° 22′	46° 40′
SARMANTUKEH	8° 18′	46° 28′
SATAWA	9° 59′	43° 54′
SATAWA WEINEH	9° 59′	43° 06′
SATILAU	9° 42′	42° 36′
SATILEH	9° 46′	43° 22′
SAU	9° 55′	43° 10′
SAUKAILOH	9° 55′	43° 07′
SAWER	10° 37′	42° 56′
SAWLAL (ASAS)	10° 06′	47° 38′
SAWL BAREH	10° 04′	47° 34′
SAWL DAGAN	8° 37′	48° 06′
SAWL GERIO	10° 16′	47° 20′
SAWL GORIJAB	8° 52′	46° 39′
SAWL HUDQALEH	9° 35′	47° 39′
SAWL JOGTO	8° 26′	46° 20′
SAWL QUDUN	8° 38′	48° 06′
SAWL REB	10° 10′	48° 36′
SAWL SENIT	8° 41′	47° 02′
SAWL WEIN	9° 15′	46° 19′
SAWNAYAL	9° 47′	48° 27′
SEBAWANAK	10° 33′	44° 09′
SEF HABAL	7° 04′	45° 44′
SEGIG	9° 54′	44° 55′
SEHAL AFWEINE	9° 14′	45° 15′
SEHET	10° 46′	47° 22′
SEILA BAN	9° 15′	43° 54′
SELEI	10° 12′	44° 20′
SELID	11° 08′	48° 31′
SENAG	10° 19′	45° 45′
SENAG	7° 33′	47° 52′
SENER GOT	9° 08′	47° 13′
SENID	11° 00′	47° 27′
SERAH JERIN	9° 59′	45° 18′
SHABEL	9° 59′	48° 46′
SHABELAHA	9° 47′	42° 47′
SHABEL DULA	9° 11′	45° 45′
SHABELLI	9° 08′	44° 21′
SHABELLI	10° 34′	42° 42′
SHABELLI	9° 37′	43° 36′
SHABELLO	10° 43′	45° 53′
SHABELLO	8° 39′	48° 22′
SHABELLO	9° 47′	42° 47′
SHADIROH	9° 27′	43° 00′
SHAFGOI	8° 50′	46° 06′
SHAKAB	10° 03′	43° 21′
SHALAU	10° 46′	46° 43′
SHANGALEH	8° 17′	46° 20′
SHANISMOD	9° 10′	43° 42′

TABLE 3—*continued*

SHEFAWEIN	10° 34′	46° 02′
SHEIKH	9° 56′	45° 12′
SHEIKH	10° 28′	43° 04′
SHEIKH ABDAL	9° 56′	44° 40′
SHEIKH MOMEN	8° 56′	43° 30′
SHEIKH SHIDALEHE	10° 25′	47° 12′
SHEKHALATO	7° 52′	45° 11′
SHELANEH	10° 08′	46° 48′
SHELA URO	8° 57′	46° 25′
SHERIF	9° 31′	43° 49′
SHESHEHO	10° 02′	46° 26′
SHIBIQO	9° 22′	43° 46′
SHIBIQ-SHIBIQ	11° 15′	48° 25′
SHID	10° 35′	47° 22′
SHIDAN	11° 02′	47° 51′
SHIDALAHA	10° 10′	47° 36′
SHILAHA	9° 57′	45° 16′
SHILALEH	10° 00′	48° 40′
SHILASA	8° 22′	44° 03′
SHILASKA	8° 13′	46° 25′
SHILEMADU	9° 00′	47° 44′
SHILEMADU	10° 45′	47° 13′
SHILEMALE	9° 38′	44° 40′
SHILGORAHED	8° 31′	46° 30′
SHILINWEIN	8° 38′	45° 07′
SHILOLEH	8° 37′	46° 40′
SHIMBIR ALI	8° 45′	44° 37′
SHIMBIRALI	8° 05′	45° 21′
SHIMBIR ALI	8° 58′	43° 02′
SHIMBIR ALI	9° 07′	47° 29′
SHIMBIR BERIS	9° 10′	46° 08′
SHIMBIR BERIS	10° 45′	47° 15′
SHIMIS	10° 43′	48° 16′
SHINI	10° 47′	47° 14′
SHIR GORAHAID	8° 30′	46° 30′
SHIRWA LAGUBANEH	9° 50′	43° 20′
SHISHA	9° 59′	44° 15′
SHULULOH	8° 40′	46° 22′
SIBAKTI	9° 32′	45° 40′
SIBAYU	9° 57′	48° 08′
SIBSOR	11° 15′	48° 42′
SIDIB	9° 10′	48° 16′
SIDIB	11° 03′	48° 52′
SIENI	10° 13′	44° 51′
SIG	9° 47′	44° 42′
SIGA ADR	8° 48′	45° 32′
SIGABO	9° 57′	43° 35′
SIGA DER	9° 08′	47° 39′
SIGIB	10° 14′	43° 19′
SIGODEN	8° 30′	44° 10′
SIGO DER	8° 59′	47° 24′
SIHAULEH	8° 45′	47° 01′
SILIL	10° 59′	43° 26′
SIMUDI	10° 05′	43° 30′
SINARO	9° 03′	46° 46′
SINOJIF	10° 09′	46° 20′
SINOJIF	9° 06′	45° 48′
SINOJIF	8° 33′	48° 58′
SIN SAGAR	10° 53′	43° 33′
SIRADLI	10° 18′	47° 03′
SIRGU	9° 57′	46° 01′
SIRRO	7° 18′	45° 21′
SIYARA	10° 34′	45° 17′
SOBAGUB	9° 58′	46° 17′
SODAH	8° 57′	44° 11′
SOLEI SARAN	11° 08′	48° 51′
SOLEI YELE	6° 55′	45° 35′
SOMADU	10° 38′	42° 46′
SOMAWAYA	10° 25′	46° 28′
SUBANKA	11° 04′	48° 34′
SUBAYO	11° 01′	47° 32′
SUBERA	10° 29′	46° 06′
SUBER IDLEH	8° 33′	47° 45′
SUBULAHA	9° 25′	43° 09′
SUBUL BADOD	9° 30′	43° 05′
SUBUL HANFALEI	9° 34′	43° 01′
SUBUL NIRIQ	9° 32′	43° 06′
SUBUL ODLEH	9° 28′	43° 08′
SUBULOH	9° 30′	45° 07′
SUFDERA	9° 59′	47° 13′
SUFURWEINEH	9° 19′	47° 40′
SUGALEH	9° 50′	46° 43′
SUGBOH	10° 06′	47° 33′
SUGSADE	9° 57′	45° 24′
SUGSUG	9° 45′	43° 10′
SUGSUG DARED	9° 07′	43° 47′
SUGSUG GUBATO	8° 50′	43° 30′
SUGUMAHA	8° 18′	44° 18′
SUGUN DADSAN	8° 20′	44° 18′
SUGUN GALOL	8° 16′	44° 22′
SUMADUH	9° 56′	46° 57′
SUNKULUH	8° 32′	48° 15′
SUNTALEH	7° 54′	45° 47′
SUR	10° 37′	47° 22′
	9° 55′	47° 15′
SURAD	9° 37′	43° 08′
SURADLEH	9° 25′	43° 20′
SURADLEH	9° 09′	47° 36′
SURADLEH	9° 35′	44° 36′
SUREH	11° 11′	47° 32′
SURIA INA BAIR	8° 14′	46° 45′
SURIA MALABLEH	10° 21′	45° 07′
SURIA QANSA	9° 20′	45° 34′
SURMANO	11° 12′	48° 38′
SURUD	10° 44′	47° 10′
SURUDLEH	9° 23′	43° 20′
SURULU	8° 38′	48° 07′
SURUT	10° 32′	43° 16′
TABA'	10° 46′	47° 14′
TABAH TABAH	9° 07′	46° 17′
TABSIMO	10° 18′	46° 38′
TAGALWAK	10° 25′	45° 43′
TAHAR (top)	10° 25′	46° 28′
TAIGERE	9° 07′	46° 44′
TALABA YER	9° 32′	44° 39′
TALABUR	8° 35′	46° 08′
TALADERA	8° 37′	46° 23′
TALATUGO	8° 59′	47° 07′
TALATUGO	8° 37′	47° 58′
TALA'USA	8° 07′	46° 38′
TALEH	9° 09′	48° 25′
TALOLEH	7° 39′	45° 10′
TALOLOHO	10° 20′	46° 04′
TALOYIN	9° 20′	46° 00′
TAQUSHA (W)	11° 21′	43° 24′
TAQUSHE	8° 32′	45° 46′
TAR	10° 35′	45° 45′
TARANEH	10° 07′	44° 07′
TAR GUDUD	8° 22′	44° 19′
TAULANEH	8° 58′	45° 49′
TAULANEYAL	8° 59′	45° 48′
TAWADER	10° 47′	47° 07′
TAWN	9° 24′	44° 07′
TAYAG	10° 19′	44° 24′
TAYAG	8° 06′	49° 18′
TEGIMALEH	9° 05′	44° 00′
TEISA	9° 34′	43° 45′
TIFAFLEH	8° 35′	47° 16′
TIG	9° 46′	46° 22′
TILGED	11° 02′	47° 48′
TIMAGEDEFLEH	10° 13′	44° 55′
TIMIR	8° 54′	48° 48′
TIMIRE ASSEH	10° 24′	46° 31′
TIRA ASO	7° 06′	47° 37′
TIRARE	7° 02′	45° 22′
TISJIEH	10° 53′	49° 26′
TODOBA HERALEH	10° 28′	46° 14′
TODOBA KARIMOD	9° 58′	43° 24′
TOLUH	8° 56′	48° 04′
TOMO	7° 00′	45° 37′
TOMO	7° 49′	46° 33′
TON	9° 24′	44° 07′
TON ARGEG	7° 52′	46° 38′
TON MAIDO	7° 50′	46° 38′
TON RUGUNBALI	7° 47′	46° 38′
TUB	9° 32′	48° 35′
TUBAN	8° 06′	45° 36′
TUB WAAD	9° 40′	42° 52′
TUGABEYE	8° 55′	48° 16′
TUG ADAD	10° 27′	46° 25′
TUG DOFAR (W)	9° 40′	44° 01′
TUG EDIDI	9° 39′	43° 18′
TUG ERER	9° 28′	42° 45′
TUG GARAS	8° 16′	47° 57′
TUG HAREH	9° 05′	42° 58′
TUG IDID	9° 27′	43° 27′
TUGUKUBALANTA	9° 50′	43° 17′
TUG OMAN	10° 02′	45° 05′

TABLE 3—*continued*

TUG OMANEH	8° 25′	47° 38′
TUG YER	8° 15′	45° 37′
TUKALA	9° 00′	43° 36′
TUKALEH	9° 44′	42° 42′
TUKAYEL	8° 07′	45° 22′
TUKERAK	9° 53′	46° 25′
TUKERAK	8° 32′	47° 19′
TUKUB	9° 05′	46° 33′
TULI	9° 47′	43° 29′
TULI AGAGTA	9° 48′	43° 18′
TULO DIBIJO	10° 03′	45° 19′
TULO DIBIJO	10° 03′	44° 57′
TULUB	10° 09′	43° 12′
TUNBUR	8° 15′	44° 05′
TUR	11° 01′	47° 57′
TUR	9° 02′	44° 48′
TUR	9° 41′	48° 27′
TUR AD	9° 50′	43° 13′
TURAHA	9° 55′	45° 09′
TURANOD	8° 19′	46° 32′
TUR ANOD	8° 58′	47° 28′
TURANOD	9° 35′	43° 22′
TURAR	9° 22′	46° 50′
	9° 22′	46° 34′
TUR BE'ED	8° 22′	44° 25′
TUR DER	8° 50′	46° 01′
TUR DIBI	9° 30′	45° 03′
TUR DIBIYOH	8° 53′	46° 03′
TUR GODHED	8° 30′	48° 21′
TUR GOL	8° 59′	46° 58′
TUR 'INLEH	9° 08′	46° 22′
TUR 'INLEH	9° 56′	46° 24′
TURJE' IHDIMED	9° 02′	44° 48′
TURKA AYU	8° 49′	48° 37′
TURKI	10° 09′	43° 52′
TUR MIDGAN	9° 03′	45° 49′
TUR QAILO	9° 32′	42° 50′
TURSUBUKH	8° 52′	47° 27′
TURTA GASHAMALEI	9° 57′	45° 05′
TURUS	8° 37′	46° 14′
TUR WAAD	9° 40′	42° 52′
TUR WAREN	7° 55′	46° 00′
TUYO	9° 12′	44° 52′

UBALEI	9° 03′	47° 54′
UGHAZ ABDILLEH	10° 33′	43° 10′
UKRA	11° 00′	47° 31′
ULAMADOBEYEH	8° 32′	46° 10′
ULA'ULIH	10° 08′	42° 56′
UN	8° 45′	48° 52′
'UN	10° 28′	47° 42′
UNA AS IDOFAITO (W)	10° 09′	45° 00′
UNA AS IDOFAITO (E)	10° 09′	45° 01′
UNKAH	11° 06′	48° 28′
UNKUDLEH	8° 23′	48° 15′
UNUN	8° 52′	48° 05′
UNUNLEH	9° 10′	45° 50′
UNUNUF	9° 38′	44° 42′
URUR	9° 10′	45° 50′
URUR	9° 58′	46° 44′
URUR ALHET	10° 35′	49° 40′
URUR KARKAR	10° 18′	49° 25′
URWEIN	10° 41′	46° 30′
USBALEH	10° 05′	44° 40′
USBALEH	11° 02′	48° 54′
USBUR	9° 09′	43° 52′
USJIFO	9° 10′	47° 17′
USJIFO	9° 15′	48° 42′
USULIH	10° 25′	43° 42′

VULYA	11° 03′	48° 45′

WABO	9° 00′	49° 10′
WABO ADO	8° 20′	44° 40′
WABO ADO	9° 20′	46° 35′
WAB QORAH	9° 06′	43° 22′
WAB QUROH	8° 53′	43° 57′
WABWANAG	10° 20′	43° 07′
WAD	8° 52′	46° 56′
WADABA	10° 02′	45° 02′
WADA ABARED	9° 18′	43° 11′
WADA BERIS	9° 13′	43° 47′
	8° 13′	43° 33′
WADA DARAWISH	9° 15′	43° 45′
WADA DIBIQ	9° 21′	43° 28′
WADA ERDI	7° 55′	47° 22′
WADA FARAWEINA	9° 21′	43° 40′
WADA FARINJI	9° 17′	43° 43′
	9° 21′	42° 48′
WADA GODKA	9° 32′	43° 27′
WADA GOREGA	8° 55′	44° 15′
	8° 16′	44° 09′
	9° 06′	43° 53′
WADA GUMARED	8° 17′	43° 52′
WADA HASSAN	8° 52′	45° 07′
WADA JI'E	9° 27′	43° 18′
WADA JIR	9° 32′	43° 22′
WADAL	8° 29′	48° 16′
WADAMAD	10° 59′	47° 45′
WADAMAGO	8° 54′	46° 17′
WADA MAKAHIL	9° 22′	43° 36′
WADAMIYO	10° 33′	50° 37′
WADAN	9° 39′	45° 23′
WADANEH	8° 02′	44° 51′
WADA SADIQALEH	9° 34′	43° 23′
WADAYA	10° 43′	47° 18′
WADERIH	8° 34′	47° 13′
WADI	9° 15′	43° 15′
WADI DOWI	10° 34′	46° 19′
WADKA	10° 05′	45° 27′
WADNA	9° 37′	43° 54′
WADOLOHO	10° 59′	48° 10′
WAF DUG	6° 30′	45° 58′
WAFIL	9° 06′	43° 57′
WAGR	10° 01′	45° 26′
WAHARA RER ESA	8° 45′	44° 26′
WAHARO	9° 37′	47° 37′
WAHEN	10° 20′	44° 30′
WAJALE	9° 37′	43° 17′
WALALGO	9° 52′	43° 16′
WALAMUGEH	9° 07′	47° 50′
WALIDHOR	9° 23′	43° 27′
WALIGI	11° 01′	47° 37′
WALKA	9° 30′	42° 55′
WALWAL	7° 04′	45° 25′
WANAKSAN	7° 42′	46° 46′
WANBARTA	10° 07′	43° 07′
WANDERER	10° 09′	45° 12′
WAN HANDUFLEH	7° 27′	45° 09′
WANI	8° 33′	47° 48′
WAN LA SI (W)	10° 29′	46° 08′
WANOLEH	10° 06′	43° 03′
WAQDERIA	11° 06′	47° 45′
WARAB	7° 23′	47° 20′
WARABA JIR	9° 22′	43° 21′
WARABA KAJE	8° 12′	47° 21′
WARABA KARINTA	9° 30′	45° 51′
WARABA KUFE	9° 49′	47° 11′
WARABA KUR	8° 47′	46° 56′
WARABAGOT	9° 35′	43° 46′
WARABALEH	10° 13′	43° 03′
WARABALEI	9° 20′	46° 40′
WARABALEI	9° 24′	48° 31′
WARABALE	8° 47′	45° 08′
WARABALE	9° 35′	43° 47′
WARABALE	11° 18′	43° 18′
WARABALI	8° 05′	47° 25′
WARABA QOD	9° 11′	43° 41′
WARABA QUTUR	9° 27′	45° 05′
WARABA SALAN	9° 37′	44° 04′
WARABA URSHE	8° 33′	46° 15′
WARABEYE	8° 55′	45° 51′
WARABILE	11° 17′	43° 18′
WARABILE	8° 50′	45° 25′
WARABOD	11° 14′	43° 26′
WAR AD	9° 56′	48° 44′
WARA ITA	9° 54′	43° 16′
WARAK ARALEH	10° 03′	46° 24′
WARANSARE	10° 28′	46° 13′
WARANWEIS	10° 10′	43° 56′
WARARIK	10° 40′	46° 50′
WAR'AS	7° 21′	45° 38′
WARBID	11° 10′	48° 50′
WARDER	6° 59′	45° 21′
WAREN	9° 03′	43° 47′
WARIDAD	9° 18′	46° 16′

TABLE 3—*continued*

WARMA ADEYE	8° 50′	45° 52′	YABAL	10° 23′	43° 04′
WARMA GANGAN	7° 45′	43° 27′	YABAYIL	9° 02′	48° 51′
WAR MAKALAT	9° 55′	46° 05′	YADIN	9° 17′	43° 18′
WAROH	10° 45′	47° 10′	YA'E	9° 26′	43° 24′
WAROH	9° 54′	48° 35′	YAFR	11° 00′	48° 20′
WARSAMA HAD	9° 37′	44° 34′	YAGURI	8° 44′	46° 57′
WARWAR	11° 08′	48° 30′	YAHEL	8° 30′	47° 08′
WAYE	10° 00′	49° 00′	YAHEL (Well)	8° 34′	47° 03′
WEDEL	8° 28′	48° 15′	YAHEMA	9° 14′	48° 40′
WEILALEH	10° 13′	42° 47′	YAKA	9° 13′	49° 03′
WEILAWANAJI	9° 52′	42° 37′	YAMEIS	6° 48′	47° 25′
WEILOSOR	11° 00′	49° 46′	YAMISLEH	7° 53′	46° 33′
WEILUGAHED	8° 22′	47° 30′	YANQARA	10° 15′	46° 50′
WEITEN	8° 18′	48° 35′	YEGALLO	7° 06′	46° 25′
WELO	9° 28′	48° 59′	YEGALLO	8° 07′	46° 36′
WERAR	10° 16′	43° 14′	YEIS (W)	10° 14′	46° 12′
WERAR	9° 44′	44° 43′	YEIS (Ford)	10° 14′	46° 19′
WERARA	10° 02′	44° 55′	YEROWEH	9° 25′	45° 43′
WESHA AD	10° 49′	43° 25′	YIBELKEN	10° 20′	43° 13′
WEYAHA	10° 21′	46° 16′	YO'ALEH	8° 32′	43° 51′
WILGO	9° 37′	44° 54′	YO'ALEH	8° 19′	45° 45′
WIREG	9° 55′	46° 55′	YOGA	9° 08′	45° 35′
WIREG	7° 46′	45° 07′	YONDER	8° 12′	45° 35′
WIRIR	9° 28′	46° 12′	YOOB AROS	8° 23′	45° 51′
WISIL	9° 34′	45° 27′	YOOB BUR	8° 22′	45° 54′
WIYILI SEHATO	8° 50′	46° 01′	YO'OBJEDAL	8° 09′	47° 11′
WOBLEH	10° 16′	43° 16′	YO'OBYABOH	8° 30′	45° 33′
WOGR	10° 01′	45° 26′	YUFLEH	10° 22′	47° 12′
WOH	8° 27′	48° 21′	YUOBBOLO	8° 15′	45° 54′
WOMBERA AD	10° 25′	45° 22′	YU'UB	10° 36′	47° 09′
WOQDANBOLOH	10° 23′	44° 32′	YO'YUB	6° 57′	48° 14′
WOQDERIA	11° 07′	47° 48′			
WÜDWÜD	8° 27′	46° 38′	ZEILA	11° 21′	43° 29′

D. Roads and Mileages

79. In view of the wide areas covered by the Survey, both in surveying and in patrolling the observer posts, it was necessary to know the mileages of roads for the calculation of petrol supplies and programmes of travel. These mileages have been revised (from the 1945 Annual Report, General Survey) and are given in detail to the nearest mile in Table 4.

80. Illustration 9 (in pocket) shows the roads referred to in Table 4 with the names of corners and road junctions. The mileage lists of Table 4 have been divided into patrols based on Burao, and the patrols are marked on this map (illus. 9) as a general guide to the use of the Table.

81. (*Table* 4.)

TABLE 4

TABLE OF ROAD MILEAGES
SOMALILAND PROTECTORATE AND GRAZING AREAS

The following mileages, given to the nearest mile, are based on speedometer records kept from 1939 to 1950 and are believed to be fair average records. The mileages in brackets have not been confirmed by General Survey. Vehicles should be tested over measured distances with constant tyre pressure for checking mileages. The slightest variation in diameter of a revolving tyre affects mileages considerably.

Mileages between places are inserted between the place names. The first column is a running total of these mileages from Burao, the nodal centre of the area, from which the Protectorate and Grazing Areas have been divided into patrols.

In 1945 these mileages were adopted officially. It is hoped that the figures will assist in the control of fuel consumption, and in the just payment of hired vehicles. It should be remembered that the shortest routes, sometimes published as official mileages, have not necessarily been kept in repair, and are in fact often mere tracks made by private drivers themselves.

One day's march with burden camels is two half-marches (Nusgur or ambo), of 12½ miles each, and 5 hours duration at an average speed of 2½ m.p.h. Each camel carries 320 lb. in two half-loads of 160 lb. each. In fact, few Europeans average more than 20 miles a day with a mean of about 240 lb. of assorted kit, except in the case of definite transport columns. Seven camel loads of 320 lb. each are exactly a ton.

TABLE 4—*continued*

ABBREVIATIONS

LG	Landing Ground	C/S.	Coffee Shop.
IP	Illalo Post	X.	Road Junctions.
PP	Police Post	Y.	
B	International Boundary ...	T.	

I. WEST PATROL					**Diversions**	
Burao	0					
	14					
Lanta Dunduma T	14	.....	Lanta Dunduma T	0		
				17		
			El Huma	17		
				12		
			Odweina	29		
				8		
			Hahe	37		
				9		
			Doboweina	46		
				5		
			Guled Haji	51		
				34		
			Bedr Wanak	85		
	11					
Gorei L.G.	25					
	19					
Wada Elan	44	.....	Wada Elan	0		
				(19)		
			Odweina	(19)		
	11					
Go'o C/S	55					
	8					
Daldawan	63					
	15					
Adadleh T 1945	78	.....	Adadleh T 1945	0		
				4		
			Adadleh P.P.	4		
	16					
Karin T	94	.....	Karin T	0		
				76		
			Berbera	(76)		
	6					
Bedr Wanak	100					
	27					
Hargeisa (Secretariat)	127	.....	Hargeisa	0		
				48		
			Dawa Ali B	48		
				29		
			Sigoden X	77		
				22		
			Awareh	99		
				135		
			Warder	234		
			Dawa Ali B	0		
				82		
			Wajaleh B	(82)		
			Hargeisa (Secretariat)	0		
				27		
			Bedr Wanak P.P.	27		

TABLE 4—*continued*

WEST PATROL—*continued*				Diversions	
				6 Karin T	33
				8 Dubato Tug	41
				10 Daar buduq P.P.	51
				3 Tug Argan Cairn	54
				5 Marqo Y	59
				7 Sheikh Abdal T	66
				7 Lafarug W.	73
				1 Lafarug E.	74
				1 & 3 T-roads to Hudiso	77
				2 Hamas C/S	79
				6 Daragodleh C/S	85
				5 Habalo Tomalo	90
				15 Gumburaha	105
				3 Berbera Gate	108
				1 Berbera D.C. Office	109
				Sheikh Abdal	0
				3 Mandera Gaol	3
				Hudiso T	0
				10 Henweina C/S	10
36 Ijara	163	.....	Ijara		0
				9 Gebile	9
11 Nabadid Y	174	.....	Nabadid Y		0
				12 Wajaleh B	12
				41 Jigjiga	(53)
				Wajaleh B	0
				3 Garbahadleh	3
				14 Au Barreh Y	17
				6 Guria Aul	23
				7 Borama	30
13 Dilla	187				

TABLE 4—*continued*

WEST PATROL—*continued*			Diversions	
18				
BORAMA	205			
31				
Bawn	236	.....	Bawn	0
			16	
			Dobo C/S	16
			15	
			Hoswein C/S	31
			7	
			Agasur, top	38
			15	
			Geriso	53
			12	
			Weishad	(65)
			7	
			Hemal	(72)
			8	
			Silil	80
39				
Abdal Qadr	275			
11				
Jideh	286			
45				
Silil...	331			
26 ...				
ZEILA	357	.....	Zeila	0
			30	
			Jibuti	(30)
			Zeila	0
			153	
			Borama	153
			78	
			Hargeisa	231
			127	
			Burao	358
26				
Afas	(383)			
45				
Sebawanak	(428)			
13				
El Sheikh	(441)			
18				
Bulhar	(459)			
48				
BERBERA	(507)	.....	Berbera	0
			7	
			Dubar Springs	7
25				
Bihendula (Manja Asseh) ...	532			
6				
Wada Salid	538	.....	Wada Salid	0
			11	
			Dagah Shabel	11
4				
Lalis	542			
5				
Hudiso	547	.....	Hudiso	0
			33	
			Lafarug	33

TABLE 4 —*continued*

WEST PATROL—*continued*			Diversions	
10				
SHEIKH PP	557	.....	Sheikh PP...	0
			Govt. H. Sheikh	1
4				
Tug Crossing	561			
2				
Dubur Y (new road)	563			
1				
Dubur Tug	564			
2				
Dohe Dariyo	566			
2				
H. Rabi (Charcoal)	568			
3				
Galole C/S	571			
11				
Qoita splash (End Hills) ...	582			
11				
Moska N. (old road)	593			
2				
Sibitka (Green Corner)	595			
2				
Burao (D.C. Office)	597	.....	Sheikh	0
			5	
			Dubur T	5
			7	
			Dot Summit	12
			4	
			Agbaba Spinney	16
			3	
			Dih Ad crossing	19
			8	
			Go'o yer C/S	27
			12	
			G'oo Wein C/S	39
			72	
			Hargeisa	111

II. SOUTH PATROL			Diversions	
BURAO	0	.....	Burao	0
			42	
			Eik	42
			21	
			Burao Kibir	63
48				
Warabeye C/S	48	.....	Warabeye C/S	0
6			10	
Siga Adr	54		Nasiye C/S	10
10			6	
Burao Kibir	64		Libahhleyal	16
			13	
			Dogoshe	29
			6	
			Sibitka (Boundary)	35
			13	
			Yoobyaboh C/S	48
			7	
			Q. Boleh Corner	55
			2	
			Qaidr Boleh	57

TABLE 4—*continued*

SOUTH PATROL—*continued*			Diversions	
15				
Yoobyaboh B	79	.....	Yoobyaboh B	0
			5	
			Duruksi B	5
			32	
			Redapkhatumi B	37
			12	
			Gudubi	49
			44	
			Odweina	93
			43	
			Burao	136
			Yoobyaboh B	0
			30	
			Balleh Dig B	30
			28	
			Bohotleh B	58
			48	
			Darkengenyo B	106
29				
Hagoga	108	.....	Hagoga (Gashamada)	0
			47	
			Daror	47
			45	
43			Sigoden T (Gashamada) ...	92
Danot	151			
42				
Warder	193	.....	Warder	0
			90	
			Shilave	90
			90	
			Beletwein	180
			70	
			Bulo Berti...	250
			142	
			Mogadishu	392
			76	
			Merca	468
			64	
			Brava	532
			100	
			Pangani Ferry	632
			120	
			Leboi	752
			119	
			Garisa	871
			227	
91			Nairobi	1098
Gurati	(284)			
44				
Awareh	328			
22				
Sigoden X	350			
29				
Dawa Ali B	379	.....	Dawa Ali B	0
			61	
			Redap khatumi B	61
48				
Hargeisa	427			
127				
Burao	554			

TABLE 4—*continued*

III. ERIGAVO PATROL			Diversions		
BURAO	0				
20					
Ber IP	20				
22					
Dulmadoba T	42	.....	Dulmadoba T		0
			26		
			Waridad		26
			40		
			Ban Ade Y		66
			8		
			Adad Kulaleh		74
18					
Kirit	60				
21					
Ainabo	81				
9					
Gora Waraba Y	90	.....	(To Las Anod: Nogal Patrol)		
10					
Badwein	100				
4					
Fara Yeryer Y	104	.....	(To Hudun: Nogal Patrol)		
23					
Ban Ade Y	127	.....	(To Waridad)		
8					
Adad Kulaleh	135				
5					
Qaradag Town	140	.....	Qaradag		0
			60		
			Hudun		60
35					
Gal Edleh T	175	.....	(To Berbera: North Patrol)		
6					
El Afwein	181				
11					
Kal Sheikh	192				
6					
Moledera	198				
12					
Kalarug Top	210				
29					
ERIGAVO	239	.....	Erigavo		0
			12		
			Rukhunleh		12
			3		
			Dayaha		15
			15		
			Roadhead, 1930–45		30
			1½ days		
			HEIS		
			Erigavo		0
			8		
			Bidr Boqr		(8)
			3		
			Daloh Camp		11
			2		
			Daloh N.E.		13
11					
Medishe Y	250	.....	Medishe Y		0
			13		
			Medishe Garden		13

TABLE 4—*continued*

ERIGAVO PATROL—*continued*			Diversions		
15					
Badea 'A	265				
21					
Qabda	286				
8					
Fara Megag	294	.....	Fara Megag Y		0
			30		
			Bihen		30
			8		
			Hubera		38
			3 days		
			LAS KHOREH		
24					
El Buh	318				
24					
Buran LG	342	.....	Buran LG...		0
			7		
			Durujeh Y		(7)
8					
Buran IP	350	.....	Buran IP		0
			1		
			Buran Well		1
			19		
			Kaldayer Y		(20)
			4		
			Hobat		(24)
			11		
			Hormo		(35)
			19		
			Barritir		(54)
			11		
			Sugli Roadhead		(65)
			2 days		
			Elayu		
			Buran IP		0
			1		
			Buran Well		1
			23		
			Kaldayer Y		24
			10		
			Lasa Dawao Ft.		34
			12		
			El Dofar LG		46
			21		
			Yelaho Y		67
			15		
			Karin Bosaso		82
			20		
			Bosaso (Bendr Kasim)		102
10					
Durujeh Y	360				
21					
Boharo Middle	381				
8					
Dahar Y	389	.....	Dahar Y		0
			2		
			Dahar Balleh		2

TABLE 4—*continued*

ERIGAVO PATROL—*continued*			Diversions	
21				
Armo T	410	.....	Armo T	0
			7	
			Welo Y	7
			3	
			Welo IP	10
			10	
			Gardo	20
			Welo Y	0
			20	
			Ismadoho X	20
			16	
			Las Warwar	36
			Ismadoho X	0
			25	
			Halin	25
			Ismadoho X	0
27			40	
Qol Y	437	.....	Qol Y	(40)
31				
Balleh Maroleh	468			
28				
Ilad	496			
15				
Be'ed Galo	511			
16 ...				
Dabdera	527			
24				
ERIGAVO	551			
159				
Ainabo	710			
80				
Burao	790			

IV. NOGAL PATROL			Diversions	
BURAO	0			
20				
Ber IP	20			
22				
Dulmadoba T	42			
18				
Kirit Fort	60			
3				
Kirit Y	63	.....	Kirit Y	0
			5	
			Qararo	5
			26	
			Ayaleh	31
			11	
			Omr Aji	42
			7	
			Aridaf LG	49
			2	
			Bohotleh IP	51
			2	
			Bohotleh B	53
			48	
			Darkengenyo B	101

TABLE 4—*continued*

NOGAL PATROL—*continued*				Diversions		
7						
Gabo (Wadamago)	70					
11						
Ainabo	81	.....	Ainabo			0
			29			
			Horufadi			29
			25			
			Wüdwüd			54
			(26)			
			Bohotleh			(80)
			Wüdwüd			0
			28			
			Balleh Ad			28
			19			
			Darkengenyo			47
6						
El Dab	87					
3						
Gorawaraba Y	90	.....	(To Erigavo: Erigavo Patrol)			
34						
Yaguri Tug	124					
38						
Las Anod	162	.....	Las Anod			0
			32			
			Digele Y			32
			12			
			Shimbirale			44
			8			
			Hudun			52
			Digele Y			0
			19			
			Holhol			19
			Shimbirale			0
			5			
			Orgiyo			5
			7			
			Hudun			12
			Shimbirale			0
			19			
			Holhol			19
			58			
			Sarire Y			77
			21			
			Bihen IP			98
			9			
			Geroweh			107
			Las Anod			0
			94			
			Bihen			94
			Sarire Y			0
			15			
			Tala Tuggu			15
			12			
			Bohol Warabe			27
			16			
			Gambade			43
			21			
			Las Anod ...			64

TABLE 4—*continued*

NOGAL PATROL—*continued*			Diversions		
48					
Darkeingenyo B	210				
13					
Domo IP	223	.....	Do'mo		0
			77		
			Galadi		77
91					
Goririt T	314	.....	Goririt T		0
			125		
			Galkayu		125
			83		
			Galadi		208
			75		
			Warder		283
12					
Donkukoq IP	326				
17					
Rabableh	343				
17					
Bihen IP	360				
35					
Salmait IP	395				
20					
Gebider T	415	.....	Gebider T...		0
			7		
			Halin		7
5					
E. Taleh Y	420	.....	E. Taleh Y		0
			6		
			W. Taleh Y		(6)
11					
Taleh	431				
16					
W. Taleh Y	447				
47					
Holhol	494				
27					
Hudun	521				
56					
Fara Yeryer Y	577	.....	(Erigavo Patrol)		
13					
Gora-Waraba Y	590				
9					
Ainabo	599				
81					
BURAO	680				

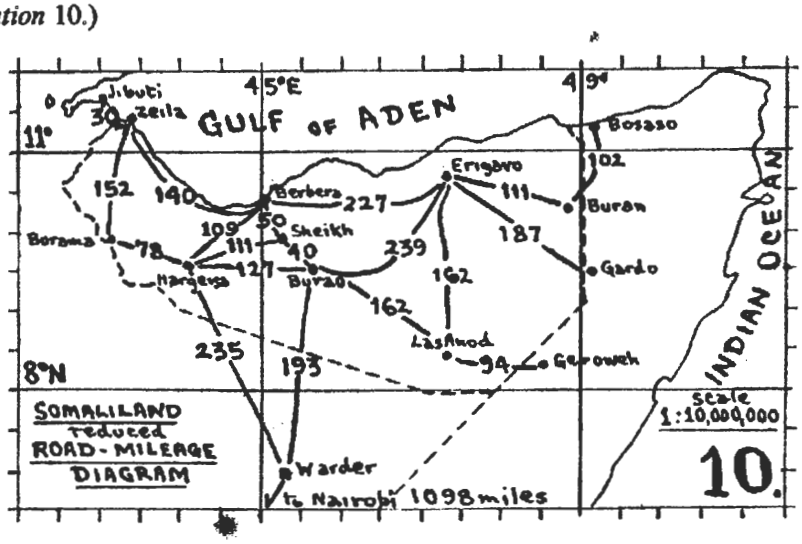
V. NORTHERN PATROL			Diversions		
BURAO	0				
24					
El Dera	24	.....	El Dera		0
			18		
			Meriye Roadhead		(18)
			½ day		
			Huguf		
			1 day		
			Hagal		

TABLE 4—*continued*

NORTHERN PATROL—*continued*			Diversions	
39				
Elal Roadhead	63	.....	Elal Roadhead	0
			1 day	
			Dur Elan	
			3 days	
			Onkhor	
BURAO	0			
90				
BERBERA	90			
10				
Biyo Gora	(100)			
8				
Magab	(108)			
16				
Biyo Dader	(124)	.....	Biyo Dader	0
			12	
			Bihen Gaha	(12)
24			13	
Hagal	(148)	.....	Hagal	(25)
18				
Las Dureh...	(166)			
25				
Dur Elan	(191)	.....	Dur Elan	0
			1 day	
			Elal Roadhead	
			63	
			BURAO	
25				
Las Ade	(216)			
36				
Gal Edleh T	(252)			
7				
El Afwein	259			
58				
ERIGAVO	317	.....	ERIGAVO	0
			227	
			BERBERA	(227)

82. A diagram on the scale 1 : 3,000,000 was given in the Annual Report, 1945 (illus. xiv), and has been enlarged by the Public Works Department for their use. It has now been corrected up to the end of 1950, and reduced to 1 : 10,000,000 for this Report (illus. 10) to show only the main route mileages.

83. (*Illustration* 10.)



84. Great care has been taken in the compilation of mileages, which were measured by mileometers checked over measured distances, and with constant tyre pressure and diameter. The short cuts made by drivers, and variations in road routes made from time to time during repair or improvement work, ensure, however, that few mileage records will remain constant in open country. The correction of the enlarged diagram printed by the Public Works Department is recommended, according to Table 4 above.

85. In the course of measuring roads a good deal of reconnaissance mapping, both topographical and of a general nature, was carried out.

86. Camel tracks in the Plateau area and in the Haud where there are few hills, are often better than the main roads over much of their length, if they are not too much used by motor transport.

87. In spite of the popular statement that modern transport can go anywhere (in the Somaliland Protectorate), there are in fact a number of very definite barriers to motor vehicles.

These may be divided into:—

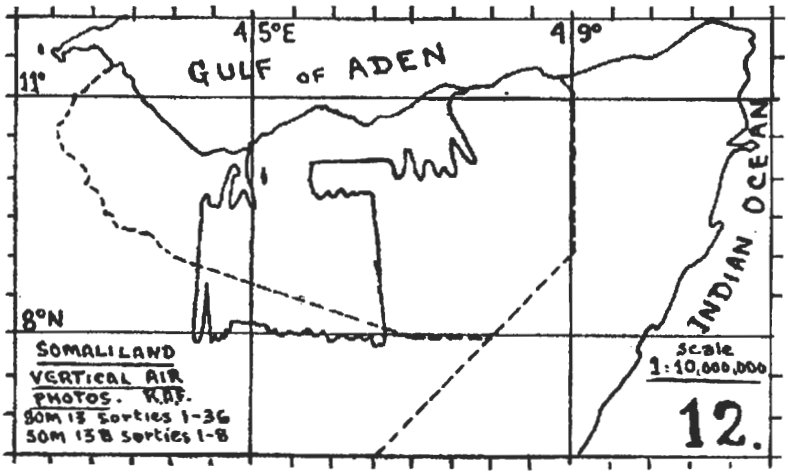
(i) Barriers which could be made passable by ordinary labour and tools and supervision.

(ii) Barriers which must remain impassable unless expensive engineering works are carried out.

Some of the latter include cliffs and narrow gorges impassable to camels and even to donkeys. Barriers to a determined man are very few and can usually be circumvented by a detour of a mile or so.

E. Air Photography

88. (*Illustration* 12.)



89. Illustration 12 shows the area already covered by the R.A.F. with vertical air photos.

This, with lacunae, covers approximately the areas:—

(i) Coast of the Gulf of Aden to 10° 00′ N. by 45° 30′ E. to 47° 30′ E.
(ii) 10° 00′ N. to 8° 00′ N. by 44° 30′ E. to 46° 00′ E.
(iii) Coast line of Gulf of Aden to 10° 00′ N. by 45° 00′ E. to 45° 30′ E.

The first two, known as R.A.F. Air Survey SOM 13, and the third as R.A.F. Air Survey SOM 13B, were flown at an average height of 20,000 feet, and photographed with focal length 6 in. There are unfortunate gaps in the mountainous areas of the Main Watershed. Three sets of these photographs have been transferred at the completion of the General Survey to the Director of Agriculture and Veterinary Services (D.A.V.S.).

90. The whole country was also covered by U.S.A.S. Trimetrogon air photographs, the average vertical scale of which is 1 : 40,000. A nearly complete set of these photographs of the Protectorate was also handed over to the D.A.V.S. in 1951.

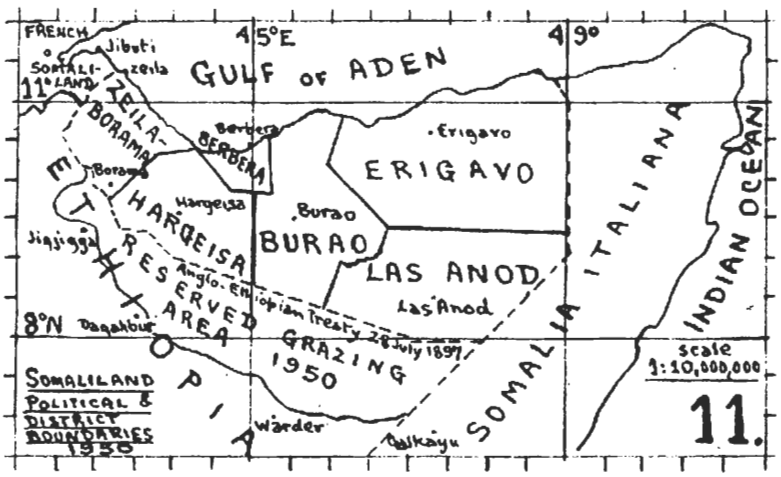
91. The Trimetrogon photographs were obtained by the General Survey in November 1946, and the R.A.F. photographs in 1947 and 1948, and were therefore too late to be of use in all areas covered by the Survey. Details of drainage of the central Haud were, however, obtained for some areas from these photographs by Dr. Macfadyen, who by their study also first discovered the existence of " Vegetation Arcs " (Macfadyen, 1950).

92. In 1948 a ground survey party of the R.E.'s fixed some control points for use with the R.A.F. airphotos in map-making. The maps have not yet been made as far as is known, but it is hoped that they will be completed by the Directorate of Colonial Surveys soon, together with maps of the areas of the Protectorate not yet photographed.

93. Much can be learnt from the interpretation of air photographs, and maps can be made more quickly by means of such photography than by any other method (if there is sufficient trained staff available). It is essential, however, that the area should also be covered on the ground especially for the purpose of fixing control points, identifying peaks and other landmarks from the ground, finding water, passable routes, and, of course, all available information for the plotting of which the topographical map is produced, including place names.

F. Political Boundaries

94. (*Illustration* 11.)



95. Illustration 12 shows the existing District and International Boundaries in 1950. The Burao and Erigavo Districts were altered and the Nogal (Las Anod) District defined in 1944. This was supposed to have been done for administrative convenience, but the somewhat crooked boundary between the Burao and Nogal districts suggests that it was intended to make the Las Anod-Nogal District an entirely Dolbahanta Tribal District, irrespective of administrative convenience.

CHAPTER V

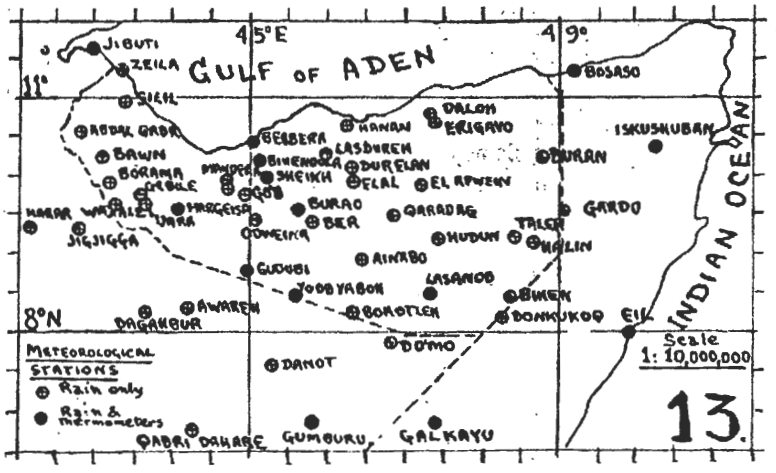
METEOROLOGY

A. Method of Recording

96. Whilst data concerning many sciences can be collected at any time, it is essential that meteorological recording should be continuous over as wide an area and for as long a time as possible. The same applies to the collection of data concerning tribal movements (see Chapter IX). Observations posts were therefore set up to cover as much of the country as possible.

97. At first it had been hoped that existing Government posts and licensed coffee shops could be used, and that officers of other departments could supervise many of the posts. In fact the whole administration of the country was in a state of flux, and it was found necessary to man and patrol independent posts, to ensure that the work was properly supervised, the observers rationed and paid regularly, and that records reached Survey Headquarters.

98. (*Illustration* 13.)



99. About 50 posts were set up during the course of the Survey, of which 20 were maintained for the whole seven years, January 1944 to December 1950, or longer. Of the 25 posts manned by General Survey observers, 15 completed the seven years observation (some from October 1943, to early January 1951).

100. Some General Survey posts were closed down during the Survey for reasons of economy or difficulty of supervision. Some of the R.A.F. stations and police and Illalo posts were also closed down, and the official closure of licensed coffee-shops resulted in difficulty in maintaining some posts. The R.A.F. posts at Berbera and Hargeisa were collecting very much more data than has been attempted by the General Survey. These two posts were maintained by the R.A.F. for most of the seven-years Survey.

101. The Senior Met. Officer, R.A.F., Aden, and the Chief Met. Officer, Nairobi (at first R.A.F.), were most helpful with advice, records and some equipment. The most valuable series of records obtainable in the area, however, is that maintained since 1900 by the Observatory staff at Jibuti in French Somaliland. Records there are kept partly by trained Somali observers. The Chef du Service Météorologique has been most helpful and the Observatory is to be congratulated on having maintained continuous records for so long despite world wars, political changes, and often conditions of extreme discomfort.

102. The General Survey observers were recruited from an otherwise untapped reserve of literate Arabic writers: some of these were ex-police writers, freed by the increasing use of English in the Police Department. Mr. Hassan Nur, Senior Native Assistant Surveyor, translated most of the Arabic reports into English, and quickly learned to use the Gazetteer (Table 3, para. 79), to note latitudes and longitudes of place names on his translations. The plotting of the translated and gazetted reports was carried out exclusively by Viney and Hunt, who were sufficiently informed about the Protectorate as a whole to check the gazetted reports whilst plotting the meteorological and tribal data onto monthly work-maps.

103. Employment was not found for most of the Arabic writers at the end of the Survey, but they are a ready source of clerks and observers for any department which employs an assistant capable of translating the local " bush Arabic " widely used in the Protectorate.

104. As the patrolling of posts, partly by motor vehicle and partly on foot, took about six weeks to complete, it was soon found necessary to reduce the number of reports to one at the end of each month, when a patrol with rations and pay visited the post and collected the report, noting other data during the patrol. The number of mislaid reports was thus reduced to a minimum.

105. Equipment was obtained only with difficulty in the early stages of the Survey (1943–44), but as soon as a few thermometers were obtained maximum and minimum temperatures and humidities were recorded at as many posts as the thermometers would serve. Ground wind was also observed at some posts, and direction of cloud movement at a few, but the first concern of all observers was always the accurate recording of rainfall at 8.30 a.m. every morning, including nil records, and the reporting of rainfall in the neighbourhood of the post. The records so obtained vary in reliability, but by constant monthly patrolling by observer sergeants, native assistant surveyors or survey officers, and occasional transfers, replacements on leave, and odd checks by travelling officers of other departments, a fair average of reliability seems to have been obtained. Outstanding records have always been followed up, enquiries made from officials who were in the area and, if necessary, personal visits made to interrogate local Somalis, and to note any effects of flood, the state of grazing, etc. Such outstanding rain records were, e.g. those at Bihen-Nogaled (Post 18), 14·55 inches in May 1945; and at Daloh (Post 25), 19·00 inches in June 1949.

106. The degree of accuracy obtained for the final average rainfalls is a function not only of the number and position of observer posts, and the efficiency with which observers reported on rainfall between their posts, but also of the period of time during which observations were carried out. Rainfall is known to be extremely sporadic both in time and areally, and it is believed that unusually large falls of rain do in fact occur sporadically across the country in most years. With only 30 to 50 rain gauges such cloudbursts are seldom recorded, but are known to occur, and are particularly noticeable in the areas of low average rainfall of the E. and S.E.

B. General Climatic Scheme (see Somaliland Contour Sketch Map, illus. 6, para. 72)

107. The Survey was concerned primarily with the Protectorate, and adjacent areas grazed by British Protected tribes, and the neighbouring countries of French Somaliland, Ethiopia and Somalia (Italiana) have not been thoroughly covered.

108. Roughly the area of highest rainfall (10–20 inches) is the area over 4,000 feet above sea level (see illus. 6) consisting of the Harar Plateau in the west, the Golis, Wogr, and Ashararet Ranges in the central Protectorate, and the Al Hills of the north-east. This area is the Main Watershed of the country. These areas get some rain in most months, and do particularly well in the period between the main rains of April to June and the short rains of October–November, when many areas are drying up in the desiccating Kharif (Haga), S.W. Monsoon wind.

109. South of this plateau belt the rains tend to fall mostly in April to June and October to November, any other minor rains falling mostly on the ribs of land extending south-westward from the main plateau (see illus. 5, para. 71, 3,000-foot contour).

110. North of the Main Watershed, and on the east coast of Somalia, there are more frequently sporadic rains during the dry season from December to March, presumably due to the upward deflection of the N.E. Monsoon by the Main Watershed mountains, the steep scarps of which face the Gulf of Aden.

111. The climate appears to depend firstly on the fact that the sun passes vertically overhead twice in the year, with the resultant N.E. Monsoon when the sun is in the south, and S.W. Monsoon when it is north of the Protectorate. The hot season is from April to September, when the sun is north of the Equator.

112. Between the end of the N.E. Monsoon and the beginning of the S.W. Monsoon is a calm, windless period in April called " Kalil " in Somali. In April the main " Gu " rains should begin (but see Table 2, para. 58, Somali Seasonal Calendar), in the south and west: in the south because the season is naturally earlier in the south whence the sun has come, and in the west because of the altitude of the Harar Plateau. This Gu rain spreads to the north and east during April (sometimes delayed until May). In a good year it generally rains every day (most often in the afternoon) for three or four days running, followed by a

period of two or three days without rain, during April and the first half of May. By June the rain has usually become less, and the dry S.W. Monsoon definitely unpleasant. In July there is usually not very much rain, and south-west gales are not unusual. The highest temperatures of the year are recorded in July and August though owing to the wind the heat is less oppressive than in the Kalil calm periods of April and September.

113. Usually in the second half of July rain starts again at the higher altitudes and continues along the Main Watershed ("Kalarug" in Somali), until the calm Kalil of September, when the S.W. Monsoon drops. In October the N.E. Monsoon period should start, and there is nearly always widespread rain (though not so much as in the Gu main rains). In November there should be more of this "Dhair" rain in the first half of the month. By November, however, the N.E. Monsoon should be blowing quite strongly, and in an average year there is little rain in the second half of November, or in December and January, though in some years the scarps of the Main Watershed facing the Gulf of Aden get quite good rains in these months.

114. In February there are usually rains in the west and in isolated parts of the Watershed, very often in the mornings (Maie). In March there is usually increasing rain in the west (Harar Plateau), and sometimes over the whole Watershed area and the high ribs of land. In the west this rain often runs right on into the main Gu rains of April again.

C. Rain: General

115. The assessment of the value of rainfall for a year depends not only on the number of inches recorded at posts, the number of posts, the area covered, and the amount of information obtained between posts, but also on the amount of rain which falls in a day and is able to penetrate the soil before being evaporated or running off.

116. In the apparently porous red soil of the Haud, over which water had trickled after heavy thunderstorms on a nearly level surface for 24 hours (Qaidr Boleh, 1949), the water penetrated only nine inches. Much research remains to be done on porosity of soils, run-off, evaporation, etc. That the water from the Main Watershed does penetrate the soil is proved by the existence of the belt of wells in the line Hargeisa, Guled Haji, Odweina, Burao (and the Ain and Nogal valleys). In the Hargeisa-Burao well zone there is plenty of water, and that at Burao, 80 to 90 feet below the surface, certainly comes from the Golis-Wogr watershed rains.

117. The day-to-day records of rain from posts have been kept only in manuscript form (packed away in cases in Hargeisa).

118. Despite the actual statistical records (Tables 5 and 6, paras. 139, 140), and the average rainfall maps (illus. 14–28, paras. 124–138), the assessment of values of rainfall (Table 8, para. 142) has been made largely from the annual and quarterly maps, and the monthly work-maps. The last are only in manuscript form, but annual and quarterly rainfall maps have been published in Annual Reports, 1944–49, and the distribution factor in assessment of rainfall values is derived from them.

119. It has been found that isohyets (lines of equal rainfall, cf. contours showing lines of equal altitude), need not necessarily completely embrace each other as must altitude contours. To climb from 100 to 300 feet one must pass the 200-foot contour; but there may be a cloudburst on one side of a line and no rain at all on the other. Isohyets have, therefore, been drawn without adherence to the usual practice of making the lines embrace, but attempting to show the actual facts. In some countries isohyets will in fact resemble contours. In the course of a long period, even in areas of sporadic rainfall like Somaliland, the average maps of rainfall will in the end probably resemble contour maps; but for shorter periods one must expect the isohyets to butt up against each other, in a way which no draughtsman of contours would approve.

120. Annual rainfalls such as Go'o 43·68 inches in 1946, Daloh 41·11 inches in 1945, and especially Bihen (Nogaled) 18·89 inches in 1945, have been doubted. When, however, one finds the old record of Sheikh 47·14 inches in 1923, and experiences a storm in the Golis, or the Al Hills, one is convinced that such records are quite likely. The terrific storm in May 1945 at Bihen in the usually dry S.E. Nogal, was fortunately observed by Captain Gilliland who was making a botanical survey there, though he fled before the storm and did not actually read the gauge. In 1941, however, the writer's transport was marooned for ten days to a half-mile perimeter by floods at Gardo, and simultaneously Messrs. Smith, Brooke, and

Harris-Rivett were similarly held up in different parts of the Nogal, whilst the Tug Der at Burao overflowed its banks, flooding and destroying some of the Government buildings. There is no doubt that astounding falls of rain do occur in the Protectorate, and though unusual records should always be checked, the few high records of the seven-year General Survey probably show a fair proportion of the storms which occur either in small areas, or more rarely, over most of the Protectorate.

121. For several years there have been three rain-gauges at Hargeisa (R.A.F. on landing ground at 4,500 feet, and District Commissioner's and Agricultural Office's at 4,200 feet, half a mile apart and five miles north of the R.A.F. Station). There has also sometimes been an extra gauge at the Police Office in Burao, about a quarter of a mile from the General Survey Headquarters gauge. On the whole these gauges near each other give similar readings over a year (though not identical), but frequently one records a storm on a day when there is no rain at all at the post nearby.

122. Table 5 (below) and the Summary of Table 5 in Table 6, show the actual recorded rainfall statistics. The maps (illus. 14–28 below) are the quintessence of about 130 monthly, quarterly and annual rainfall maps (mostly on the scale 1 : 3,000,000). The maximum maps, both quarterly and annual, have been compiled by taking the highest rainfall plotted for any point on any of the seven annual report maps: the minimum by similarly taking the lowest plotted records. The resulting compilation maps have then been checked with the statistics given in Table 5, and slightly amended where necessary.

123. The average rainfall maps have been compiled by taking pairs of maps, quarterly or annual, for the seven-year period thus:—

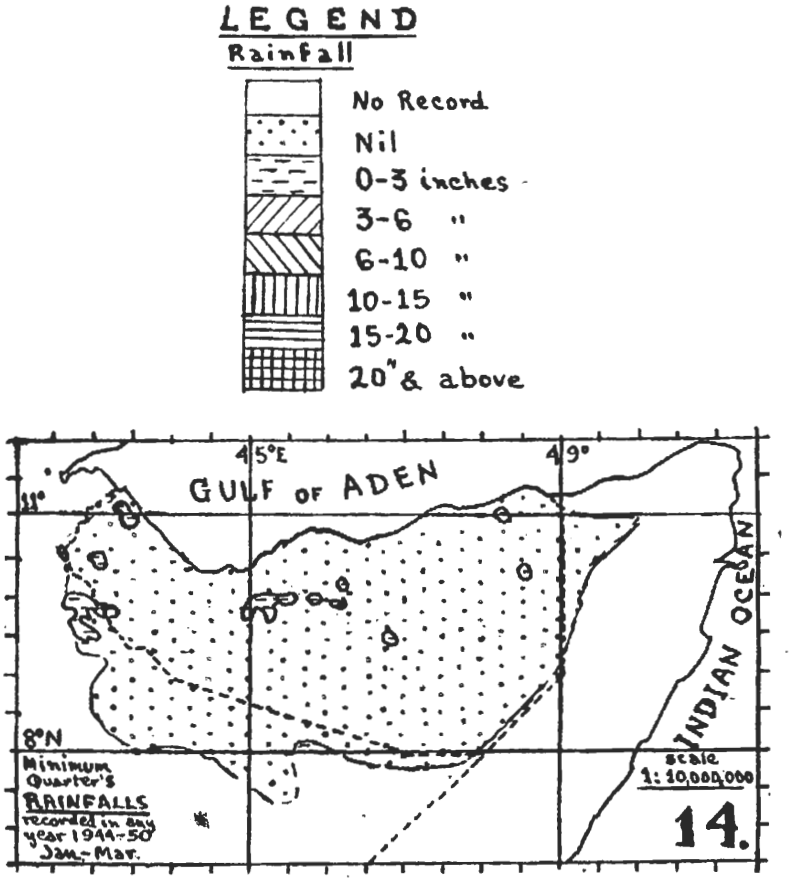
1944–1945 1946–1947 1948–1949

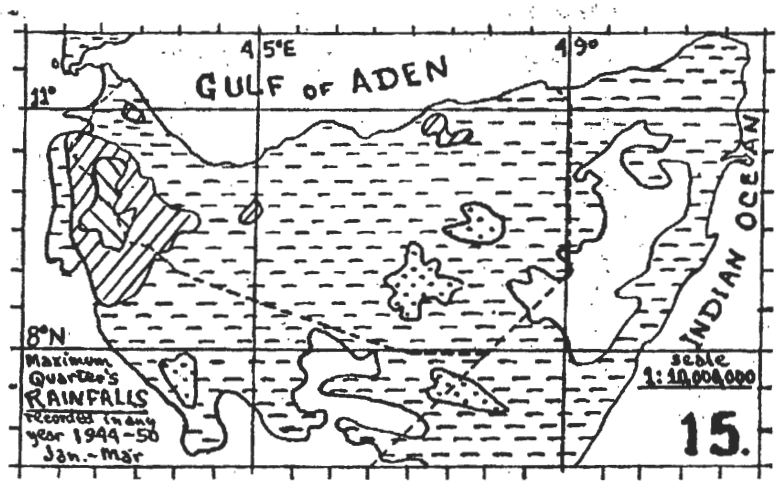
1944–1947 1948–1950

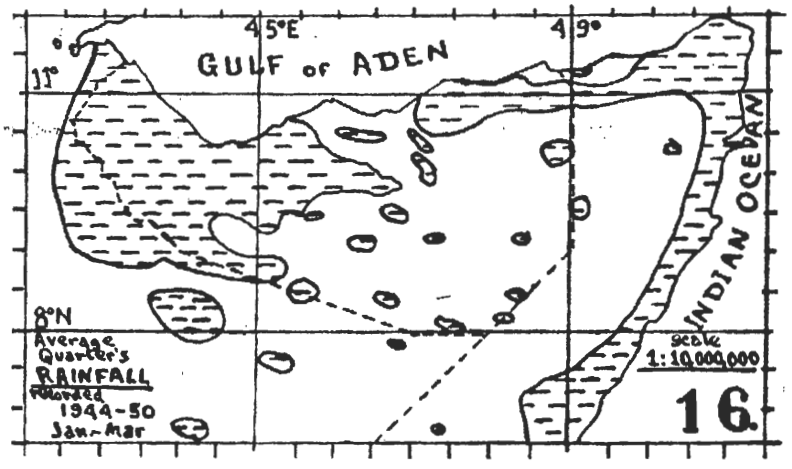
1944–1950

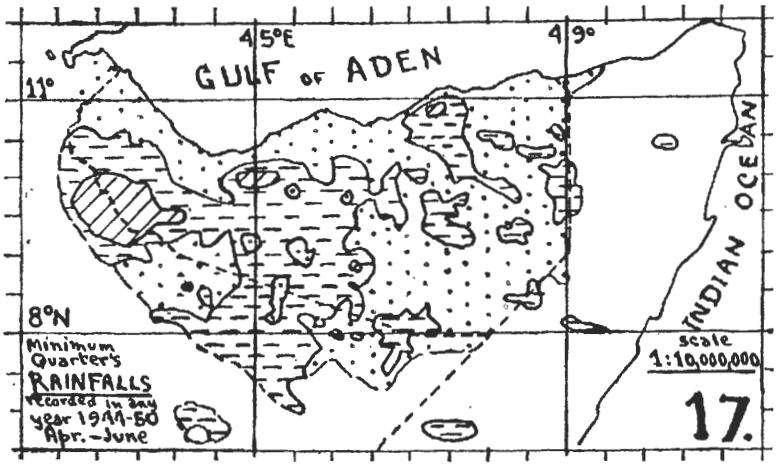
and the final map 1944–50 checked and amended from Table 5 as with the maximum and minimum maps. It should be noted that the maximum and minimum maps show the highest and lowest rainfalls recorded in seven years, not for the Protectorate as a whole, but of the extremes in different places for different years in a patchwork. The average rainfall maps include all the results of the whole seven-year survey.

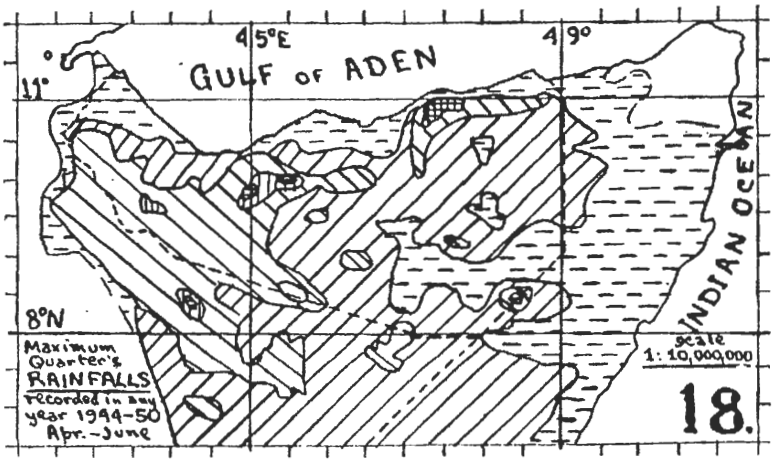
124–138. (*Illustrations* 14–28.)

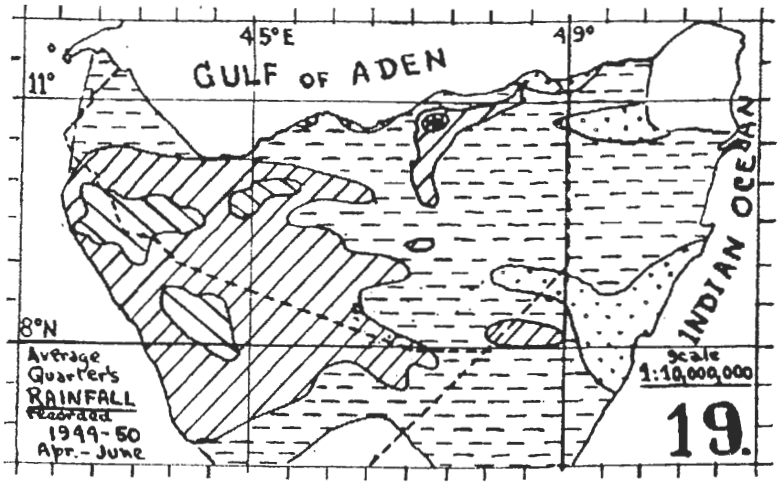


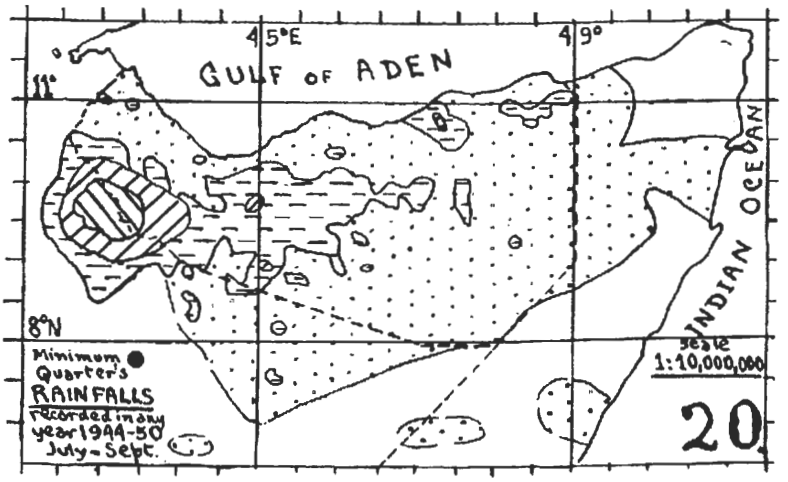

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Maximum Quarter's RAINFALLS recorded in any year 1949-50 Jan.-Mar
scale 1:10,000,000
15.

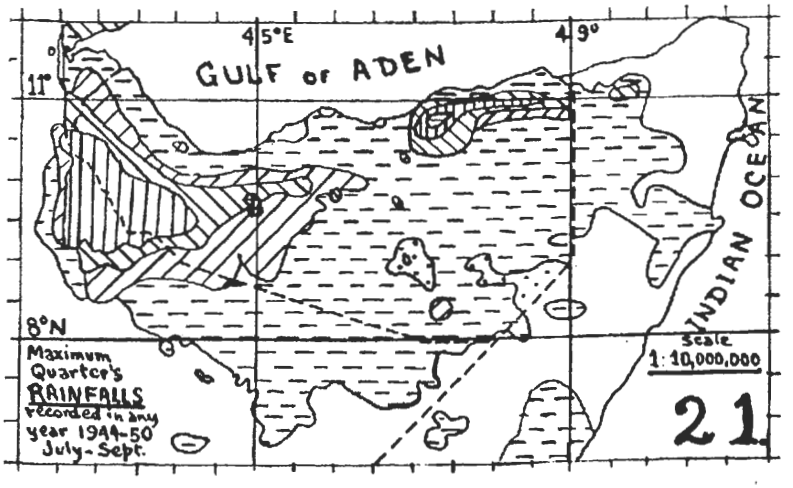

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Average Quarter's RAINFALL recorded 1949-50 Jan-Mar
scale 1:10,000,000
16.

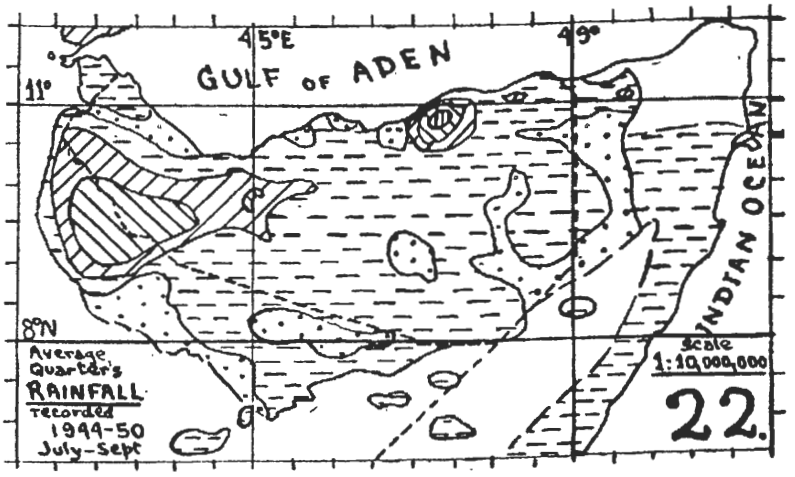

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Minimum Quarter's RAINFALLS recorded in any year 1949-50 Apr.-June
scale 1:10,000,000
17.

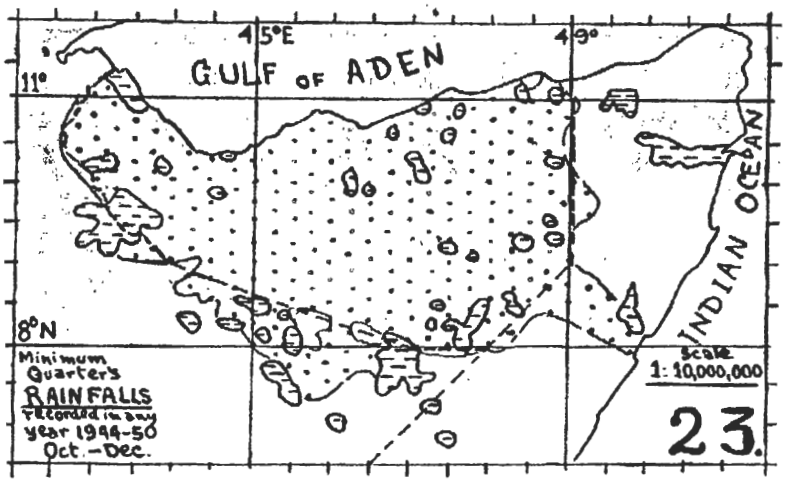

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Maximum Quarter's RAINFALLS recorded in any year 1949-50 Apr.-June
scale 1:10,000,000
18.

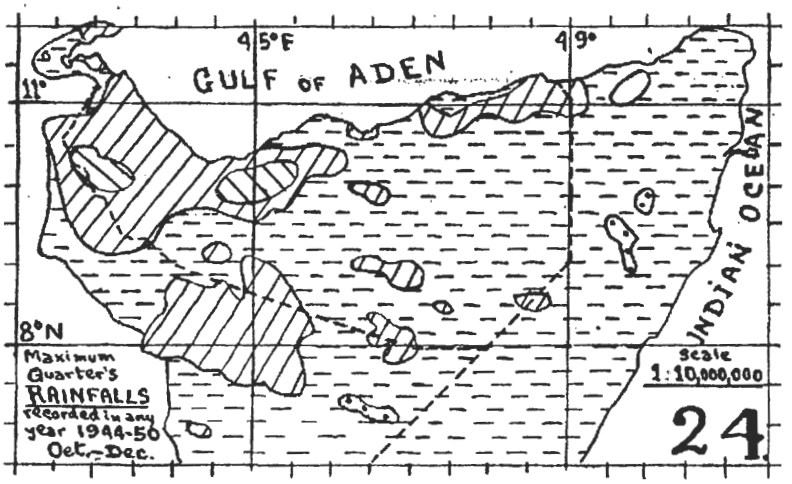

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Average Quarter's RAINFALL recorded 1949-50 Apr.-June
Scale 1:10,000,000
19.

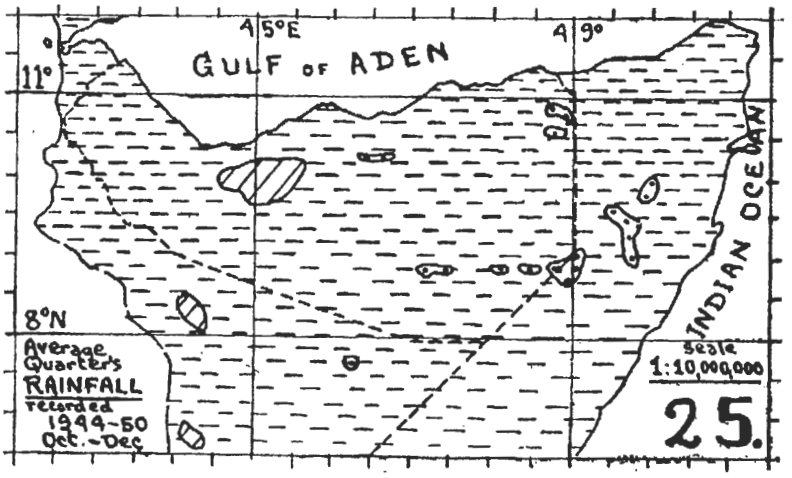

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Minimum Quarter's RAINFALLS recorded in any year 1949-50 July-Sept.
Scale 1:10,000,000
20.

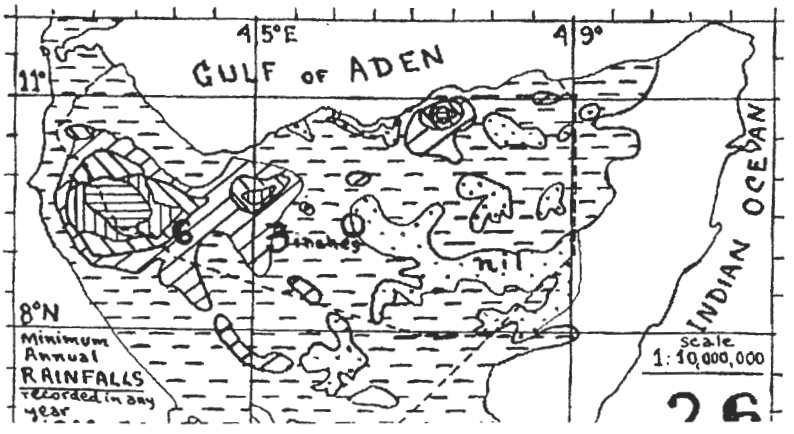

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Maximum Quarter's RAINFALLS recorded in any year 1949-50 July-Sept.
Scale 1:10,000,000
21.

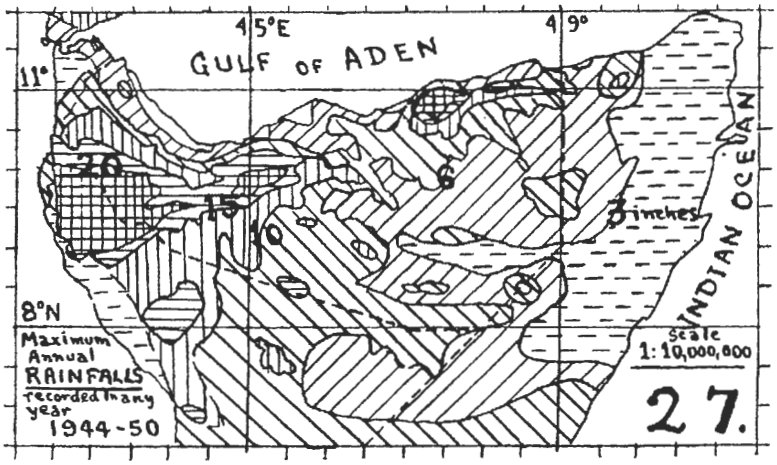

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Average Quarter's RAINFALL recorded 1949-50 July-Sept
Scale 1:10,000,000
22.

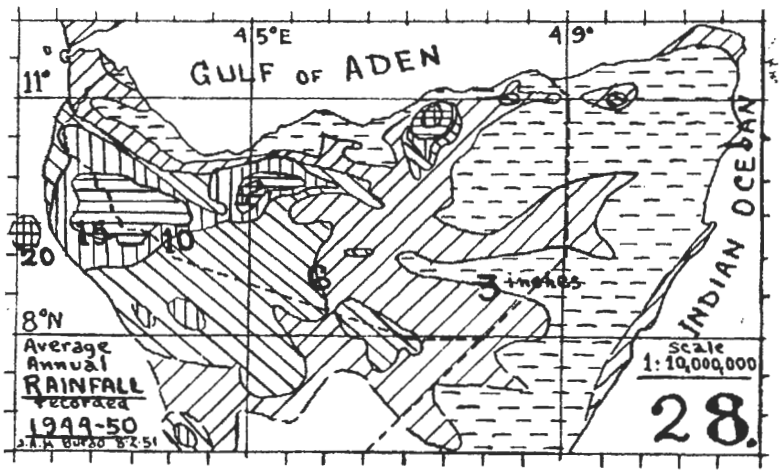

45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Minimum Quarter's RAINFALLS recorded in any year 1944-50 Oct.-Dec.
Scale 1:10,000,000
23.


45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Maximum Quarter's RAINFALLS recorded in any year 1944-50 Oct.-Dec.
Scale 1:10,000,000
24


45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
8°N
Average Quarter's RAINFALL recorded 1944-50 Oct.-Dec.
Scale 1:10,000,000
25.


45°E
49°
11°
GULF OF ADEN
INDIAN OCEAN
Binnaes
nil
8°N
Minimum Annual RAINFALLS recorded in any year
Scale 1:10,000,000





139–143. (*Tables* 5–9.)

TABLE 5

DETAILED MONTHLY RAINFALL RECORDS IN INCHES, 1944–50

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
WAJALE ...	1944	0·00	0·00	4·30	4·30	2·59	0·71	1·50	4·80	9·10	3·27	4·07	1·79	9·13	18·23	0·00	1·86	1·84	3·70	21·93	1944
	1945	0·00	0·00	0·00	0·00	1·54	4·35	1·53	7·42	7·42	2·03	3·42	4·61	10·06	17·48	0·13	0·30	0·00	0·43	17·91	1945
	1946	0·00	0·00	0·45	0·45	6·01	2·12	1·34	9·47	9·92	5·57	4·54	2·33	12·44	22·36	0·60	0·00	0·00	0·60	22·96	1946
	1947	0·00	2·69	4·50	7·19	2·14	0·71	2·06	4·91	12·10	2·69	2·81	1·70	7·20	19·30	0·00	0·17	0·00	0·17	19·47	1947
	1948	0·00	0·18	0·11	0·29	2·16	3·61	3·01	8·78	9·07	1·95	2·74	4·00	8·69	17·76	0·15	0·00	0·00	0·15	17·91	1948
	1949	0·00	0·00	0·37	0·37	0·25	6·39	2·72	9·36	9·73	1·23	4·50	2·44	8·17	17·90	0·67	2·14	0·33	3·14	21·04	1949
	1950	0·33	0·00	0·00	0·33	1·02	1·89	3·86	6·77	7·10	2·85	3·49	4·14	10·48	17·58	0·36	0·00	0·00	0·36	17·94	1950
Total, 7 years ...		0·33	2·87	9·73	12·93	15·71	19·78	16·02	51·51	64·44	19·59	25·57	21·01	66·17	130·61	1·91	4·47	2·17	8·55	139·16	
1944–50 Average ...		0·05	0·41	1·39	1·85	2·24	2·83	2·29	7·36	9·21	2·80	3·65	3·00	9·45	18·66	0·27	0·64	0·31	1·22	19·88	Average
Minimum		0·00	0·00	0·00	0·00	0·25	0·71	1·34	4·80	7·10	1·23	2·74	1·70	7·20	17·48	0·00	0·00	0·00	0·15	17·94	Minimum (1950)
Maximum		0·33	2·69	4·50	7·19	6·01	6·39	3·86	9·47	12·10	5·57	4·54	4·61	12·44	22·36	0·67	2·14	1·84	3·70	22·96	Maximum (1946)
GEBILE/IJARA ...	1944	0·00	0·00	3·50	3·50	1·24	0·73	2·26	4·23	7·73	1·65	1·13	2·51	5·29	13·02	0·00	0·00	0·00	0·00	13·02	1944
	1945	0·00	0·00	0·00	0·00	0·00	3·40	6·64	10·04	10·04	1·84	5·03	2·00	8·87	18·91	0·00	1·79	0·00	1·79	20·70	1945
	1946	0·00	0·00	0·00	0·00	3·48	1·60	1·82	6·90	6·90	3·47	4·77	0·92	9·16	16·06	2·11	0·00	0·00	2·11	18·17	1946
	1947	0·00	0·00	4·07	4·07	0·89	0·30	1·72	2·91	6·98	1·70	4·07	4·30	10·07	17·05	0·00	0·70	0·00	0·70	17·75	1947
	1948	0·43	1·05	0·73	2·21	1·42	1·52	3·28	6·22	8·43	1·82	1·62	1·46	4·90	13·33	0·73	0·00	0·00	0·73	14·06	1948
	1949	0·00	0·00	0·03	0·03	0·20	6·71	0·78	7·69	7·72	1·63	5·49	1·11	8·23	15·95	0·85	1·83	0·66	3·34	19·29	1949
	1950	0·21	0·00	0·00	0·21	0·00	2·88	2·01	4·89	5·10	6·02	6·31	3·41	15·74	20·84	0·00	0·00	0·00	0·00	20·84	1950
Total, 7 years ...		0·64	1·05	8·33	10·02	2·73	17·14	18·51	42·88	52·90	18·13	28·42	15·71	62·26	115·16	3·69	4·32	0·66	8·67	123·83	
1944–50 Average ...		0·09	0·15	1·19	1·43	1·03	2·45	2·64	6·13	7·56	2·59	4·06	2·24	8·89	16·45	0·53	0·62	0·09	1·24	17·69	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·30	0·78	2·91	5·10	1·63	1·13	0·92	4·90	13·02	0·00	0·00	0·00	0·00	13·02	Minimum (1944)
Maximum		0·43	1·05	4·07	4·07	3·48	6·71	6·64	10·04	10·04	6·02	6·31	4·30	15·74	20·84	2·11	1·83	0·66	3·34	20·84	Maximum (1950)
(Note : Gebile from 1.1.44–31.12.45 and from 1.6.50–31.12.50)																					
GO'O	1946	0·00	0·00	0·50	0·50	5·63	7·85	4·30	17·78	18·28	6·97	8·49	4·64	20·10	38·38	2·91	2·39	0·00	5·30	43·68	1946
	1947	0·00	0·33	3·16	3·49	4·28	4·26	5·21	13·75	17·24	0·95	2·49	3·42	6·86	24·10	1·17	1·69	0·05	2·91	27·01	1947
	1948	0·00	0·81	0·70	1·51	2·16	0·92	4·19	7·27	8·78	0·45	1·85	4·59	6·89	15·67	3·35	0·34	0·00	3·69	19·36	1948
	1949	0·25	0·54	0·30	1·09	0·49	4·64	1·71	6·84	7·93	0·82	2·04	4·44	7·30	15·23	1·63	2·10	1·23	4·96	20·19	1949
	1950	0·70	0·00	0·23	0·93	0·91	0·79	1·23	2·93	3·86	1·35	1·45	3·52	6·32	10·18	0·38	0·00	0·00	0·38	10·56	1950
Total, 5 years ...		0·95	1·68	4·89	7·52	13·47	18·46	16·64	48·57	56·09	10·54	16·32	20·61	47·47	103·56	9·44	6·52	1·28	17·24	120·80	
1946–50 Average ...		0·19	0·34	0·98	1·50	2·69	3·69	3·33	9·71	11·22	2·11	3·26	4·12	9·49	20·71	1·89	1·30	0·26	3·45	24·16	Average
Minimum		0·00	0·00	0·23	0·50	0·49	0·79	1·23	2·93	3·86	0·45	1·45	3·42	6·32	10·18	0·38	0·00	0·00	0·38	10·56	Minimum (1950)
Maximum		0·70	0·81	3·16	3·49	5·63	7·85	5·21	17·78	18·28	6·97	8·49	4·64	20·10	38·38	3·35	2·39	1·23	5·30	43·68	Maximum (1946)
ODWEINA ...	1944	0·00	0·00	0·56	0·56	0·14	1·85	0·36	2·35	2·91	0·34	0·55	0·64	1·53	4·44	0·05	0·05	0·00	0·10	4·54	1944
	1945	0·00	0·00	0·00	0·00	0·00	2·58	0·71	3·29	3·29	1·43	0·34	1·89	3·66	6·95	0·00	0·12	0·00	0·12	7·07	1945
	1946	0·00	0·00	0·00	0·00	2·60	0·78	1·06	4·44	4·44	0·73	1·04	3·22	4·99	9·43	0·18	0·00	0·00	0·18	9·61	1946
	1947	0·00	0·00	1·29	1·29	2·29	0·76	0·50	3·55	4·84	1·81	0·11	1·15	3·07	7·91	0·14	0·00	0·14	0·28	8·19	1947
	1948	0·00	0·00	0·00	0·00	3·22	0·59	4·88	8·69	8·69	0·08	0·12	0·54	0·74	9·43	1·57	0·16	0·00	1·73	11·16	1948
	1949	0·00	0·00	0·05	0·05	0·00	2·93	1·93	4·86	4·91	0·41	0·99	2·36	3·76	8·67	0·00	0·00	0·90	0·90	9·57	1949
	1950	0·28	0·00	0·00	0·28	0·15	0·11	1·41	1·67	1·95	0·34	1·25	3·07	4·66	6·61	0·00	0·00	0·00	0·00	6·61	1950
Total, 7 years ...		0·28	0·00	1·90	2·18	8·40	9·60	10·85	28·85	31·03	5·14	4·40	12·87	22·41	53·44	1·94	0·33	1·04	3·31	56·75	
1944–50 Average ...		0·04	0·00	0·27	0·31	1·20	1·37	1·55	4·12	4·43	0·73	0·63	1·84	3·20	7·63	0·28	0·05	0·15	0·47	8·11	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·11	0·36	1·67	1·95	0·08	0·11	0·54	0·74	4·44	0·00	0·00	0·00	0·00	4·54	Minimum (1944)
Maximum		0·28	0·00	1·29	1·29	3·22	2·93	4·88	8·69	8·69	1·81	1·25	3·22	4·99	9·43	1·57	0·16	0·90	1·73	11·16	Maximum (1948)

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
5. GUDUBI ...	1944	0·00	0·00	0·40	0·40	0·29	2·51	0·58	3·38	3·78	0·00	0·25	2·60	2·85	6·63	0·00	0·00	0·00	0·00	6·63	1944
	1945	0·00	0·00	0·00	0·00	0·00	3·02	1·21	4·23	4·23	0·00	0·00	1·44	1·44	5·67	0·04	1·70	0·00	1·74	7·41	1945
	1946	0·00	0·00	0·00	0·00	3·82	2·86	0·76	7·44	7·44	1·06	1·81	0·50	3·37	10·81	3·23	0·16	0·00	3·39	14·20	1946
	1947	0·00	0·00	0·96	0·96	0·12	0·68	0·04	0·84	1·80	0·07	0·00	1·19	1·26	3·06	0·20	1·93	0·00	2·13	5·19	1947
	1948	0·00	0·00	0·04	0·04	0·10	0·62	0·94	1·66	1·70	0·60	0·00	0·92	1·52	3·22	2·11	1·07	0·00	3·18	6·40	1948
	1949	0·00	0·00	0·00	0·00	0·00	3·05	0·00	3·05	3·05	0·15	0·19	0·06	0·40	3·45	0·33	0·00	0·27	0·60	4·05	1949
	1950	1·90	0·10	0·00	2·00	0·00	0·85	0·08	0·93	2·93	0·00	0·02	2·08	2·10	5·03	0·00	0·00	0·00	0·00	5·03	1950
Total, 7 years ...		1·90	0·10	1·40	3·40	4·33	13·59	3.61	21·53	24·93	1·88	2·27	8·79	12·94	37·87	5·91	4·86	0·27	11·04	48·91	
1944–50 Average ...		0·27	0·01	0·20	0·49	0·62	1·94	0·52	3·08	3·56	0·27	0·32	1·26	1·85	5·41	0·84	0·69	0·04	1·58	6·99	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·62	0·00	0·84	1·70	0·00	0·00	0·06	0·40	3·06	0·00	0·00	0·00	0·00	4·05	Minimum (1949)
Maximum		1·90	0·10	0·96	2·00	3·82	3·05	1·21	7·44	7·44	1·06	1·81	2·60	3·37	10·81	3·23	1·93	0·27	3·39	14·20	Maximum (1946)
6. DANOT... ...	1944	0·00	0·00	0·12	0·12	0·00	2·64	0·00	2·64	2·76	0·05	0·00	1·38	1·43	4·19	2·05	0·00	0·07	2·12	6·31	1944
	1945	0·00	0·00	0·00	0·00	0·00	5·11	0·00	5·11	5·11	0·07	0·00	0·40	0·47	5·58	0·62	0·60	0·00	1·22	6·80	1945
	1946	0·00	0·00	0·00	0·00	4·51		0·00	4·51	4·51	0·03	0·27	0·10	0·40	4·91	3·50	1·92	0·03	5·45	10·36	1946
	1947	0·00	0·00	0·71	0·71	2·43	4·75	0·00	7·18	7·89	0·00	0·00	0·08	0·08	7·97	1·15	0·10	0·15	1·40	9·37	1947
	1948	0·03	0·00	1·68	1·71	3·43	3·28	0·00	6·71	8·42	0·00	0·00	1·67	1·67	10·09	1·97	0·65	0·04	2·66	12·75	1948
	1949	0·00	0·00	0·05	0·05	0·30	0·81	0·00	1·11	1·16	0·07	0·03	0·53	0·63	1·79	1·38	0·11	0·04	1·53	3·32	1949
	1950	0·03	0·00	0·00	0·03	0·00	8·53	0·00	8·53	8·56	0·00	0·00	0·69	0·69	9·25	4·20	0·33	0·00	4·53	13·78	1950
Total, 7 years ...		0·06	0·00	2·56	2·62	35·79		0·00	35·79	38·41	0·22	0·30	4·85	5·37	43·78	14·87	3·71	0·33	18·91	62·69	
1944–50 Average ...		0·01	0·00	0·37	0·37	5·11		0·00	5·11	5·49	0·03	0·04	0·69	0·77	6·25	2·12	0·53	0·05	2·70	8·96	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·81	0·00	1·11	1·16	0·00	0·00	0·08	0·40	1·79	0·62	0·00	0·00	1·22	3·32	Minimum (1949)
Maximum		0·03	0·00	1·68	1·71	3·43	8·53	0·00	8·53	8·56	0·07	0·27	1·67	1·67	10·09	4·20	1·92	0·15	5·45	13·78	Maximum (1950)
7. AINABO... ...	1944	0·00	0·00	0·10	0·10	0·09	2·18	0·00	2·27	2·37	0·06	0·38	0·36	0·80	3·17	0·00	1·13	0·00	1·13	4·30	1944
	1945	0·00	0·00	0·26	0·26	0·00	6·07	1·21	7·28	7·54	0·00	0·00	1·10	1·10	8·64	0·60	2·57	0·00	3·17	11·81	1945
	1946	0·00	0·00	0·00	0·00	2·06	2·67	0·00	4·73	4·73	0·00	0·00	0·37	0·37	5·10	1·36	0·84	0·00	2·20	7·30	1946
	1947	0·00	0·00	0·22	0·22	2·78	1·80	0·23	4·81	5·03	0·00	0·00	0·20	0·20	5·23	0·52	0·15	0·00	0·67	5·90	1947
	1948	0·00	0·00	0·00	0·00	0·04	2·40	0·10	2·54	2·54	0·00	0·00	0·02	0·02	2·56	1·97	0·00	0·00	1·97	4·53	1948
	1949	0·84	0·00	0·26	1·10	0·21	2·40	0·34	2·95	4·05	0·00	0·00	0·47	0·47	4·52	0·05	0·31	0·09	0·45	4·97	1949
	1950	0·00	0·00	0·00	0·00	0·00	1·20	0·00	1·20	1·20	0·00	0·00	0·08	0·08	1·28	0·00	0·00	0·00	0·00	1·28	1950
Total, 7 years ...		0·84	0·00	0·84	1·68	5·18	18·72	1·88	25·78	27·46	0·06	0·38	2·60	3·04	30·50	4·50	5·00	0·09	9·59	40·09	
1944–50 Average ...		0·12	0·00	0·12	0·24	0·74	2·67	0·27	3·68	3·92	0·01	0·05	0·34	0·43	4·36	0·64	0·71	0·01	1·36	5·73	Average
Minimum		0·00	0·00	0·00	0·00	0·00	1·20	0·00	1·20	1·20	0·00	0·00	0·02	0·02	1·28	0·00	0·00	0·00	0·00	1·28	Minimum (1950)
Maximum		0·84	0·00	0·26	1·10	2·78	6·07	1·21	7·28	7·54	0·06	0·38	1·10	1·10	8·64	1·97	2·57	0·09	3·17	11·81	Maximum (1945)
8. YO'OBYABOH ...	1945	0·00	0·00	0·03	0·03	0·00	3·02	0·76	3·78	3·81	0·02	0·00	1·17	1·19	5·00	0·84	1·06	0·00	1·90	6·90	1945
	1946	0·00	0·00	0·00	0·00	7·93	4·07	0·19	12·19	12·19	0·07	0·00	0·69	0·76	12·95	2·65	0·20	0·00	2·85	15·80	1946
	1947	0·00	0·00	0·95	0·95	0·91	3·18	0·00	4·09	5·04	0·00	0·00	0·00	0·00	5·04	0·16	0·02	0·02	0·20	5·24	1947
	1948	0·00	0·00	0·10	0·10	0·53	2·40	0·60	3·53	3·63	0·00	0·00	0·55	0·55	4·18	2·61	0·04	0·00	2·65	6·83	1948
	1949	0·06	0·13	0·00	0·19	0·00	2·65	0·00	2·65	2·84	0·05	0·30	0·91	1·26	4·10	0·56	0·37	0·33	1·26	5·36	1949
	1950	0·53	0·00	0·00	0·53	0·03	2·00	0·05	2·08	2·61	0·00	0·00	0·20	0·20	2·81	0·20	0·00	0·00	0·20	3·01	1950
Total, 6 years ...		0·59	0·13	1·08	1·80	9·40	17·32	1·60	28·32	30·12	0·14	0·30	3·52	3·96	34·08	7·02	1·69	0·35	9·06	43·14	
1945–50 Average ...		0·10	0·02	0·18	0·30	1·57	2·89	0·27	4·72	5·02	0·02	0·05	0·59	0·66	5·68	1·17	0·28	0·06	1·51	7·19	Average
Minimum		0·00	0·00	0·00	0·00	0·00	2·00	0·00	2·08	2·61	0·00	0·00	0·00	0·00	2·81	0·16	0·00	0·00	0·20	3·01	Minimum (1950)
Maximum		0·53	0·13	0·95	0·95	7·93	4·07	0·76	12·19	12·19	0·07	0·30	1·17	1·26	12·95	2·65	1·06	0·33	2·85	15·80	Maximum (1946)

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
3ER	1944	0·00	0·00	0·40	0·40	0·22	2·00	0·00	2·22	2·62	0·15	0·35	0·70	1·20	3·82	0·00	0·00	0·00	0·00	3·82	1944
	1945	0·00	0·00	0·00	0·00	0·00	5·13	0·75	5·88	5·88	0·00	0·00	0·85	0·85	6·73	0·15	0·35	0·00	0·50	7·23	1945
	1946	0·15	0·00	0·00	0·15	0·60	1·47	0·88	2·95	3·10	0·00	0·11	1·55	1·66	4·76	2·75	0·00	0·00	2·75	7·51	1946
	1947	0·00	0·00	0·00	0·00	1·67	0·95	0·29	2·91	2·91	0·00	0·00	0·65	0·65	3·56	0·00	0·49	0·00	0·49	4·05	1947
	1948	0·00	0·00	0·00	0·00	1·98	1·10	1·86	4·94	4·94	0·00	0·00	0·35	0·35	5·29	? 1·80	0·00	0·00	1·80	7·09	1948
	1949	0·00	0·00	0·00	0·00	0·00	3·07	4·40	7·47	7·47	0·00	1·40	1·29	2·69	10·16	0·03	0·00	0·50	0·53	10·69	1949
	1950	0·20	0·00	0·00	0·20	0·00	0·17	0·50	0·67	0·87	0·00	0·00	1·97	1·97	2·84	0·00	0·00	0·00	0·00	2·84	1950
Total, 7 years ...		0·35	0·00	0·40	0·75	4·47	13·89	8·68	27·04	27·79	0·15	1·86	7·36	9·37	37·16	4·73	0·84	0·50	6·07	43·23	
1944–50 Average ...		0·05	0·00	0·06	0·11	0·64	1·98	1·24	3·86	3·97	0·02	0·27	1·05	1·34	5·31	0·68	0·12	0·07	0·87	6·18	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·17	0·00	0·67	0·87	0·00	0·00	0·35	0·35	2·84	0·00	0·00	0·00	0·00	2·84	Minimum (1950)
Maximum		0·20	0·00	0·40	0·40	1·98	5·13	4·40	7·47	7·47	0·15	1·40	1·97	2·69	10·16	2·75	0·49	0·50	2·75	10·69	Maximum (1949)
LAS ANOD ...	1944	0·00	0·00	0·00	0·00	0·50	1·00	0·00	1·50	1·50	0·00	0·00	0·88	0·88	2·38	0·33	0·56	0·07	0·96	3·34	1944
	1945	0·00	0·00	0·00	0·00	0·00	2·62	0·57	3·19	3·19	0·00	0·00	0·27	0·27	3·46	0·11	0·00	0·00	0·11	3·57	1945
	1946	0·15	0·00	0·00	0·15	1·72	3·90	0·04	5·66	5·81	0·02	0·00	0·02	0·04	5·85	2·36	0·00	0·03	2·39	8·24	1946
	1947	0·00	0·00	0·00	0·00	1·78	1·89	0·00	3·67	3·67	0·00	0·00	0·16	0·16	3·83	0·56	? 2·02	0·40	2·98	6·81	1947
	1948	0·00	0·00	0·25	0·25	0·00	0·00	0·00	0·00	0·25	0·00	0·00	0·00	0·00	0·25	4·18	0·00	0·00	4·18	4·43	1948
	1949	0·00	0·00	0·00	0·00	0·00	0·29	0·00	0·29	0·29	0·00	0·00	1·00	1·00	1·29	0·62	0·00	0·56	1·18	2·47	1949
	1950	0·00	0·00	0·00	0·00	0·00	1·23	0·00	1·23	1·23	0·00	0·00	3·10	3·10	4·33	0·40	0·00	0·00	0·40	4·73	1950
Total, 7 years ...		0·15	0·00	0·25	0·40	4·00	10·93	0·61	15·54	15·94	0·02	0·00	5·43	5·45	21·39	8·56	2·58	1·06	12·20	33·59	
1944–50 Average ...		0·02	0·00	0·04	0·06	0·57	1·56	0·09	2·22	2·28	0·00	0·00	0·78	0·78	3·06	1·22	0·37	0·15	1·74	4·80	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·25	0·00	0·00	0·00	0·00	0·25	0·11	0·00	0·00	0·11	2·47	Minimum (1949)
Maximum		0·15	0·00	0·25	0·25	1·78	3·90	0·57	5·66	5·81	0·02	0·00	3·10	3·10	5·85	4·18	2·02	0·56	4·18	8·24	Maximum (1946)
DONKUKOQ ...	1944	0·00	0·00	0·00	0·00	1·09	2·38	0·00	3·47	3·47	0·00	0·00	1·10	1·10	4·57	0·90	0·50	0·15	1·55	6·12	1944
	1945	0·00	0·00	0·00	0·00	0·00	2·78	0·00	2·78	2·78	0·00	0·00	0·00	0·00	2·78	0·00	0·13	0·00	0·13	2·91	1945
	1946	0·00	0·00	0·00	0·00	0·92	3·17	0·00	4·09	4·09	0·00	0·00	0·00	0·00	4·09	0·96	0·15	0·00	1·11	5·20	1946
	1947	0·13	0·00	0·00	0·13	0·17	2·98	0·00	3·15	3·28	0·00	0·00	0·00	0·00	3·28	0·18	0·28	0·00	0·46	3·74	1947
	1948	0·00	0·30	0·12	0·42	0·80	0·78	0·30	1·88	2·30	0·00	0·00	0·00	0·00	2·30	1·40	0·00	0·00	1·40	3·70	1948
Total, 5 years ...		0·13	0·30	0·12	0·55	2·98	12·09	0·30	15·37	15·92	0·00	0·00	1·10	1·10	17·02	3·44	1·06	0·15	4·65	21·67	
1944–48 Average ...		0·03	0·06	0·02	0·11	0·60	2·42	0·06	3·07	3·18	0·00	0·00	0·22	0·22	3·40	0·69	0·21	0·03	0·93	4·33	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·78	0·00	1·88	2·30	0·00	0·00	0·00	0·00	2·30	0·00	0·00	0·00	0·13	2·91	Minimum (1945)
Maximum		0·13	0·30	0·12	0·42	1·09	3·17	0·30	4·09	4·09	0·00	0·00	1·10	1·10	4·57	1·40	0·50	0·15	1·55	6·12	Maximum (1944)
AWAREH ...	1944	0·00	0·00	1·02	1·02	0·41	4·25	0·00	4·66	5·68	0·36	0·00	1·45	1·81	7·49	0·78	0·60	0·40	1·78	9·27	1944
	1945	0·00	0·00	0·00	0·00	0·20	13·80	1·10	15·10	15·10	0·00	0·00	0·92	0·92	16·02	1·18	2·20	0·00	3·38	19·40	1945
	1946	0·00	0·00	0·00	0·00	4·58	0·84	0·69	6·11	6·11	0·10	0·40	1·92	2·42	8·53	3·16	0·08	0·00	3·24	11·77	1946
	1947	0·00	0·00	0·95	0·95	1·70	3·49	0·65	5·84	6·79	0·00	0·10	0·36	0·46	7·25	1·90	0·17	0·00	2·07	9·32	1947
	1948	0·00	0·00	0·82	0·82	2·62	3·79	0·00	6·41	7·23	0·10	0·00	1·95	2·05	9·28	5·35	0·30	0·12	5·77	15·05	1948
	1949	0·00	0·00	0·60	0·60	0·10	2·99	0·19	3·28	3·88	0·00	0·41	0·40	0·81	4·69	3·44	0·69	0·70	4·83	9·52	1949
	1950	0·18	0·00	0·10	0·28	0·80	1·60	0·00	2·40	2·68	0·00	0·00	0·93	0·93	3·61	0·40	0·00	0·00	0·40	4·01	1950
Total, 7 years ...		0·18	0·00	3·49	3·67	10·41	30·76	2.63	43·80	47·47	0·56	0·91	7·93	9·40	56·87	16·21	4·04	1·22	21·47	78·34	
1944–50 Average ..		0·03	0·00	0·50	0·52	1·49	4·39	0·38	6·26	6·78	0·08	0·13	1·13	1·34	8·12	2·31	0·58	0·17	3·07	11·19	Average
Minimum		0·00	0·00	0·00	0·00	0·10	0·84	0·00	2·40	2·68	0·00	0·00	0·36	0·46	3·61	0·40	0·00	0·00	0·40	4·01	Minimum (1950)
Maximum		0·18	0·00	1·02	1·02	4·58	13·80	1·10	15·10	15·10	0·36	0·41	1·95	2·42	16·02	5·35	2·20	0·70	5·77	19·40	Maximum (1945)

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
13. GARDO... ...	1944	0·00	0·00	0·00	0·00	0·10	1·35	0·00	1·45	1·45	0·41	0·00	0·10	0·51	1·96	0·00	0·20	0·05	0·25	2·21	1944
	1945	0·00	0·01	0·06	0·07	0·09	1·55	1·06	2·70	2·77	0·02	0·00	0·43	0·45	3·22	0·00	0·00	0·00	0·00	3·22	1945
	1946	0·28	0·00	0·00	0·28	2·00	2·40	0·70	5·10	5·38	0·00	0·00	0·00	0·00	5·38	0·30	0·70	0·00	1·00	6·38	1946
	1947	0·00	0·00	0·00	0·00	1·14	1·47	0·10	2·71	2·71	0·00	0·00	0·00	0·00	2·71	0·00	0·05	—	0·05	2·76	1947
	1948	0·00	0·00	0·50	0·50	0·51	1·89	0·00	2·40	2·90	0·00	0·00	0·29	0·29	3·19	0·75	0·00	0·00	0·75	3·94	1948
	1949	0·00	0·00	0·81	0·81	0·00	2·40	0·60	3·00	3·81	0·00	0·00	2·34	2·34	6·15	0·00	0·53	0·00	0·53	6·68	1949
Total, 6 years ...		0·28	0·01	1·37	1·66	3·84	11·06	2·46	17·36	19·02	0·43	0·00	3·16	3·59	22·61	1·05	1·48	0·05	2·58	25·19	
1944–49 Average ...		0·05	0·00	0·23	0·28	0·64	1·84	0·41	2·89	3·17	0·07	0·00	0·53	0·60	3·77	0·18	0·25	0·01	0·43	4·20	Average
Minimum		0·00	0·00	0·00	0·00	0·00	1·35	0·00	1·45	1·45	0·00	0·00	0·00	0·00	1·96	0·00	0·00	0·00	0·00	2·21	Minimum (1944)
Maximum		0·28	0·01	0·81	0·81	2·00	2·40	1·06	5·10	5·38	0·41	0·00	2·34	2·34	6·15	0·75	0·70	0·05	1·00	6·68	Maximum (1949)
14. BURAN... ...	1945	0·00	0·00	0·00	0·00	0·00	1·42	1·23	2·65	2·65	0·00	0·00	0·00	0·00	2·65	0·00	0·00	0·00	0·00	2·65	1945
	1946	0·00	0·00	0·00	0·00	1·80	0·00	0·47	2·27	2·27	0·00	0·00	0·41	0·41	2·68	0·24	0·86	0·00	1·10	3·78	1946
	1947	0·00	0·00	0·00	0·00	0·00	1·99	0·09	2·08	2·08	0·00	0·00	0·07	0·07	2·15	0·00	0·00	0·00	0·00	2·15	1947
	1948	0·00	0·00	0·17	0·17	0·21	2·02	0·08	2·31	2·48	0·00	0·00	1·02	1·02	3·50	0·55	0·00	0·00	0·55	4·05	1948
	1949	0·00	0·00	0·56	0·56	0·00	0·58	0·00	0·58	1·14	0·00	0·00	0·80	0·80	1·94	0·04	0·00	0·00	0·04	1·98	1949
	1950	0·94	0·00	0·00	0·94	0·00	0·00	0·31	0·31	1·25	0·00	0·00	0·12	0·12	1·37	0·00	0·15	0·00	0·15	1·52	1950
Total, 6 years ...		0·94	0·00	0·73	1·67	2·01	6·01	2·18	10·20	11·87	0·00	0·00	2·42	2·42	14·29	0·83	1·01	0·00	1·84	16·13	
1945–50 Average ...		0·16	0·00	0·12	0·28	0·34	1·00	0·36	1·70	1·98	0·00	0·00	0·40	0·40	2·38	0·14	0·17	0·00	0·31	2·69	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·31	1·14	0·00	0·00	0·00	0·00	1·37	0·00	0·00	0·00	0·00	1·52	Minimum (1950)
Maximum		0·94	0·00	0·56	0·94	1·80	2·02	1·23	2·65	2·65	0·00	0·00	1·02	1·02	3·50	0·55	0·86	0·00	1·10	4·05	Maximum (1948)
15. HUDUN ...	1944	0·00	0·00	0·00	0·00	0·09	0·40	0·00	0·49	0·49	0·32	0·00	0·40	0·72	1·21	0·00	1·26	0·15	1·41	2·62	1944
	1945	0·00	0·00	0·00	0·00	0·00	3·88	2·20	6·08	6·08	0·00	0·00	0·24	0·24	6·32	0·25	0·23	0·00	0·48	6·80	1945
	1946	0·00	0·00	0·00	0·00	0·09	2·25	0·00	2·34	2·34	0·00	0·00	0·00	0·00	2·34	1·85	0·00	0·00	1·85	4·19	1946
	1947	0·00	0·00	0·09	0·09	0·60	2·80	0·22	3·62	3·71	0·00	0·00	0·00	0·00	3·71	1·27	0·00	0·15	1·42	5·13	1947
	1948	0·00	0·00	0·29	0·29	0·00	1·18	0·58	1·76	2·05	0·00	0·00	0·24	0·24	2·29	0·98	0·00	0·00	0·98	3·27	1948
	1949	0·00	0·00	0·11	0·11	0·00	0·66	0·66	1·32	1·43	0·00	0·00	1·92	1·92	3·35	0·12	0·00	0·00	0·12	3·47	1949
	1950	0·03	0·00	0·00	0·03	0·00	1·56	0·00	1·56	1·59	0·00	0·00	0·77	0·77	2·36	0·00	0·08	0·00	0·08	2·44	1950
Total, 7 years ...		0·03	0·00	0·49	0·52	0·78	12·73	3·66	17·17	17·69	0·32	0·00	3·57	3·89	21·58	4·47	1·57	0·30	6·34	27·92	
1944–50 Average ...		0·00	0·00	0·07	0·07	0·11	1·82	0·52	2·45	2·53	0·05	0·00	0·51	0·56	3·09	0·64	0·22	0·04	0·91	3·99	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·40	0·00	0·49	0·49	0·00	0·00	0·00	0·00	1·21	0·00	0·00	0·00	0·08	2·44	Minimum (1950)
Maximum		0·03	0·00	0·29	0·29	0·60	3·88	2·20	6·08	6·08	0·32	0·00	1·92	1·92	6·32	1·85	1·26	0·15	1·85	6·80	Maximum (1945)
16. DO'MO	1944	0·00	0·00	0·00	0·00	0·80	3·09	0·00	3·89	3·89	0·30	0·00	1·15	1·45	5·34	3·04	1·20	0·00	4·24	9·58	1944
	1945	0·00	0·00	0·00	0·00	0·00	4·15	1·24	5·39	5·39	0·00	0·00	0·00	0·00	5·39	0·10	0·10	0·00	0·20	5·59	1945
	1946	0·00	0·00	0·00	0·00	1·91	2·55	0·00	4·46	4·46	0·00	0·00	0·16	0·16	4·62	1·35	0·20	0·00	1·55	6·17	1946
	1947	0·00	0·00	0·00	0·00	3·00	3·25	0·00	6·25	6·25	0·00	0·00	0·00	0·00	6·25	2·90	0·40	0·00	3·30	9·55	1947
	1948	0·00	0·00	0·62	0·62	0·35	3·53	0·00	3·88	4·50	0·00	0·00	0·28	0·28	4·78	1·82	0·18	0·00	2·00	6·78	1948
	1949	0·10	0·00	0·00	0·10	0·00	5·60	0·00	5·60	5·70	0·00	0·00	0·00	0·00	5·70	2·04	0·27	0·10	2·41	8·11	1959
	1950	0·00	0·00	0·00	0·00	0·00	0·11	0·00	0·11	0·11	0·00	0·00	0·95	0·95	1·06	0·50	0·00	0·00	0·50	1·56	1950
Total, 7 years ...		0·10	0·00	0·62	0·72	6·06	22·28	1·24	29·58	30·30	0·30	0·00	2·54	2·84	33·14	11·75	2·35	0·10	14·20	47·34	
1944–50 Average ...		0·01	0·00	0·09	0·10	0·87	3·18	0·18	4·23	4·33	0·04	0·00	0·36	0·41	4·73	1·68	0·34	0·01	2·03	6·76	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·11	0·00	0·11	0·11	0·00	0·00	0·00	0·00	1·06	0·10	0·00	0·00	0·20	1·56	Minimum (1950)
Maximum		0·10	0·00	0·62	0·62	3·00	5·60	1·24	6·25	6·25	0·30	0·00	1·15	1·45	6·25	3·04	1·20	0·10	4·24	9·58	Maximum (1944)

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
ADAG ...	1945	0·00	0·00	0·00	0·00	0·00	2·10	0·20	2·30	2·30	0·00	0·00	0·15	0·15	2·45	0·00	0·00	0·00	0·00	2·45	1945
	1946	0·55	0·00	0·00	0·55	1·65	0·25	0·30	2·20	2·75	0·00	0·50	0·65	1·15	3·90	1·05	1·15	0·00	2·20	6·10	1946
	1947	0·00	0·00	0·84	0·84	0·74	1·17	0·31	2·22	3·06	0·00	0·00	0·00	0·00	3·06	0·00	2·50	0·00	2·50	5·56	1947
	1948	0·00	0·00	0·00	0·00	3·53	0·55	0·00	4·08	4·08	0·00	0·00	0·00	0·00	4·08	0·65	0·00	0·00	0·65	4·73	1948
	1949	0·50	0·00	0·00	0·50	0·00	1·62	0·16	1·78	2·28	0·00	0·00	0·60	0·60	2·28	0·00	0·40	0·00	0·40	3·28	1949
	1950	0·00	0·00	0·00	0·00	0·00	0·00	0·90	0·90	0·90	0·00	0·00	0·30	0·30	1·20	0·00	0·00	0·00	0·00	1·20	1950
Total, 6 years ...		1·05	0·00	0·84	1·89	5·92	5·69	1·87	13·48	15·37	0·00	0·50	1·70	2·20	17·57	1·60	4·05	0·00	5·75	23·32	
1945–50 Average ...		0·18	0·00	0·14	0·32	0·99	0·95	0·31	2·24	2·56	0·00	0·08	0·28	0·37	2·93	0·27	0·68	0·00	0·96	3·89	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·90	0·90	0·00	0·00	0·00	0·00	1·20	0·00	0·00	0·00	0·00	1·20	Minimum (1950)
Maximum		0·55	0·00	0·84	0·84	3·53	2·10	0·90	4·08	4·08	0·00	0·50	0·65	1·15	4·08	1·05	2·50	0·00	2·50	6·10	Maximum (1946)
EN	1945	0·00	0·00	0·00	0·00	0·00	14·66	3·86	18·52	18·52	0·00	0·00	0·00	0·00	18·25	0·00	0·37	0·00	0·37	18·89	1945
Nogal)	1946	0·36	0·00	0·00	0·36	0·09	0·32	0·00	0·41	0·77	0·00	0·00	0·09	0·09	0·86	3·30	0·00	0·00	3·30	4·16	1946
	1947	0·00	0·00	0·00	0·00	0·20	0·38	0·00	0·58	0·58	0·00	0·00	0·00	0·00	0·58	0·00	0·00	0·00	0·00	0·58	1947
	1948	0·00	0·30	0·00	0·30	0·30	1·58	0·00	1·88	2·18	0·00	0·00	0·00	0·00	2·18	1·10	0·10	0·00	1·20	3·38	1948
	1949	0·00	0·00	0·00	0·00	0·00	0·32	0·00	0·32	0·32	0·00	0·00	0·00	0·00	0·32	0·00	0·65	0·00	0·65	0·97	1949
	1950	0·00	0·00	0·00	0·00	0·00	2·10	0·00	2·10	2·10	0·00	0·00	0·00	0·00	2·10	0·00	0·00	0·00	0·00	2·10	1950
Total, 6 years ...		0·36	0·30	0·00	0·66	0·59	19·36	3·86	23·81	24·47	0·00	0·00	0·09	0·09	24·56	4·40	1·12	0·00	5·52	30·08	
1945–50 Average ...		0·06	0·05	0·00	0·11	0·10	3·23	0·64	(3·97)	(4·08)	0·00	0·00	0·02	0·02	(4·09)	0·73	0·19	0·00	0·92	5·01	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·32	0·00	0·32	0·32	0·00	0·00	0·00	0·00	0·32	0·00	0·00	0·00	0·00	0·58	Minimum (1947)
Maximum		0·36	0·30	0·00	0·36	0·30	14·66	3·86	18·52	18·52	0·00	0·00	0·09	0·09	18·52	3·30	0·65	0·00	3·30	18·89	Maximum (1945)
AFWEIN ...	1944	0·00	0·00	0·40	0·40	1·78	1·20	?	? 2·98	3·38	0·00	0·00	0·77	0·77	4·15	0·00	1·34	0·27	1·61	5·76	1944
	1945	0·00	0·00	0·00	0·00	0·00	2·41	1·97	4·38	4·38	0·00	0·00	0·32	0·32	4·70	0·00	0·96	0·00	0·96	5·66	1945
	1946	1·00	0·00	0·00	1·00	0·30	0·68	0·06	1·04	2·04	0·00	0·23	0·16	0·39	2·43	2·66	0·00	0·00	2·66	5·09	1946
	1947	0·00	0·02	0·00	0·02	0·54	3·10	0·74	4·38	4·40	0·00	0·00	0·85	0·85	5·25	0·71	0·98	0·00	1·69	6·94	1947
	1948	0·00	0·00	0·09	0·09	5·77	0·00	0·00	5·77	5·86	0·00	0·00	0·45	0·45	6·31	0·55	0·35	0·00	0·90	7·21	1948
	1949	0·68	0·00	0·07	0·75	0·06	1·16	1·98	3·20	3·95	0·00	0·15	0·35	0·50	4·45	0·00	0·00	0·25	0·25	4·70	1949
	1950	1·35	0·00	0·00	1·35	0·00	0·06	0·48	0·54	1·89	0·00	0·00	0·21	0·21	2·10	0·00	0·00	0·00	0·00	2·10	1950
Total, 7 years ...		3·03	0·02	0·56	3·61	8·45	8·61	5·23	22·29	25·90	0·00	0·38	3·11	3·49	29·39	3·92	3·63	0·52	8·07	37·46	
1944–50 Average ...		0·43	0·00	0·08	0·52	1·21	1·23	0·75	3·19	3·70	0·00	0·05	0·44	0·50	4·20	0·56	0·52	0·07	1·15	5·35	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·54	1·89	0·00	0·00	0·16	0·21	2·10	0·00	0·00	0·00	0·00	2·10	Minimum (1950)
Maximum		1·35	0·02	0·40	1·35	5·77	3·10	1·98	4·38	5·86	0·00	0·23	0·85	0·85	6·31	2·66	1·34	0·27	2·66	7·21	Maximum (1948)
ALIN) TALEH	1944	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·95	0·95	0·95	0·50	0·20	0·00	0·70	1·65	1944
	1945	0·00	0·00	0·00	0·00	0·00	2·45	0·50	2·95	2·95	0·00	0·00	0·64	0·64	3·59	0·00	0·00	0·00	0·00	3·59	1945
	1946	0·05	0·00	0·00	0·05	1·84	0·21	0·95	3·00	3·05	0·00	0·00	0·09	0·09	3·14	1·75	0·00	0·00	1·75	4·89	1946
	1947	0·00	0·00	0·00	0·00	0·21	1·43	0·00	1·64	1·64	0·00	0·00	0·21	0·21	1·85	0·05	0·00	0·00	0·05	1·90	1947
	1948	0·00	0·00	0·30	0·30	0·06	2·06	0·61	2·73	3·03	0·00	0·00	0·43	0·43	3·46	1·61	0·00	0·00	1·61	5·07	1948
	1949	0·05	0·00	0·13	0·18	0·00	2·42	0·00	2·42	2·60	0·00	0·00	0·42	0·42	3·02	0·23	1·14	0·00	1·37	4·39	1949
	1950	0·00	0·00	0·00	0·00	0·00	0·41	0·00	0·41	0·41	0·00	0·00	0·07	0·07	0·48	0·00	0·00	0·00	0·00	0·48	1950
Total, 7 years ...		0·10	0·00	0·43	0·53	2·11	8·98	2·06	13·15	13·68	0·00	0·00	2·81	2·81	16·49	4·14	1·34	0·00	5·48	21·97	
1944–50 Average ...		0·01	0·00	0·06	0·08	0·30	1·28	0·29	1·88	1·95	0·00	0·00	0·40	0·40	2·36	0·59	0·19	0·00	0·78	3·14	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·21	0·00	0·41	0·00	0·00	0·00	0·07	0·07	0·48	0·00	0·00	0·00	0·00	0·48	Minimum (1950)
Maximum		0·05	0·00	0·30	0·30	1·84	2·45	0·95	3·00	3·05	0·00	0·00	0·95	0·95	3·59	1·75	1·14	0·00	1·75	5·07	Maximum (1948)

NOTE.—Halin 1.1.44—31.12.44

TABLE 5—*continued*

		Jan.	Feb..	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
21. HANAN ...	1944	0·00	0·00	0·00	0·00	0·00	1·00	0·00	1·00	1·00	0·40	0·00	0·42	0·82	1·82	0·00	0·00	5·43	5·43	7·25	1944
	1945	0·00	0·00	0·00	0·00	0·00	1·05	0·00	1·05	1·05	0·00	0·00	0·00	0·00	1·05	0·00	0·00	0·00	0·00	1·05	1945
	1946	0·13	0·00	0·00	0·13	0·00	0·00	0·00	0·00	0·13	0·00	0·10	0·00	0·10	0·23	1·60	0·00	0·00	0·00	1·83	1946
	1947	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	1947
	1948	0·25	0·00	0·60	0·85	0·48	1·50	0·00	1·98	2·83	0·00	0·00	0·00	0·00	2·83	0·15	0·00	0·00	0·15	2·98	1948
Total, 5 years ...		0·38	0·00	0·60	0·98	0·48	3·55	0·00	4·03	5·01	0·40	0·10	0·42	0·92	5·93	1·75	0·00	5·43	7·18	13·11	
1944–48 Average ...		0·08	0·00	0·12	0·20	0·10	0·71	0·00	0·81	1·00	0·08	0·02	0·08	0·18	1·19	0·35	0·00	1·09	1·44	2·62	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	Minimum (1947)
Maximum		0·25	0·00	0·60	0·85	0·48	1·50	0·00	1·98	2·83	0·40	0·10	0·42	0·82	2·83	1·60	0·00	5·43	5·43	7·25	Maximum (1944)
22. DUR ELAN ...	1944	0·00	0·00	0·20	0·20	0·00	2·00	0·00	2·00	2·20	0·00	0·00	0·77	0·77	2·97	0·00	0·00	0·90	0·90	3·87	1944
	1945	0·00	0·00	0·00	0·00	0·00	4·33	0·95	5·28	5·28	0·00	0·17	0·22	0·39	5·67	0·00	0·00	0·00	0·00	5·67	1945
	1946	0·03	0·00	0·06	0·09	1·26	0·68	0·00	1·94	2·03	0·00	0·00	0·29	0·29	2·32	0·00	0·00	0·04	0·04	2·36	1946
	1947	0·00	0·18	0·00	0·18	0·22	0·93	0·00	1·15	1·33	0·00	0·05	0·18	0·23	1·56	0·00	0·13	0·00	0·13	1·69	1947
	1948	0·00	0·00	0·85	0·85	4·28	0·10	0·00	4·38	5·23	0·00	0·00	0·00	0·00	5·23	0·71	0·00	0·00	0·71	5·94	1948
Total, 5 years ...		0·03	0·18	1·11	1·32	5·76	8·04	0·95	14·75	16·07	0·00	0·22	1·46	1·68	17·75	0·71	0·13	0·94	1·78	19·53	
1944–48 Average ...		0·01	0·04	0·22	0·26	1·15	1·61	0·19	2·95	3·21	0·00	0·04	0·29	0·34	3·55	0·14	0·03	0·19	0·36	3·91	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·10	0·00	1·15	1·33	0·00	0·00	0·00	0·00	1·56	0·00	0·00	0·00	0·00	1·69	Minimum (1947)
Maximum		0·03	0·18	0·85	0·85	4·28	4·33	0·95	5·28	5·28	0·00	0·17	0·77	0·77	5·67	0·71	0·13	0·90	0·90	5·94	Maximum (1945)
23. BAWN	1944	0·00	0·00	0·90	0·90	1·91	0·15	0·30	2·36	3·26	0·50	1·60	1·52	3·62	6·88	0·00	0·00	0·00	0·00	6·88	1944
	1945	0·00	0·00	0·00	0·00	0·56	0·59	0·31	1·46	1·46	1·64	3·36	5·29	10·29	11·75	0·30	0·52	0·00	0·82	12·57	1945
	1946	0·00	0·00	0·33	0·33	4·56	1·59	0·00	6·15	6·48	2·61	2·79	2·04	7·44	13·92	0·38	0·00	0·00	0·38	14·30	1946
	1947	0·00	0·74	6·12	6·86	3·77	0·54	0·08	4·39	11·25	1·04	2·09	1·70	4·83	16·08	0·00	1·27	0·08	1·35	17·43	1947
	1948	0·05	1·39	0·00	1·44	2·95	2·67	0·78	6·40	7·84	0·47	0·18	1·48	2·13	9·97	1·53	0·00	0·00	1·53	11·50	1948
	1949	0·00	0·00	0·05	0·05	0·00	1·90	0·89	2·79	2·84	2·48	1·74	1·86	6·08	8·92	0·74	6·16	0·71	7·61	16·53	1949
	1950	0·12	0·15	0·87	1·14	1·61	1·01	0·39	3·01	4·15	0·88	3·39	1·25	5·52	9·67	0·32	0·00	0·00	0·32	9·99	1950
Total, 7 years ...		0·17	2·28	8·27	10·72	15·36	8·45	2·75	26·56	37·28	9·62	15·15	15·14	39·91	77·19	3·27	7·95	0·79	12·01	89·20	
1944–50 Average ...		0·02	0·33	1·18	1·53	2·19	1·21	0·39	3·79	5·33	1·37	2·16	2·16	5·70	11·03	0·47	1·14	0·11	1·72	12·74	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·15	0·00	1·46	1·46	0·47	0·18	1·25	2·13	6·88	0·00	0·00	0·00	0·00	6·88	Minimum (1944)
Maximum		0·12	1·39	6·12	6·86	4·56	2·67	0·89	6·40	11·25	2·61	3·39	5·29	10·29	16·08	1·53	6·16	0·71	7·61	17·43	Maximum (1947)
24. ELAL	1944	0·00	0·00	0·39	0·39	0·20	3·28	0·00	3·48	3·87	0·29	0·00	3·25	3·54	7·41	0·00	0·00	1·21	1·21	8·62	1944
	1945	0·00	0·00	0·00	0·00	0·38	2·13	2·64	5·15	5·15	0·00	0·36	1·80	2·16	7·31	0·00	0·90	0·00	0·90	8·21	1945
	1946	0·14	0·00	0·44	0·58	6·15	1·04	0·00	7·19	7·77	0·00	1·12	0·70	1·82	9·59	3·46	0·10	0·00	3·56	13·15	1946
	1947	0·00	0·30	0·25	0·55	4·89	0·97	0·00	5·86	6·41	0·00	0·35	0·07	0·42	6·83	0·42	0·73	0·00	1·15	7·98	1947
	1948	0·00	0·00	0·90	0·90	5·65	0·70	0·00	6·35	7·25	0·00	0·00	0·15	0·15	7·40	1·14	2·70	0·00	3·84	11·24	1948
	1949	0·00	0·00	2·19	2·19	0·00	3·44	0·55	3·99	6·18	0·00	0·17	0·87	1·04	7·22	0·00	0·83	1·36	2·19	9·41	1949
	1950	1·45	0·00	0·10	1·55	0·00	0·38	0·18	0·56	2·11	0·00	0·54	0·77	1·31	3·42	0·00	0·00	0·00	0·00	3·42	1950
Total, 7 years ...		1·59	0·30	4·27	6·16	17·27	11·94	3·37	32·58	38·74	0·29	2·54	7·61	10·44	49·18	5·02	5·26	2·57	12·85	62·03	
1944–50 Average ...		0·23	0·04	0·61	0·88	2·47	1·71	0·48	4·65	5·53	0·04	0·36	1·09	1·49	7·03	0·72	0·75	0·37	1·84	8·86	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·38	0·00	0·56	2·11	0·00	0·00	0·07	0·15	3·42	0·00	0·00	0·00	0·00	3·42	Minimum (1950)
Maximum		1·45	0·30	2·19	2·19	6·15	3·44	2·64	7·19	7·77	0·29	1·12	3·25	3·54	9·59	3·46	2·70	1·36	3·84	13·15	Maximum (1946)

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
DALOH ...	1945	0·00	0·00	0·00	0·00	0·00	6·97	1·90	8·87	8·87	2·21	9·16	19·67	31·04	39·91	0·71	0·49	0·00	1·20	41·11	194
	1946	0·09	0·00	0·14	0·23	7·69	5·23	0·00	12·92	13·15	0·00	0·24	5·11	5·35	18·50	1.79	0·34	0·00	2·13	20·63	1946
	1947	0·00	0·00	1·65	1·65	5·90	4·14	7·52	17·56	19·21	0·00	2·04	6·88	8·92	28·13	3·09	0·00	0·00	3·09	31·22	1947
	1948	0·00	0·00	0·00	0·00	5·48	4·14	3·17	12·79	12·79	2·19	0·33	10·27	12·79	25·58	1·46	0·00	0·00	1·46	27·04	1948
	1949	0·00	0·00	0·39	0·39	0·00	12·34	19·00	31·34	31·73	1·55	7·59	4·11	13·25	44·98	2·63	0·68	1·97	5·28	50·26	1949
	1950	3·75	0·00	0·00	3·75	0·00	3·90	4·19	8·09	11·84	0·00	9·68	4·97	14·65	26·49	0·00	0·00	0·00	0·00	26·49	1950
Total, 6 years ...		3·84	0·00	2·18	6·02	19·07	36·72	35·78	91·57	97·59	5·95	29·04	51·01	86·00	183·59	9·68	1·51	1·97	13·16	196·75	
1945–50 Average ...		0·64	0·00	0·36	1·00	3·18	6·12	5·96	15·26	16·27	0·99	4·84	8·50	14·33	30·60	1.61	0·25	0·33	2·19	32·79	Average
Minimum		0·00	0·00	0·00	0·00	0·00	3·90	0·00	8·09	8·87	0·00	0·24	4·11	5·35	18·50	0·00	0·00	0·00	0·00	20·63	Minimum (1946)
Maximum		3·75	0·00	1·65	3·75	7·69	12·34	19·00	31·34	31·73	2·21	9·68	19·67	31·04	44·98	3·09	0·68	1·97	5·28	50·26	Maximum (1949)
BURAO	1944	0·00	0·00	0·30	0·30	0·00	2·27	0·00	2·27	2·57	0·00	0·67	1·72	2·39	4·96	0·00	0·00	0·00	0·00	4·96	1944
	1945	0·00	0·00	0·00	0·00	0·00	2·12	0·77	2·89	2·89	0·00	0·34	0·64	0·98	3·87	0·70	1·12	0·00	1·82	5·69	1945
	1946	0·01	0·00	0·00	0·01	2·88	0·86	1·26	5·00	5·01	0·96	0·78	1·94	3·68	8·69	1·32	0·09	0·00	1·41	10·10	1946
	1947	0·00	0·00	0·18	0·18	1·15	1·49	0·28	2·92	3·10	0·12	0·38	2·04	2·54	5·64	0·02	0·03	0·00	0·05	5·69	1947
	1948	0·00	0·00	0·00	0·00	1·55	0·02	0·77	2·34	2·34	0·25	0·31	0·11	0·67	3·01	1·58	0·00	0·00	1·58	4·59	1948
	1949	0·00	0·01	0·61	0·62	0·00	2·03	0·90	2·93	3·55	0·05	1·63	1·24	2·92	6·47	0·28	0·11	0·33	0·72	7·19	1949
	1950	0·15	0·00	0·00	0·15	0·00	0·16	0·65	0·81	0·96	0·02	0·28	0·48	0·78	1·74	0·15	0·00	0·00	0·15	1·89	1950
Total, 7 years ...		0·16	0·01	1·09	1·26	5·58	8·95	4·63	19·16	20·42	1·40	4·39	8·17	13·96	34·38	4·05	1·35	0·33	5·73	40·11	
1944–50 Average ...		0·02	0·00	0·16	0·18	0·80	1·28	0·66	2·74	2·92	0·20	0·63	1·17	1·99	4·91	0·58	0·19	0·05	0·82	5·73	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·02	0·00	0·81	0·96	0·00	0·28	0·11	0·67	1·74	0·00	0·00	0·00	0·00	1·89	Minimum (1950)
Maximum		0·15	0·01	0·61	0·62	2·88	2·27	1·26	5·00	5·01	0·96	1·63	2·04	3·68	8·69	1·58	1·12	0·33	1·82	10·10	Maximum (1946)
MANJA ASSEH BIHENDULA	1946	0·10	0·00	0·30	0·40	1·84	1·89	0·00	3·73	4·13	0·00	0·00	0·00	0·00	4·13	6·20	0·00	0·00	6·20	10·33	1946
	1947	0·00	0·03	1·57	1·60	0·51	3·54	0·00	4·05	5·65	0·54	0·60	0·20	1·34	6·99	0·05	0·00	0·00	0·05	7·04	1947
	1948	0·00	0·00	0·20	0·20	6·97	1·50	0·90	9·37	9·57	0·00	0·00	0·00	0·00	9·57	4·47	0·00	0·00	4·47	14·04	1948
	1949	0·00	0·96	0·54	1·50	0·00	3·59	0·20	3·79	5·29	0·00	0·50	1·50	2·00	7·29	1·40	3·73	4·11	9·24	16·53	1949
	1950	0·60	0·05	0·00	0·65	0·14	0·75	0·09	0·98	1·63	0·10	0·81	0·35	1·26	2·89	0·00	0·00	0·00	0·00	2·89	1950
Total, 5 years ...		0·70	1·04	2·61	4·35	9·46	11·27	1·19	21·92	26·27	0·64	1·91	2·05	4·60	30·87	12·12	3·73	4·11	19·96	50·83	
1946–50 Average ...		0·14	0·21	0·52	0·87	1·89	2·25	0·24	4·38	5·25	0·13	0·38	0·41	0·92	6·17	2·42	0·75	0·82	3·99	10·17	Average
Minimum		0·00	0·00	0·00	0·20	0·00	0·75	0·00	0·98	1·63	0·00	0·00	0·00	0·00	2·89	0·00	0·00	0·00	0·00	2·89	Minimum (1950)
Maximum		0·60	0·96	1·57	1·60	6·97	3·59	0·90	9·37	9·57	0·54	0·81	1·50	2·00	9·57	6·20	3·73	4·11	9·24	16·53	Maximum (1949)
NOTE.—Manja Asseh 1.1.46–31.12.46 ; 1944 and 1945 not reliable.																					
SILIL	1945	0·00	0·23	0·00	0·23	0·00	0·04	0·01	0·05	0·28	0·00	0·00	0·68	0·68	0·96	0·15	0·47	0·12	0·74	1·70	1945
	1946	0·00	0·00	? 0·00	? 0·00	1·45	0·20	0·00	1·65	1·65	0·00	0·40	0·00	0·40	2·05	0·00	0·10	0·00	0·10	2·15	1946
	1947	0·00	0·22	0·21	0·43	0·00	0·95	0·00	0·95	1·38	0·00	0·30	0·00	0·30	1·68	0·00	1·08	0·10	1·18	2·86	1947
	1948	0·20	0·03	0·00	0·23	0·00	0·00	0·00	0·00	0·23	0·00	0·08	0·20	0·28	0·51	0·13	0·00	0·21	0·34	0·85	1948
	1949	0·53	0·19	0·50	1·22	0·00	0·02	0·00	0·02	1·24	0·06	0·37	0·10	0·53	1·77	0·06	2·07	2·99	5·12	6·89	1949
	1950	2·20	0·85	0·00	3·05	0·00	0·00	0·00	0·00	3·05	1·45	0·44	0·00	1·89	4·94	0·06	0·00	0·00	0·06	5·00	1950
Total, 6 years ...		2·93	1·52	0·71	5·16	1·45	1·21	0·01	2·67	7·83	1·51	1·59	0·98	4·08	11·91	0·40	3·72	3·42	7·54	19·45	
1945–50 Average ...		0·49	0·25	0·12	0·86	0·24	0·20	0·00	0·45	1·31	0·25	0·27	0·16	0·68	1·99	0·07	0·62	0·57	1·26	3·26	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·23	0·00	0·00	0·00	0·28	0·51	0·00	0·00	0·00	0·06	0·85	Minimum (1948)
Maximum		2·20	0·85	0·50	3·05	1·45	0·95	0·01	1·65	3·05	1·45	0·44	0·68	1·89	4·94	0·15	2·07	2·99	5·12	6·89	Maximum (1949)

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
29. ABDAL QADR ...	1945	0·06	0·00	0·00	0·06	0·00	0·17	0·00	0·21	0·27	0·75	4·77	4·39	9·91	10·18	0·00	0·30	0·00	0·30	10·48	1945
	1946	0·00	0·00	3·00	3·00	4·00	0·20	? 0·00	4·20	7·20	2·30	1·70	1·70	5·70	12·90	0·00	0·59	0·00	0·59	13·49	1946
	1947	0·00	1·45	2·15	3·60	0·00	? 0·00	0·90	0·90	4·50	0·00	2·90	2·00	4·90	9·40	0·00	0·86	? 0·00	0·86	10·26	1947
	1948	0·08	1·87	? 0·00	1·95	3·62	2·50	? 0·00	6·12	8·07	0·00	0·90	0·37	1·27	9·34	1·25	0·00	0·00	1·25	10·59	1948
	1949	0·00	0·00	0·00	0·00	0·00	0·19	0·77	0·96	0·96	1·58	1·13	1·38	4·09	5·05	? 0·00	? 3·00	? 0·00	? 3·00	8·05	1949
?Total, 5 years ...		0·14	3·32	5·15	8·61	7·62	3·06	1·71	12·39	21·00	4·63	11·40	9·84	25·87	46·87	1·25	4·75	0·00	6·00	52·87	
1945–49 Average ...		0·03	0·66	1·03	1·72	1·52	0·61	0·34	2·48	4·20	0·93	2·28	1·97	5·17	9·37	0·25	0·95	0·00	1·20	10·57	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·21	0·27	0·00	0·90	0·37	1·27	5·05	0·00	0·00	0·00	0·30	8·05	Minimum (1949)
Maximum		0·08	1·87	3·00	3·60	4·00	2·50	0·90	6·12	8·07	2·30	4·77	4·39	9·91	12·90	1·25	3·00	0·00	3·00	13·49	Maximum (1946)
(NOTE.—Not reliable in any year)																					
30. SHEIKH ...	1944	0·00	0·00	0·93	0·93	0·50	3·73	0·03	4·26	5.19	2·30	1·15	3·09	6·54	11·73	0·00	0·00	0·61	0·61	12·34	1944
	1945	0·00	0·13	0·01	0·14	0·00	6·14	2·21	8·35	8·49	0·88	1·09	3·55	5·52	14·01	1·92	1·57	0·00	3·49	17·50	1945
	1946	0·48	0·00	0·11	0·59	6·78	3·12	1·20	11·10	11·69	0·60	2·41	2·36	5·37	17·06	3·22	0·79	0·00	4·01	21·07	1946
	1947	0·00	0·05	0·91	0·96	4·41	1·56	1·28	7·25	8·21	0·27	0·95	1·43	2·65	10·86	2·35	1·74	2·20	6·29	17·15	1947
	1948	0·14	0·00	0·01	0·15	5·87	2·03	6·65	14·55	14·70	0·00	0·33	2·82	3·15	17·85	5·68	0·49	0·00	6·17	24·02	1948
	1949	0·11	0·50	1·98	2·59	2·78	2·98	0·80	6·56	9·15	0·59	3·53	1·23	5·35	14·50	2·17	1·94	3·12	7·23	21·73	1949
	1950	0·17	0·05	0·03	0·25	1·30	1·32	1·96	4·58	4·83	1·67	0·97	1·70	4·34	9·17	2·97	0·00	0·00	2·97	12·14	1950
Total, 7 years ...		0·90	0·73	3·98	5·61	21·64	20·88	14·13	56·65	62·26	6·31	10·43	16·18	32·92	95·18	18·31	6·53	5·93	30·77	125·95	
1944–50 Average ...		0·13	0·10	0·57	0·80	3·09	2·98	2·02	8·09	8·89	0·90	1·49	2·31	4·70	13·60	2·62	0·93	0·85	4·40	17·99	Average
Minimum		0·00	0·00	0·01	0·14	0·00	1·32	0·03	4·26	4·83	0·00	0·33	1·23	2·65	9·17	0·00	0·00	0·00	0·61	12·14	Minimum (1950)
Maximum		0·48	0·50	1·98	2·59	6·78	6·14	6·65	14·55	14·70	2·30	2·41	3·55	6·54	17·85	5·68	1·94	3·12	7·23	24·02	Maximum (1948)
31. BERBERA (R.A.F.)	1944	0·00	0·00	0·10	0·10	0·00	0·00	0·00	0·00	0·10	0·00	0·00	0·00	0·00	0·10	0·00	0·00	0·00	0·00	0·10	1944
	1945	0·30	0·03	0·11	0·44	0·06	0·30	0·87	1·23	1·67	0·00	0·09	0·00	0·09	1·76	0·00	0·00	0·00	0·00	1·76	1945
	1946	0·04	0·00	0·00	0·04	0·79	0·13	0·00	0·92	0·96	0·00	0·07	0·00	0·07	1·03	0·00	0·00	0·00	0·00	1·03	1946
	1947	0·00	0·00	0·01	0·01	0·00	0·02	0·00	0·02	0·03	0·00	0·04	0·00	0·04	0·07	0·00	0·00	0·00	0·00	0·07	1947
	1948	0·00	0·00	0·00	0·00	2·38	0·00	0·00	2·38	2·38	0·00	0·00	0·00	0·00	2·38	0·15	0·31	0·00	0·46	2·84	1948
	1949	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·19	0·73	0·92	0·92	0·00	0·00	2·67	2·67	3·59	1949
	1950	2·57	0·00	0·00	2·57	0·00	0·00	0·00	0·00	2·57	0·00	0·63	0·58	1·21	3·78	0·00	0·00	0·01	0·01	3·79	1950
Total, 7 years ...		2·91	0·03	0·22	3·16	3·23	0·45	0·87	4·55	7·71	0·00	1·02	1·31	2·33	10·04	0·15	0·31	2·68	3·14	13·18	
1944–50 Average ...		0·42	0·00	0·03	0·45	0·46	0·06	0·12	0·65	1·10	0·00	0·15	0·19	0·33	1·43	0·02	0·04	0·38	0·45	1·88	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·07	0·00	0·00	0·00	0·00	0·07	Minimum (1947)
Maximum		2·57	0·03	0·11	2·57	2·38	0·30	0·87	2·38	2·57	0·00	0·63	0·73	1·21	3·78	0·15	0·31	2·67	2·67	3·79	Maximum (1950)
NOTE.—Observers withdrawn without warning on 14.12.50 : D.C. reports only 5-minute shower between 14.12.50 and 31.12.50 on December 25th, estimated by me at 0·01. J. A. H.																					
32. HARGEISA	1944	0·00	0·00	0·67	0·67	0·15	2·44	2·84	5·43	6·10	1·60	3·13	1·36	6·09	12·19	0·00	0·25	0·00	0·25	12·44	1944
(R.A.F.)	1945	0·00	0·00	0·00	0·00	0·00	3·15	2·12	5·27	5·27	1·40	3·62	3·19	8·21	13·48	0·16	0·83	0·00	0·99	14·47	1945
	1946	0·03	0·00	0·00	0·03	5·06	1·19	3·14	9·39	9·42	1·70	3·09	0·83	5·62	15·04	1·83	0·18	0·00	2·01	17·05	1946
	1947	0·00	0·00	3·59	3·59	3·76	0·57	2·53	6·86	10·45	2·39	4·57	3·93	10·89	21·34	0·00	0·00	0·00	0·00	21·34	1947
	1948	0·00	0·09	0·41	0·50	3·56	1·31	2·47	7·34	7·84	0·90	1·20	3·33	5·43	13·27	2·20	0·15	0·00	2·35	15·62	1948
	1949	0·05	0·04	0·00	0·09	0·00	3·35	1·53	4·88	4·97	0·44	3·85	0·83	5·12	10·09	0·15	0·32	0·46	0·93	11·02	1949
	1950	0·00	0·04	0·00	0·04	0·04	2·16	2·47	4·67	4·71	?2·04	3·87	5·43	11·34	16·05	0·00	0·00	0·00	0·00	16·05	1950
Total, 7 years ...		0·08	0·17	4·67	4·92	12·57	14·17	17·10	43·84	48·76	10·47	23·33	18·90	52·70	101·46	4·34	1·73	0·46	6·53	107·99	
1944–50 Average ...		0·01	0·02	0·67	0·70	1·80	2·02	2·44	6·26	6·97	1·50	3·33	2·70	7·53	14·49	0·62	0·25	0·07	0·93	15·43	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·57	1·53	4·67	4·71	0·44	1·20	0·83	5·12	10·09	0·00	0·00	0·00	0·00	11·02	Minimum (1949)
Maximum		0·05	0·09	3·59	3·59	5·06	3·35	3·14	9·39	10·45	2·39	4·57	5·33	11·34	21·34	2·20	0·83	0·46	2·35	21·34	Maximum (1947)
NOTE.—On new landing ground at 4,500 ft., except for 19.7.50–31.12.50 on old L.G. in valley at 4,100 ft.																					

TABLE 5—*continued*

	Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
33. HARGEISA S.A.O. 1947	0·00	0·00	3·87	3·87	2·86	0·57	2·44	5·87	9·74	2·02	2·66	1·12	5·80	15·54	0·00	0·21	0·00	0·21	15·75	1947
1948	0·00	0·00	0·28	0·28	2·12	0·83	2·57	5·52	5·80	0·88	1·78	3·00	5·66	11·46	0·55	0·00	0·00	0·55	12·01	1948
1949	0·00	0·00	0·02	0·02	0·00	3·46	1·15	4·61	4·63	0·15	2·13	1·91	4·19	8·82	0·84	1·10	0·30	2·24	11·06	1949
Total, 3 years ...	0·00	0·00	4·17	4·17	4·98	4·86	6·16	16·00	20·17	3·05	6·57	6·03	15·65	35·82	1·39	1·31	0·30	3·00	38·82	
1947–49 Average ...	0·00	0·00	1·39	1·39	1·66	1·62	2·05	5·33	6·72	1·01	2·19	2·01	5·22	11·94	0·46	0·44	0·10	1·00	12·94	Average
Minimum	0·00	0·00	0·02	0·02	0·00	0·57	1·15	4·61	4·63	0·15	1·78	1·12	4·19	8·82	0·00	0·00	0·00	0·21	11·06	Minimum (1949)
Maximum	0·00	0·00	3·87	3·87	2·86	3·46	2·57	5·87	9·74	2·02	2·66	3·00	5·80	15·54	0·84	1·10	0·30	2·24	15·75	Maximum (1947)
34. HARGEISA D.C. 1947	0·00	0·00	5·72	5·72	3·00	0·61	2·23	5·84	11·56	2·36	2·58	1·09	6·03	17·59	0·00	0·00	0·00	0·00	17·59	1947
1948	0·00	0·00	0·27	0·27	1·83	0·72	2·10	4·65	4·92	0·88	1·83	3·07	5·78	10·70	0·48	0·00	0·00	0·48	11·18	1948
1949	0·00	0·00	0·06	0·06	0·00	3·16	1·31	4·47	4·53	0·67	2·40	1·49	4·56	9·09	0·44	1·39	0·29	2·12	11·21	1949
Total, 3 years ...	0·00	0·00	6·05	6·05	4·83	4·49	5·64	14·96	21·01	3·91	6·81	5·65	16·37	37·38	0·92	1·39	0·29	2·60	39·98	
1947–49 Average ...	0·00	0·00	2·02	2·02	1·61	1·49	1·88	4·99	7·00	1·30	2·27	1·88	5·46	12·46	0·31	0·46	0·10	0·87	13·33	Average
Minimum	0·00	0·00	0·06	0·06	0·00	0·61	1·31	4·47	4·53	0·67	1·83	1·09	4·56	9·09	0·00	0·00	0·00	0·00	11·18	Minimum (1948)
Maximum	0·00	0·00	5·72	5·72	3·00	3·16	2·23	5·84	11·56	2·36	2·58	3·07	6·03	17·59	0·48	1·39	0·29	2·12	17·59	Maximum (1947)
35. GALKAYU ... 1945	0·00	0·00	0·00	0·00	0·00	3·72	0·75	4·47	4·47	0·00	0·00	0·00	0·00	4·47	1·14	0·00	0·00	1·14	5·61	1945
1946	0·00	0·00	0·00	0·00	2·31	2·13	0·27	4·71	4·71	0·04	0·00	0·28	0·32	5·03	1·10	0·00	0·00	1·10	6·13	1946
1947	0·00	0·00	0·00	0·00	0·08	2·27	0·00	2·35	2·35	0·00	0·12	0·00	0·12	2·47	0·31	0·08	0·00	0·39	2·86	1947
1948	0·00	0·12	0·00	0·12	0·02	2·79	0·00	2·81	2·93	0·00	0·00	0·00	0·00	2·93	2·40	0·14	0·00	2·54	5·47	1948
1949	0·00	0·00	0·00	0·00	0·00	0·46	0·00	0·46	0·46	0·00	0·00	0·00	0·00	0·46	0·81	0·00	0·05	0·86	1·32	1949
Total, 5 years ...	0·00	0·12	0·00	0·12	2·41	11·37	1·02	14·80	14·92	0·04	0·12	0·28	0·44	15·36	5·76	0·22	0·05	6·03	21·39	
1945–49 Average ...	0·00	0·02	0·00	0·02	0·48	2·27	0·20	2·96	2·98	0·01	0·02	0·06	0·09	3·07	1·15	0·04	0·01	1·21	4·28	Average
Minimum	0·00	0·00	0·00	0·00	0·00	0·46	0·00	0·46	0·46	0·00	0·00	0·00	0·00	0·46	0·31	0·00	0·00	0·39	1·32	Minimum (1949)
Maximum	0·00	0·12	0·00	0·12	2·31	3·72	0·75	4·71	4·71	0·04	0·12	0·28	0·32	5·03	2·40	0·14	0·05	2·54	6·13	Maximum (1946)
36. QABRI DAHARE 1945	0·00	0·00	0·00	0·00	0·00	3·26	0·23	3·49	3·49	0·15	0·00	0·00	0·15	3·64	1·20	0·70	0·10	2·00	5·64	1945
1946	0·00	0·00	0·00	0·00	2·79	1·10	0·00	3·89	3·89	0·02	0·23	0·21	0·46	4·35	4·73	1·47	0·00	6·20	10·55	1946
1947	0·00	0·00	0·59	0·59	2·81	6·17	0·00	8·98	9·57	0·00	0·00	0·00	0·00	9·57	5·42	0·49	0·03	5·94	15·51	1947
Total, 3 years ...	0·00	0·00	0·59	0·59	5·60	10·53	0·23	16·36	16·95	0·17	0·23	0·21	0·61	17·56	11·35	2·66	0·13	14·14	31·70	
1945–47 Average ...	0·00	0·00	0·20	0·20	1·87	3·51	0·07	5·45	5·65	0·06	0·08	0·07	0·20	5·85	3·78	0·89	0·04	4·71	10·57	Average
Minimum	0·00	0·00	0·00	0·00	0·00	1·10	0·00	3·49	3·49	0·00	0·00	0·00	0·00	3·64	1·20	0·49	0·00	2·00	5·64	Minimum (1945)
Maximum	0·00	0·00	0·59	0·59	2·81	6·17	0·23	8·98	9·57	0·15	0·23	0·21	0·46	9·57	5·42	1·47	0·10	6·20	15·51	Maximum (1947)
37. ZEILA 1947	0·00	0·05	0·00	0·05	0·00	0·90	0·00	0·90	0·95	0·00	0·00	0·00	0·00	0·95	0·00	1·12	0·26	1·38	2·33	1947
1948	0·03	0·00	0·60	0·63	0·02	0·00	0·00	0·02	0·65	0·00	0·00	0·00	0·00	0·65	0·65	0·12	0·00	0·77	1·42	1948
1949	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·02	0·00	0·00	0·02	0·02	0·00	2·35	0·80	3·15	3·17	1949
1950	0·70	0·00	0·00	0·70	0·08	0·00	0·00	0·08	0·78	1·35	0·00	0·00	1·35	2·13	0·18	0·00	0·00	0·18	2·31	1950
Total, 4 years ...	0·73	0·05	0·60	1·38	0·10	0·90	0·00	1·00	2·38	1·37	0·00	0·00	1·37	3·75	0·83	3·59	1·06	5·48	9·23	
1947–50 Average ...	0·18	0·01	0·15	0·35	0·03	0·23	0·00	0·25	0·60	0·34	0·00	0·00	0·34	0·94	0·21	0·90	0·27	1·37	2·31	Average
Minimum	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·02	0·00	0·00	0·00	0·18	1·42	Minimum (1948)
Maximum	0·70	0·05	0·60	0·70	0·02	0·90	0·00	0·90	0·95	1·35	0·00	0·00	1·35	2·13	0·65	2·35	0·80	3·15	3·17	Maximum (1949)

TABLE 5—*continued*

	Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
38. MANDERA ... 1947	0·00	0·00	0·00	0·00	0·00	1·35	0·72	2·07	2·07	0·99	0·00	0·00	0·99	3·06	1·55	0·00	0·00	1·55	4·61	1947
1948	0·00	0·06	2·26	2·32	4·72	2·11	0·60	7·43	9·75	0·18	0·00	2·12	2·30	12·05	4·06	0·17	0·00	4·23	16·28	1948
1949	0·05	0·00	1·78	1·83	0·05	4·95	0·84	5·84	7·67	0·59	2·14	1·08	3·81	11·48	1·42	3·26	3·35	8·03	19·51	1949
1950	1·60	0·00	0·06	1·66	1·37	2·99	0·40	4·76	6·42	2·20	2·43	4·75	9·38	15·80	0·25	0·00	0·00	0·25	16·05	1950
Total, 4 years ...	1·65	0·06	4·10	5·81	6·14	11·40	2·56	20·10	25·91	3·96	4·57	7·95	16·48	42·39	7·28	3·43	3·35	14·06	56·45	
1947–50 Average ...	0·41	0·02	1·03	1·45	1·54	2·85	0·64	5·03	6·48	0·99	1·14	1·99	4·12	10·60	1·82	0·86	0·84	3·52	14·11	Average
Minimum	0·00	0·00	0·00	0·00	0·00	1·35	0·40	2·07	2·07	0·18	0·00	0·00	0·99	3·06	0·25	0·00	0·00	0·25	4·61	Minimum (1947)
Maximum	1·60	0·06	2·26	2·32	4·72	4·95	0·84	7·43	9·75	2·20	2·43	4·75	9·38	15·80	4·06	3·26	3·35	8·03	19·51	Maximum (1949)
39. BORAMA ... 1947	0·00	0·93	4·18	5·11	4·07	4·38	0·82	9·27	14·38	2·03	2·62	2·83	7·48	21·86	0·00	0·75	0·00	0·75	22·61	1947
1948	1·68	0·81	0·14	2·63	4·70	0·29	0·76	5·75	8·38	1·72	1·32	3·08	6·12	14·50	1·25	0·12	0·00	1·37	15·87	1948
1949	0·00	0·00	0·24	0·24	0·16	1·49	1·76	3·41	3·65	3·25	5·71	3·98	12·94	16·59	0·32	2·19	0·59	3·10	19·69	1949
1950	0·56	0·00	0·00	0·56	0·68	1·75	1·50	3·93	4·49	2·95	4·84	4·91	12·70	17·19	0·00	0·00	0·00	0·00	17·19	1950
Total, 4 years ...	2·24	1·74	4·56	8·54	9·61	7·91	4·84	22·36	30·90	9·95	14·49	14·80	39·24	70·14	1·57	3·06	0·59	5·22	75·36	
1947–50 Average ...	0·56	0·44	1·14	2·14	2·40	1·98	1·21	5·59	7·73	2·49	3·62	3·70	9·81	17·54	0·39	0·77	0·15	1·31	18·84	Average
Minimum	0·00	0·00	0·00	0·24	0·16	0·29	0·76	3·41	3·65	1·72	1·32	2·83	6·12	14·59	0·00	0·00	0·00	0·00	15·87	Minimum (1948)
Maximum	1·68	0·93	4·18	5·11	4·70	4·38	1·76	9·27	14·38	3·25	5·71	4·91	12·94	21·86	1·25	2·19	0·59	3·10	22·61	Maximum (1947)
40. ERIGAVO ... 1947	0·95	0·30	1·24	2·49	0·40	3·13	2·34	5·87	8·36	0·00	0·00	3·77	3·77	12·13	0·00	0·11	0·00	0·11	12·24	1947
1948	0·00	0·00	0·50	0·50	3·82	2·59	1·84	8·25	8·75	1·00	0·40	2·25	3·65	12·40	0·86	0·00	0·00	0·86	13·26	1948
1949	0·00	0·00	0·36	0·36	0·40	0·00	2·00	2·40	2·76	1·24	3·30	4·13	8·67	11·43	0·00	0·39	0·11	0·50	11·93	1949
1950	3·67	0·00	? 0·00	3·67	? 0·00	0·86	? 3·75	4·61	8·28	0·00	5·75	7·24	12·99	21·27	0·36	0·00	0·00	0·36	21·63	1950
Total, 4 years ...	4·62	0·30	2·10	7·02	4·62	6·58	9·93	21·13	28·15	2·24	9·45	17·39	29·08	57·23	1·22	0·50	0·11	1·83	59·06	
1947–50 Average ...	1·16	0·08	0·53	1·76	1·16	1·65	2·48	5·28	7·04	0·56	2·36	4·35	7·27	14·31	0·31	0·12	0·03	0·46	14·77	Average
Minimum	0·00	0·00	0·00	0·36	0·00	0·00	1·84	2·40	2·76	0·00	0·00	2·25	3·65	11·43	0·00	0·00	0·00	0·11	11·93	Minimum (1949)
Maximum	3·67	0·30	1·24	3·67	3·82	3·13	3·75	8·24	8·75	1·24	5·75	7·24	12·99	21·27	0·86	0·39	0·11	0·86	21·63	Maximum (1950)
41. LAS DUREH ... 1948	0·00	0·27	0·00	0·27	1·96	1·15	0·18	3·29	3·56	0·00	0·00	0·32	0·32	3·88	0·30	0·42	0·00	0·72	4·60	1948
1949	0·00	0·11	0·09	0·20	0·14	0·20	0·00	0·34	0·54	0·00	0·14	0·29	0·43	0·97	1·87	0·70	0·80	3·37	4·34	1949
1950	0·76	0·00	0·20	0·96	0·00	0·23	0·00	0·23	1·19	0·00	0·20	1·30	1·50	2·69	0·00	0·00	0·00	0·00	2·69	1950
Total, 3 years ...	0·76	0·38	0·29	1·43	2·10	1·58	0·18	3·86	5·29	0·00	0·34	1·91	2·25	7·54	2·17	1·12	0·80	4·09	11·63	
1948–50 Average ...	0·25	0·13	0·09	0·48	0·70	0·53	0·06	1·29	1·76	0·00	0·11	0·64	0·75	2·51	0·72	0·37	0·27	1·36	3·88	Average
Minimum	0·00	0·00	0·00	0·20	0·00	0·20	0·00	0·23	0·54	0·00	0·00	0·29	0·32	0·97	0·00	0·00	0·00	0·00	2·69	Minimum (1950)
Maximum	0·76	0·27	0·20	0·96	1·96	1·15	0·18	3·29	3·56	0·00	0·20	1·30	1·50	3·88	1·87	0·70	0·80	3·37	4·60	Maximum (1948)
42. ADADLEH ... 1944	0·00	0·00	1·30	1·30	2·20	2·05	0·80	5·05	6·35	3·75	0·00	4·85	8·60	14·95	0·00	0·00	0·00	0·00	14·95	1944
1945	0·00	0·00	0·00	0·00	0·00	2·69	0·80	3·49	3·49	0·30	3·20	2·80	6·30	9·79	0·00	0·90	0·00	0·90	10·69	1945
43. BOHOTLEH ... 1944	0·00	0·00	0·00	0·00	0·43	4·85	0·00	5·28	5·28	0·00	0·00	0·25	0·25	5·53	0·42	0·63	0·00	1·05	6·58	1944

TABLE 5—*continued*

		Jan.	Feb.	Mar.	First Quarter	Apr.	May	June	Second Quarter	Jan.–June	July	Aug.	Sept.	Third Quarter	Jan.–Sept.	Oct.	Nov.	Dec.	Fourth Quarter	Whole Year	
4. Bosaso (R.A.F.)	1944	0·04	0·00	0·00	0·04	0·00	0·00	0·00	0·00	0·04	0·00	0·00	0·00	0·00	0·04	0·30	0·00	0·90	1·20	1·24	1944
	1945	0·00	0·00	0·00	0·00	0·00	0·00	0·04	0·04	0·04	0·00	0·00	0·00	0·00	0·04	0·00	0·00	0·00	0·10	0·14	1945
	1946	0·04	0·00	0·00	0·04	0·00	0·00	0·00	0·00	0·04	0·00	0·00	0·00	0·00	0·04	0·00	—	—	—	—	1946
Total, 2–3 years	...	0·08	0·00	0·00	0·08	0·00	0·00	0·04	0·04	0·12	0·00	0·00	0·00	0·00	0·12	0·30	0·10	0·90	1·30	1·38	
1944–46 Average	...	0·03	0·00	0·00	0·03	0·00	0·00	0·01	0·01	0·04	0·00	0·00	0·00	0·00	0·04	0·10	0·05	0·45	0·65	0·69	Average
Minimum		0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·04	0·00	0·00	0·00	0·00	0·04	0·00	0·00	0·00	0·10	0·14	Minimum (1945)
Maximum		0·04	0·00	0·00	0·04	0·00	0·00	0·04	0·04	0·04	0·00	0·00	0·00	0·00	0·04	0·30	0·10	0·90	1·20	1·24	Maximum (1944)
5. Isskushuban (R.A.F.)	1944	0·00	0·00	0·00	0·00	0·65	0·12	0·08	0·85	0·85	0·00	0·00	1·18	1·18	2·03	0·00	0·05	0·42	0·47	2·50	1944
	1945	0·14	0·04	0·00	0·18	0·00	0·38	—	—												
6. Jigjigga ...	1947	—	0·00	rain	rain	rain	0·35	1·55	1·90+	1·90+	2·33	4·05	2·80	9·18	11·08+	0·08	3·51	0·00	3·59	14·67+	1947
7. Jibuti	1944	0·00	0·01	0·02	0·03	1·01	0·00	0·00	1·01	1·04	0·58	0·00	0·00	0·58	1·62	0·00	0·00	0·82	0·82	2·44	1944
	1945	0·04	0·01	0·08	0·13	0·00	0·17	0·00	0·17	0·30	0·00	0·00	0·00	0·00	0·30	1·87	5·31	0·14	7·32	7·62	1945
	1946	0·00	0·04	1·66	1·70	0·12	1·06	0·00	1·18	2·88	0·03	0·13	0·14	0·30	3·18	0·22	3·22	0·00	3·44	6·62	1946
	1947	0·06	0·76	0·00	0·82	0·01	0·33	0·00	0·34	1·16	0·00	0·75	0·00	0·75	1·91	0·06	0·46	0·95	1·47	3·38	1947
	1948	0·43	1·19	0·81	2·43	0·02	0·13	0·00	0·15	2·58	0·00	0·00	0·00	0·00	2·58	1·62	0·06	0·24	1·92	4·50	1948
	1949	0·30	0·20	0·00	0·50	0·00	0·01	0·00	0·01	0·51	0·86	0·00	0·02	0·88	1·39	0·00	0·87	1·13	2·00	3·39	1949
Total, 6 years	...	0·83	2·21	2·57	5·61	1·16	1·70	0·00	2·86	8·47	1·47	0·88	0·16	2·51	10·98	3·77	9·92	3·28	16·97	27·95	
1944–49 Average	...	0·14	0·37	0·43	0·94	0·19	0·29	0·00	0·48	1·41	0·25	0·15	0·03	0·42	1·83	0·63	1·65	0·55	2·83	4·66	Average
Minimum		0·00	0·01	0·00	0·03	0·00	0·00	0·00	0·01	0·30	0·00	0·00	0·00	0·00	0·30	0·00	0·00	0·00	0·82	2·44	Minimum (1944)
Maximum		0·43	1·19	1·66	2·43	1·01	1·06	0·00	1·18	2.88	0·86	0·75	0·14	0·88	3·18	1·87	5·31	0·95	7·32	7·62	Maximum (1945)
Note.—From "Bull. Ann. Ser. Mét." of French Somaliland																					
8. Eil	1937	0·00	0·00	0·37	0·37	3·96	2·48	0·09	6·53	6·90	0·00	0·00	0·60	0·60	7·50	2·64	1·40	0·00	4·04	11·54	
	1938	0·11	0·00	0·00	0·11	0·00	3·19	0·00	3·19	3·30	0·00	0·00	0·00	0·00	3·30	1·26	0·20	0·00	1·46	4·76	
	1939	0·12	0·00	0·47	0·59	0·00	0·24	0·00	0·24	0·83	0·00	0·00	0·00	0·00	0·83	1·89	0·00	0·35	2·24	3·07	
Total, 3 years	...	0·23	0·00	0·84	1·07	3·96	5·91	0·09	9·96	11·03	0·00	0·00	0·60	0·60	11·63	5·79	1·60	0·35	7·74	19·37	
1937–39 Average	...	0·08	0·00	0·28	0·36	1·32	1·97	0·03	3·32	3·68	0·00	0·00	0·20	0·20	3·88	1·93	0·53	0·12	2·58	6·46	Average
Minimum		0·00	0·00	0·00	0·11	0·00	0·24	0·00	0·24	0·83	0·00	0·00	0·00	0·00	0·83	1·26	0·00	0·00	1·46	3·07	Minimum (1939)
Maximum		0·12	0·00	0·47	0·59	3·96	3·19	0·09	6·53	6·90	0·00	0·00	0·60	0·60	7·50	2·64	1·40	0·35	4·04	11·54	Maximum (1937)
49. Gumburu Hills	1950	—	—	—	—	0·00	1·47	0·00	1·47	1·47+	0·10	0·00	8·90	9·00	10·47+	3·48	0·02	0·00	3·50	13·97+	

TABLE 6

SUMMARY OF THE RAINFALL IN INCHES

	Max.	(Year)	Min.	(Year)	Average (Years)	Latitude N.	Longitude E.	Altitude (ft.)	
1. Wajale	22·96	(1946)	17·94	(1950)	19·88 (1944–50)	9° 37′	43° 17′	5,127	1. Wajale.
2. Ijara	20·84	(1950)	13·02	(1944)	17·69 (1944–50)	9° 35′	43° 38′	5,130	2. Ijara.
Gebile						9° 42′	43° 37′	4,790	Gebile.
3. Go'o	43·68	(1946)	10·56	(1950)	24·16 (1946–50)	9° 47′	44° 56′	5,220	3. Go'o.
4. Odweina	11·16	(1948)	4·54	(1944)	8·11 (1944–50)	9° 24′	45° 04′	3,460	4. Odweina.
5. Gudubi	14·20	(1946)	4·05	(1949)	6·99 (1944–50)	8° 49′	45° 00′	3,335	5. Gudubi.
6. Danot	13·78	(1950)	3·32	(1949)	8·96 (1944–50)	7° 23′	45° 18′	2,220	6. Danot.
7. Ainabo	11·81	(1945)	1·28	(1950)	5·73 (1944–50)	8° 57′	46° 26′	2,579	7. Ainabo.
8. Yo'obyaboh	15·80	(1946)	3·01	(1950)	7·19 (1945–50)	8° 30′	45° 33′	2,710	8. Yo'obyaboh.
9. Ber	10·69	(1949)	2·84	(1950)	6·18 (1944–50)	9° 22′	45° 47′	3,050	9. Ber.
10. Las Anod	8·24	(1946)	2·47	(1949)	4·80 (1944–50)	8° 28′	47° 22′	2,313	10. Las Anod.
11. Donkuqoq	6·12	(1944)	2·91	(1945)	4·33 (1944–48)	8° 10′	48° 11′	2,500	11. Donkuqoq.
12. Awareh	19·40	(1945)	4·01	(1950)	11·19 (1944–50)	8° 16′	44° 09′	3,730	12. Awareh.
13. Gardo	6·68	(1949)	2·21	(1944)	4·20 (1944–49)	9° 29′	49° 02′	2,460	13. Gardo.
14. Buran	4·05	(1948)	1·52	(1950)	2·69 (1945–50)	10° 13′	48° 47′	3,140	14. Buran.
15. Hudun	6·80	(1945)	2·44	(1950)	3·99 (1944–50)	9° 09′	47° 29′	2,051	15. Hudun.
16. Do'mo	9·58	(1944)	1·56	(1950)	6·76 (1944–50)	7° 53′	46° 51′	1,820	16. Do'mo.
17. Garadag	6·10	(1946)	1·20	(1950)	3·89 (1945–50)	9° 29′	46° 53′	2,600	17. Garadag.
18. Bihen	18·89	(1945)	0·58	(1947)	5·01 (1945–50)	8° 26′	48° 25′	1,475	18. Bihen.
19. El Afwein	7·21	(1948)	2·10	(1950)	5·35 (1944–50)	9° 55′	47° 15′	3,346	19. El Afwein.
20. Halin	5·07	(1948)	0·48	(1950)	3·14 (1944–50)	9° 06′	48° 38′	2,035	20. Halin.
Taleh						9° 09′	48° 25′	2,093	Taleh.
21. Hanan	7·25	(1944)	0·00	(1947)	2·62 (1944–48)	10° 35′	46° 18′	410	21. Hanan.
22. Dur Elan	5·94	(1948)	1·69	(1947)	3·91 (1944–48)	10° 08′	46° 22′	2,125	22. Dur Elan.
23. Bawn	17·43	(1947)	6·88	(1944)	12·74 (1944–50)	10° 12′	43° 06′	4,340	23. Bawn.
24. Elal	13·15	(1946)	3·42	(1950)	8·86 (1944–50)	9° 56′	46° 17′	3,565	24. Elal.
25. Daloh	50·26	(1949)	20·63	(1946)	32·79 (1945–50)	10° 47′	47° 18′	6,780	25. Daloh.
26. Burao	10·10	(1946)	1·89	(1950)	5·73 (1944–50)	9° 31′	45° 34′	3,420	26. Burao.
27. Bihendula	16·53	(1949)	2·89	(1950)	10·17 (1946–50)	10° 10′	45° 08′	1,900	27. Bihendula.
28. Silil	6·89	(1949)	0·85	(1948)	3·26 (1945–50)	10° 59′	43° 26′	242	28. Silil.
29. Abdul Qadr	13·49	(1946)	8·05	(1949)	10·57 (1945–49)	10° 31′	42° 53′	2,400	29. Abdul Qadr.
30. Sheikh	24·02	(1948)	12·14	(1950)	17·99 (1944–50)	9° 56′	45° 12′	4,726	30. Sheikh.
31. Berbera (R.A.F.)	3·79	(1950)	0·07	(1947)	1·88 (1944–50)	10° 26′	45° 02′	25	31. Berbera.
32. Hargeisa (R.A.F.)	21·34	(1947)	11·02	(1949)	15·43 (1944–50)	9° 31′	44° 06′	4,500	32. Hargeisa (R.A.
33. Hargeisa (S.A.O.)	15·75	(1947)	11·06	(1949)	12·94 (1947–49)	9° 33′	44° 04′	4,100	33. Hargeisa (S.A.
34. Hargeisa (D.C.)	17·59	(1947)	11·18	(1948)	13.33 (1947–48)	9° 33′	44° 04′	4,100	34. Hargeisa (D.C
35. Galkayu	6·13	(1946)	1·32	(1949)	4·28 (1945–49)	6° 47′	47° 26′	951	35. Galkayu.
36. Qabridahare	15·51	(1947)	5·64	(1945)	10·57 (1945–47)	6° 45′	44° 17′	1,395	36. Qabridahare.
37. Zeila	3·17	(1949)	1·42	(1948)	2·31 (1947–50)	11° 21′	43° 29′	1	37. Zeila.
38. Mandera	19·51	(1949)	4·61	(1947)	14·11 (1947–50)	9° 55′	44° 43′	2,895	38. Mandera.
39. Borama	22·61	(1947)	15·87	(1948)	18·84 (1947–50)	9° 56′	43° 11′	4,770	39. Borama.
40. Erigavo	21·63	(1950)	11·93	(1949)	14·77 (1947–50)	10° 37′	47° 22′	5,722	40. Erigavo.
41. Las Dureh	4·60	(1948)	2·69	(1950)	3·88 (1948–50)	10° 11′	46° 00′	1,755	41. Las Dureh.
42. Adadleh	14·95	(1944)	10·69	(1945)	12·82 (1944–45)	9° 46′	44° 40′	4,127	42. Adadleh.
43. Bohotleh	—		—		6·58 (1944 only)	8° 14′	46° 19′	2,165	43. Bohotleh.
44. Bosaso (R.A.F.)	1·24	(1944)	0·14	(1945)	0·69 (1944–45)	11° 17′	49° 11′	S.L.	44. Bosaso.
45. Isskushuban (R.A.F.)	—		—		2·50 (1944 only)	10° 17′	50° 14′	72,296	45. Isskushuban.
46. Jigjiga	—		—		14·67 (1947 only)	9° 20′	42° 48′	5,688	46. Jigjiga.
47. Jibuti	7·62	(1945)	2·44	(1944)	4·66 (1944–49)	11° 36′	43° 09′	11	47. Jibuti.
48. Eil (Italian)	11·54	(1937)	3·07	(1939)	6·44 (1937–39)	7° 59′	49° 49′	S.L.	48. Eil (Italian).
49. Gumburu Hills	—		—		13·97 (1950 only)	6° 55′	45° 49′	1,748	49. Gumburu Hil

TABLE 7

DATE OF THE BEGINNING OF "GU" MAIN RAINS (SECOND QUARTER)

	1944	1945	1946	1947	1948	1949	1950	(Statistical) Average
4. ODWEINA ...	13.4	7.5	5.4	8.4	22.4	4.5	4.4	18.4
6. DANOT	1.5	7.5	? April	8.4	26.4	10.4	3.5	23.4
10. LAS ANOD ...	17.4	7.5	19.4	14.4	Nil	8.5	16.5	29.4
13. GARDO	12.4	20.4	19.4	16.4	23.4	29.4	17.5	24.4
26. BURAO	3.5	6.5	13.4	9.4	23.4	4.5	3.5	26.4
30. SHEIKH	7.4	6.5	3.4	7.4	16.4	13.4	18.4	14.4
32. HARGEISA... ...	7.4	Early May	15.4	7.4	7.4	30.4	3.4	15.4
39. BORAMA	6.4	13.4	9.4	7.4	8.4	3.5	25.4	14.4
40. ERIGAVO ...	8.4	6.5	April	11.4	7.4	5.5	9.5	22.4 (Mean 21.4)
Beginning of widespread Gu rains ... ... (From detailed monthly maps and records.)	April 7–17	May 4–7	April 4	April 7–12	April 26	May 4	May 2–4	22.4

Note.—Despite statistical averages the likeliest dates for beginning of Gu widespread rains are April 7th or May 4th.

TABLE 8

GENERAL IMPRESSION OF RAINFALL VALUE FOR PROTECTORATE AND GRAZING AREAS AS A WHOLE (NOT FOR SMALL AREAS)

Rainfall quarter	1944	1945	1946	1947	1948	1949	1950
First: January–March ...	good	fair	fair	good	fair	fair	fair
Second: April–June	poor	fair	good	poor	fair	poor	bad
Third: July–September ...	good	fair	fair	fair	fair	fair	fair
Fourth: October–December ...	good	fair	good	fair	fair	good	bad
Whole year	poor	fair	good	poor	fair	fair	bad

TABLE 9

TABLE OF ANNUAL RAINFALL IN INCHES (1906–1939 COLLECTED BY DR. W. A. MACFADYEN)

Year	31 Berbera	39 Borama	26 Burao	40 Erigavo	2 Gebile*	32 Hargeisa	30 Sheikh	37 Zeila	Notes
General Survey Station No.									
1906	7·02	—	—	—	—	—	—	—	
1907	0·94	—	—	—	—	—	—	—	
1908	1·26	—	—	—	—	—	—	—	
1909	2·89	—	—	—	—	—	—	—	
1910	6·36	—	—	—	—	—	—	—	Floods in March.
1911	1·35	—	—	—	—	—	—	—	
1912	2·50	—	—	—	—	—	—	—	
1913	3·27	—	—	—	—	—	—	—	
1914	2·63	—	—	—	—	—	—	—	Major drought (Jahwein).
1915	0·58	—	—	—	—	—	—	—	
1916	2·89	—	—	—	—	—	—	—	
1917	0·55	—	—	—	—	—	—	—	
1918	1·93	—	—	—	—	—	—	—	
1919	2·31	—	—	—	—	—	—	—	
1920	2·29	—	—	—	—	—	—	—	
1921	1·35	—	3·85	—	—	—	—	—	
1922	0·79	—	—	—	18·52	15·28	17·12	—	
1923	2·86	—	9·90	—	21·56	16·86	47·14	—	
1924	0·98	—	8·96	—	—	18·06	23·51	—	
1925	0·56	—	11·89	12·62	—	16·39	20·59	2·04	Drought (Duryanleh).
1926	6·54	—	12·30	18·25	—	31·91	27·38	10·81	
1927	2·02	—	9·78	15·29	—	14·58	11·70	8·42	
1928	1·09	15·99	9·07	10·50	—	12·45	19·90	3·08	Major drought (Baha).
1929	0·37	16·42	9·25	11·90	—	17·07	25·04	1·81	Destitute camps, Bulhar (?22,000) and at Buran. Locusts.
1930	4.63	22·55	6·50	12·84	—	20·67	27·02	8·83	
1931	1·43	20·24	9·79	10·53	—	25·35	19·43	0·66	
1932	2·20	25·99	5·58	11·07	—	15·28	18·79	8·12	
1933	0·86	15·90	5·58	9·81	—	12·42	17·07	2·05	Drought (Gabato).
1934	1·70	18·37	6·88	12·53	—	15·19	18·17	5·46	
1935	6·20	25·99	7·26	13·53	—	18·26	16·58	3·29	
1936	2·43	26·52	9·15	13·19	—	19·26	17·76	0·50	
1937	1·79	25·26	9·86	18·42	—	17·82	20·82	5·75	
1938	1·08	13·65	4·78	8·82	—	12·13	10·93	1·28	Drought.
1939	0·37	17·39	16·17	13·45	—	23·61	19·51	3·41	... ... May. Locusts.
1940	4·03	—	—	—	—	—	—	—	Fair rains (good Dhair).
1941	—	—	—	—	—	—	—	—	Heavy widespread rains ... ... From Sept. Locusts.
1942	—	—	—	—	—	—	—	—	Fair rains ... ... Locusts.
1943	2·78	—	—	—	—	—	—	—	Poor rains (destitutes Borama) ... ... Locusts.
1944	0·10	—	4·96	—	13·02	12·44	12·34	—	... ... Locusts.
1945	1·76	—	5·69	—	20·70	14·47	17·50	—	... ... Locusts.
1946	1·03	—	10·10	—	18·17	17·05	21·07	—	Very good rains ... ... Locusts.
1947	0·07	22·61	5·69	12·24	17·75	21·34	17·15	2·33	... ... Until Sept. Locusts.
1948	2·84	15·87	4·59	13·26	14·06	15·62	24·02	1·42	
1949	3·59	19·69	7·19	11·93	19·29	11·02	21·73	3·17	... ... From Dec. Locusts
1950	3·79	17·19	1·89	21·63	20·84	16·05	12·14	2·31	Drought ... ... Locusts

* Gebile recording made at Ijara from 1.1.46–31.5.50.

Jibuti.—Records have been kept at Jibuti (Bulletin Annuel du Service Météorologique Côte Française des Somalis) since 1901 without a break. The average annual rainfall from 1901 to 1947 was 4·95 inches, and the maximum annual rainfall in that period was 11·10 inches in 1937.

Harar.—The average annual rainfall at Harar from 1909 to 1918 was 35·27 inches.

D. Résumé of Seven Years Rainfall (1944–50 Survey)

144. **1944** was a poor year for rainfall, though there were areas (e.g. Hanan, Bohotleh), which had considerable rain in December, usually a dry month. This prevented the serious shortage of grazing which would otherwise have resulted from the poor rainfall of 1944, coupled with the lateness of the Gu main rains in May (instead of April) 1945.

145. **1945** was a fairly good average rainfall year as a whole, there being good rains from May till September, but poor October–December rains.

146. **1946** was a very good year, with better Gu main rains over a wider area than usual. This was the best year's rainfall in the seven years of the General Survey for the Protectorate as a whole, though in the east the Sawl, Haded, Nogal, Sur, and the Dur Elan basin, had poor rains.

147. **1947** started well, with quite good refresher rains in February and March, and the Gu main rains started in April. As a whole, however, the rainfall for the year was poor as in 1944.

148. **1948** Gu main rains began rather late in April and were not very good, but excellent rains in October in the central part of the Protectorate brought the rainfall up to a fair year's average for the country as a whole. More important still the area which got three inches to six inches rainfall, as distinct from 0–3 inches, was much greater than in a normal year, so that though statistically 1948 was only a fair rainfall year, there was a greater area of dry grass than usual at the beginning of 1949.

149. **1949** started with a minor drought in the west of the Protectorate where rains are expected in the first quarter of the year, followed by late (May) Gu main rains, poor in the west. From July to September the rains were fair, but the October rains failed almost completely, as did those usually expected in the first half of November. Late in November (especially the 27th and 28th), however, and in December, heavy unexpected rains fell over most of the Protectorate, saving 1949 from being a bad rainfall year, ensuring grazing well into 1950, and replenishing the plateau wells. In fact the drought in the west (Borama-Zeila) which had occurred early in 1949 was almost forgotten, except to a few, by Christmas time.

150. **1950** started well by quite unusual January rains, again replenishing wells and freshening grazing in what is usually the driest month of the year. There was a little rain in February and March, but except around Danot the Gu main rains failed. From July to September there were fair rains in the usual Watershed area of third quarter rains, especially west of Hargeisa to Gebile and Wajale. From October to December the rains practically failed again except, for the second time in 1950, around Danot in Haro Hagari.

151. **1950** must be classed as a bad year, only saved from being a year of major drought by the freak rains between 27th November, 1949, and January 1950, which ensured reserves of dry grass in sufficient areas to tide over some of the stock till the next rains. The exceptionally heavy rainfalls in the Danot area also provided alternative grazing for much of the stock. In the event the next rains were early in 1951 (March), the heaviest March rains on record since 1910.

152. In Erigavo Station (Post 40) 1950 was the year of heaviest rainfall recorded from 1947–50, being 50 per cent. above average. This rain fell mostly between July and September, and, owing to locusts and drought in the neighbouring plateau and most of the Erigavo District as a whole, it did not much alleviate the drought conditions there.

153. Whether or not cycles of increasing and decreasing rainfall records over a period of years can be deduced from existing records or not is open to doubt. It is equally doubtful whether rainfall is steadily decreasing despite the oft reiterated remarks that "Everyone knows Africa is drying up. Look at the lake levels. Read the old books about impenetrable jungles," etc.

154. The Tables of Rainfall (Tables 5–9, paras. 139–143) should be studied by those interested, and it is hoped that every encouragement will be given to increased recording of meteorological data, both by private citizens and by Government officials.

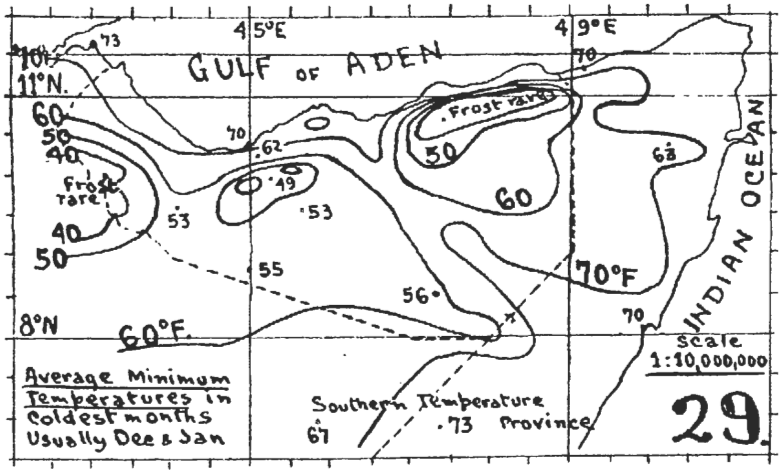
155. As suggested in Chapter III, Time Dimension, it might be worth while comparing the Easter variations of calendars with known cycles of variation of the seasons. The old Lunar/Solar Seasonal Calendars might possibly be based on climatic cycles.

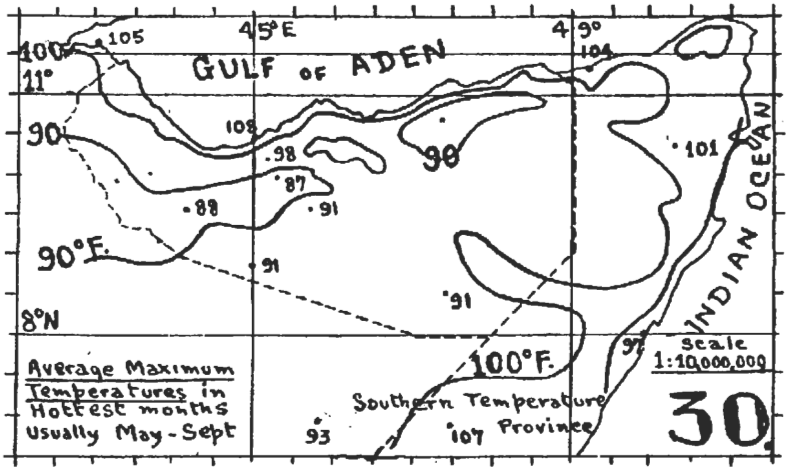
156. The recording of temperatures has not proved very satisfactory, but the statistics given in Tables 10 and 11 and the Illustrations 29 and 30 (below) show that temperatures vary fairly regularly with the season of the year and altitude. Comparison of Illustrations 5 and 6 (contour sketches) with Illustrations 29 and 30 show that the coastal areas vary in temperature from monthly minima of 70°F. to maxima of 108°F. (absolute 60–115°F.), and the highlands of the Protectorate from occasional slight local frosts (32°F.) to between 80°F. and 99°F. From the Tables 10 and 11 (below), the range both annual and diurnal may be seen. The considerable diurnal range of 20°F. to 30°F., together with the relative dryness of the climate. are the secrets of the generally pleasant conditions of the country: the objections to the climate are that the coastal areas are too hot in the summer, and that the S.W. Monsoon is often too dry and dusty. Roughly speaking, from April to October is usually unpleasant on the coast, and from May till September the least pleasant time of the year on the Plateau.

157. The records from Somalia Italiana, south-east of the Protectorate, suggest that a completely different set of seasons obtains in that area, owing to its lower latitude.

158. The reliability or unreliability of the records appear fairly obvious from a study of Table 10. Records were only made at 8.30 a.m. daily.

159, 160. (*Illustrations* 29 *and* 30.)





161, 162, 163. (*Tables* 10, 11 *and* 12.)

TABLE 10

DETAILED MONTHLY MAXIMUM AND MINIMUM TEMPERATURES IN DEGREES FAHRENHEIT, 1944–50

	January	February	March	April	May	June	July	August	September	October	November	December
i) Absolute maximum temperatures to nearest °F.												
. GUDUBI 1947	90	94	94	95	94	101	103	99	94	91	94	(90)*
i) Mean maximum temperatures to nearest °F.												
. GUDUBI 1947	84	91	91	91	91	90	89	86	91	89	87	(84)*
:) Mean minimum temperatures to nearest °F.												
. GUDUBI 1947	55	59	63	63	68	68	68	67	69	63	60	55
1948	54	59	60	67	67	67	66	66	67	64	58	54
1949	53	56	60	63	66	67	65	66	67	64	54	56
1950	58	58	59	63	68	67	66	65	65	59	53	54
Total, 4 years	220	232	242	256	269	269	265	264	268	250	225	219
1947–50 Average...	55	58	61	64	67	67	66	66	67	62	56	55
Minimum	53	56	59	63	66	67	65	65	65	59	53	54
Maximum	58	59	63	67	68	68	68	67	69	64	60	56
a) Absolute minimum temperatures to nearest °F.												
. GUDUBI 1947	49	53	54	54	63	65	65	64	64	53	55	50
1948	48	54	53	58	61	61	63	63	63	59	54	49
1949	49	51	54	60	59	64	63	56	65	53	45	52
1950	51	46	55	59	66	67	64	63	62	51	49	50
Total, 4 years	195	204	216	231	249	257	255	246	254	216	203	201
1947–50 Average...	49	51	54	58	62	64	64	62	64	54	51	50
Minimum	46	46	53	54	59	61	63	56	62	51	45	49
Maximum	51	54	55	60	66	67	65	64	65	59	55	52
a) Absolute maximum temperatures to nearest °F.												
0. LAS ANOD 1945	—	—	91	93	93	93	93	91	93	93	91	88
1946	84	90	93	95	97	93	93	91	95	95	87	86
1947	90	93	—	95	95	95	87	89	96	91	—	—
Total, 2/3 years	174	183	184	283	285	281	273	271	284	279	178	174
1945–47 Average...	87	92	92	94	95	94	91	90	95	93	89	87
Minimum	84	90	91	93	93	93	93	89	93	91	87	86
Maximum	90	93	93	95	97	95	87	91	96	95	91	88

* Interpolated guess.

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	Dece
(b) Mean maximum temperatures to nearest °F.													
10. Las Anod	1945	—	—	89	92	90	87	87	89	91	89	87	8
	1946	82	85	89	92	92	90	89	89	91	90	87	8
	1947	80	87	—	84	84	87	85	86	91	89	—	-
Total, 2/3 years		162	172	178	268	266	264	261	264	273	268	174	16
1945–47 Average...		81	86	89	89	89	88	87	88	91	89	87	8
Minimum		80	85	89	84	84	87	85	86	91	89	87	8
Maximum		82	87	89	92	92	90	89	89	91	90	87	8
(c) Mean minimum temperatures to nearest °F.													
10. Las Anod	1945	—	—	60	65	70	69	69	68	65	64	62	5
	1946	57	58	62	68	71	72	70	69	68	66	60	6
	1947	59	64	—	—	—	63	63	63	70	67	65	5
	1948	54	60	57	64	63	67	68	68	68	66	63	6
	1949	55	55	55	66	70	66	67	67	67	66	72	7
Total, 4/5 years		225	237	234	263	274	327	337	335	338	329	322	30
1945–49 Average...		56	59	58	66	68	65	67	67	67	66	64	6
Minimum		54	55	55	64	63	63	63	63	65	64	60	5
Maximum		59	64	62	68	71	72	70	69	70	67	72	7
(a) Absolute minimum temperatures to nearest °F.													
10. Las Anod	1945	—	—	55	60	61	61	65	63	63	57	57	5
	1946	54	56	58	62	63	69	69	67	65	59	56	5
	1947	54	57	—	—	—	61	57	54	67	61	60	5
	1948	48	55	46	58	51	65	64	66	66	64	59	5
	1949	51	53	52	63	65	66	64	64	66	61	—	—
Total, 4/5 years		207	221	211	243	240	322	319	314	327	302	232	21
1945–49 Average...		52	55	53	61	60	64	64	63	65	60	58	5
Minimum		48	53	46	58	51	61	57	54	63	57	56	5
Maximum		54	57	58	63	65	69	69	67	67	64	60	5
(a) Absolute maximum temperatures to nearest °F.													
26. Burao	1945	86	87	90	91	99	97	92	96	93	90	86	87
	1946	85	90	93	93	96	97	96	93	94	91	86	87
	1947	90	89	93	93	96	100	98	94	94	93	86	89
	1948	85	89	93	92	96	92	93	93	95	94	86	85
	1949	87	88	91	93	98	93	92	94	94	93	87	85
	1950	87	89	92	92	95	94	92	93	92	92	87	85
Total, 6 years		520	532	552	554	580	573	563	563	562	553	518	518
1945–50 Average...		87	89	92	92	97	96	94	94	94	92	86	86
Minimum		85	87	90	91	95	92	92	93	92	90	86	85
Maximum		90	90	93	93	99	100	98	96	95	94	87	89

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
(b) Mean maximum temperatures to nearest °F.													
26. BURAO	1945	83	84	86	89	90	89	87	89	87	87	76	81
	1946	82	86	88	86	91	91	88	88	90	86	84	81
	1947	83	85	89	88	90	90	88	87	91	88	83	81
	1948	80	86	88	89	93	90	85	89	92	87	84	82
	1949	79	85	87	88	87	90	88	90	91	88	83	81
	1950	81	83	89	89	92	89	87	89	90	88	84	81
Total, 6 years		488	509	527	529	543	539	523	532	541	524	494	487
1945–50 Average...		81	85	88	88	91	90	87	89	90	87	82	81
Minimum		79	83	86	86	87	89	85	87	87	86	76	81
Maximum		83	86	89	89	93	91	88	90	92	88	84	82
(c) Mean minimum temperatures to nearest °F.													
26. BURAO	1945	58	60	57	63	66	67	68	67	66	58	58	53
	1946	53	52	59	67	68	69	68	68	67	61	55	52
	1947	52	56	61	63	62	68	68	67	66	59	56	53
	1948	53	57	59	64	66	67	67	67	65	62	56	54
	1949	52	55	59	61	67	67	67	68	66	58	54	55
	1950	53	53	59	61	66	66	66	67	66	57	53	52
Total, 6 years		321	333	354	379	395	404	404	404	396	355	332	319
1945–50 Average...		54	56	59	63	66	67	67	67	66	59	55	53
Minimum		52	52	57	61	62	66	66	67	66	57	53	52
Maximum		58	60	61	67	68	69	68	68	67	62	58	55
(d) Absolute minimum temperatures to nearest °F.													
26. BURAO	1945	51	52	54	61	57	64	64	65	63	51	49	46
	1946	46	48	53	59	63	65	62	67	63	51	47	44
	1947	44	52	53	57	59	65	65	65	63	50	49	46
	1948	45	53	53	56	59	63	64	65	60	54	48	45
	1949	45	46	52	56	61	63	64	64	61	46	45	50
	1950	46	42	51	57	61	63	65	64	63	49	46	45
Total, 6 years		277	293	316	346	360	383	384	390	373	301	284	276
1945–50 Average...		46	49	53	58	60	64	64	65	62	60	47	46
Minimum		44	42	51	56	57	63	62	64	60	46	45	44
Maximum		51	53	54	61	63	65	65	67	63	54	49	50
(a) Absolute maximum temperatures to nearest °F.													
27. MANJA ASSEH (nr. Bihendula) ...	1945	84	84	94	102	102	105	—	—	—	—	—	—

TABLE 11

SUMMARY OF AVERAGE TEMPERATURES TO NEAREST DEGREES FAHRENHEIT

Station No.		Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	
5. GUDUBI	Average mean monthly maximum ...	84	91	91	91	91	90	89	86	91	89	87	(84)	1947–50 *incomplete*
	Average mean monthly minimum ...	55	58	61	64	67	67	66	66	67	62	56	55	*Average Diurnal range* 27°F
	Average monthly diurnal range ...	29	33	30	27	24	23	23	20	24	27	31	29	
	Average monthly absolute maximum	90	94	94	95	94	101	103	99	94	91	94	(90)	*Extreme absolute range*
	Average monthly absolute minimum	49	51	54	58	62	64	64	62	64	54	51	50	103°F. − 45°F. = 58°F.
10. LAS ANOD	Average mean monthly maximum ...	81	86	89	89	89	88	87	88	91	89	87	84	1945–49 *incomplete*
	Average mean monthly minimum ...	56	59	58	66	68	65	67	67	67	66	64	61	*Average diurnal range* 24°F
	Average monthly diurnal range ...	25	27	31	23	21	23	20	21	24	23	23	23	
	Average monthly absolute maximum	87	92	92	94	95	94	91	90	95	93	89	87	*Extreme absolute range*
	Average monthly absolute minimum	52	55	53	61	60	64	64	63	65	60	58	54	97°F. − 48°F. = 49°F
26. BURAO	Average mean monthly maximum ...	81	85	88	88	91	90	87	89	90	87	82	81	1945–50
	Average mean monthly minimum ...	54	56	59	63	66	67	67	67	66	59	55	53	*Average diurnal range* 26°F
	Average monthly diurnal range ...	27	29	29	25	25	23	20	22	24	28	27	28	
	Average monthly absolute maximum	87	89	92	92	97	96	94	94	94	92	86	86	*Extreme absolute range*
	Average monthly absolute minimum	46	49	53	58	60	64	64	65	62	60	47	46	100°F. − 44°F. = 56°F
27. MANJA ASSEH (Bihendula) ...	Average mean monthly maximum ..	80	84	85	93	97	(97)	96	98	95	89	85	76	1944–45 *incomplete*
	Average mean monthly minimum ...	62	63	68	69	(75)	(80)	81	81	77	67	65	67	*Average diurnal range* 18°F
	Average monthly diurnal range ...	18	21	17	24	(22)	(17)	15	17	18	22	20	9	
	Average monthly absolute maximum	84	84	94	102	102	105	—	—	—	—	—	—	*Extreme absolute range*
	Average monthly absolute minimum	58	56	61	58	—	—	—	—	—	—	—	—	? 105°F. − 56°F. = ? 49°F
30. SHEIKH	Average mean monthly maximum ...	70	75	80	83	85	87	85	85	86	80	74	71	1945–50
	Average mean monthly minimum ...	49	52	56	59	63	64	63	63	63	55	52	50	*Average diurnal range* 23°F
	Average monthly diurnal range ...	21	23	23	24	22	23	22	22	23	25	21	21	
	Average monthly absolute maximum	77	81	87	88	90	91	90	90	89	86	79	76	*Extreme absolute range*
	Average monthly absolute minimum	42	46	51	55	57	60	59	59	59	48	45	45	92°F. − 38°F. = 54°F
31. BERBERA (R.A.F.	Average mean monthly maximum ...	83	84	87	90	96	108	108	107	103	92	86	84	1945–50
	Average mean monthly minimum ...	70	71	74	77	82	87	89	89	85	75	72	71	*Average diurnal range* 16°F
	Average monthly diurnal range ...	13	13	13	13	14	21	19	18	18	17	14	13	
	Average monthly absolute maximum	85	87	90	93	108	113	113	111	110	96	90	86	*Extreme absolute range*
	Average monthly absolute minimum	63	66	70	72	76	80	85	81	78	70	68	65	115°F. − 60°F. = 55°F

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	Decemb
(b) *Mean maximum temperatures to nearest °F.*													
Z. MANJA ASSEH (nr. Bihendula) ...	1944	79	84	88	—	—	—	96	98	95	89	85	76
	1945	81	83	81	93	97	—	—	—	—	—	—	—
1944–45 Average...		80	84	85	93	97	(97)*	96	98	95	89	85	76
(c) *Mean minimum temperatures to nearest °F.*													
Z. MANJA ASSEH (nr. Bihendula) ...	1944	62	63	70	—	—	—	81	81	77	67	65	67
	1945	62	62	65	69	—	—	—	—	—	—	—	—
Total, 1/2 years		124	125	135	69	—	—	—	—	—	—	—	—
1944–45 Average...		62	63	68	69	(75)*	(80)*	81	81	77	67	65	67
Minimum		62	62	65	69	—	—	—	—	—	—	—	—
Maximum		62	63	70	69	—	—	—	—	—	—	—	—
(f) *Absolute minimum temperatures to nearest °F.*													
Z. MANJA ASSEH	1945	58	56	61	58	—	—	—	—	—	—	—	—
(g) *Absolute maximum temperatures to nearest °F.*													
D. SHEIKH	1945	78	79	85	91	90	92	90	91	87	85	77	73
	1946	73	82	84	87	88	87	90	89	89	85	75	75
	1947	75	82	85	85	90	92	92	90	90	88	81	76
	1948	76	84	89	88	88	90	90	91	89	88	78	76
	1949	75	78	88	90	92	92	91	90	90	87	84	79
	1950	82	81	88	85	91	90	88	89	89	84	79	77
Total, 6 years		459	486	519	526	539	543	541	540	534	517	474	456
1945–50 Average...		77	81	87	88	90	91	90	90	89	86	79	76
Minimum		73	78	84	85	88	87	88	89	87	84	75	73
Maximum		82	84	89	91	92	92	92	91	90	88	84	79
(b) *Mean maximum temperatures to nearest °F.*													
D. SHEIKH	1945	73	74	79	87	84	87	86	85	85	79	73	72
	1946	70	75	79	81	84	88	85	84	85	78	73	71
	1947	72	77	79	81	84	86	88	83	85	80	75	69
	1948	68	76	80	84	84	86	84	86	86	79	73	70
	1949	71	73	81	83	85	87	86	86	86	82	76	70
	1950	64	73	80	82	86	86	83	85	86	79	76	72
Total, 6 years		418	448	478	498	507	520	512	509	513	477	446	424
1945–50 Average...		70	75	80	83	85	87	85	85	86	80	74	71
Minimum		64	73	79	81	84	86	83	83	85	78	73	69
Maximum		73	77	81	87	86	88	88	86	86	82	76	72

* Interpolated guess.

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
(c) Mean minimum temperatures to nearest °F.													
30. SHEIKH	1945	53	53	56	61	63	65	63	64	64	53	53	51
	1946	49	50	56	59	64	65	63	63	63	55	52	49
	1947	49	53	55	57	62	64	63	61	62	54	53	51
	1948	49	56	56	61	62	64	63	63	64	58	52	49
	1949	46	52	57	57	62	64	63	62	63	55	52	52
	1950	49	50	56	57	62	62	62	62	62	53	50	49
Total, 6 years		295	314	336	352	375	384	377	375	378	328	312	301
1945–50 Average		49	52	56	59	63	64	63	63	63	55	52	50
Minimum		46	50	55	57	62	62	62	61	62	53	50	49
Maximum		53	56	57	61	64	65	63	64	64	58	53	52
(d) Absolute minimum temperatures to nearest °F.													
30. SHEIKH	1945	47	48	49	57	59	59	59	60	61	46	46	46
	1946	44	45	51	56	57	60	59	61	59	50	45	41
	1947	38	48	47	53	56	60	60	59	58	49	43	45
	1948	42	51	53	56	54	58	60	60	57	53	45	44
	1949	39	43	52	53	57	61	58	58	59	46	46	48
	1950	41	38	51	52	59	59	58	58	60	44	46	44
Total, 6 years		251	273	303	327	342	357	354	356	354	288	271	268
1945–50 Average		42	46	51	55	57	60	59	59	59	48	45	45
Minimum		38	38	47	52	54	58	58	58	57	44	43	41
Maximum		47	51	53	57	59	61	60	61	61	53	46	48
(a) Absolute maximum temperatures to nearest °F.													
31. BERBERA	1945	87	89	91	93	104	115	114	113	112	95	90	86
	1946	81	86	88	97	108	115	115	111	112	96	92	85
	1947	84	86	89	93	109	114	114	114	111	95	90	86
	1948	84	87	91	93	108	113	111	110	109	101	91	86
	1949	85	86	89	91	108	112	111	109	108	97	88	87
	1950	87	86	90	90	109	110	110	107	107	93	89	86*
Total, 6 years		508	520	538	557	646	679	675	664	659	577	540	516
1945–50 Average		85	87	90	93	108	113	113	111	110	96	90	86
Minimum		81	86	88	90	104	110	110	107	107	93	88	85
Maximum		87	89	91	97	109	115	115	114	112	101	92	87
(b) Mean maximum temperatures to nearest °F.													
31. BERBERA	1945	83	86	91	89	94	107	110	109	108	90	85	82
	1946	80	84	85	90	96	112	110	107	96	91	87	83
	1947	83	85	86	90	96	110	110	108	104	91	87	84
	1948	82	84	87	90	96	108	108	107	105	93	87	84
	1949	83	84	87	90	99	108	108	106	104	93	84	84
	1950	84	83	87	88	97	105	104	104	102	91	87	85*
Total, 6 years		495	506	523	537	578	650	650	641	619	549	517	502
1945–50 Average		83	84	87	90	96	108	108	107	103	92	86	84
Minimum		80	83	85	88	94	105	104	104	96	90	84	82
Maximum		84	86	91	90	99	112	110	109	108	93	87	85

*NOTE.—Berbera R.A.F. Met. Station closed after 10.12.50.

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
(c) Mean minimum temperatures to nearest °F.													
31. BERBERA	1945	71	71	76	79	81	87	91	89	87	74	75	72
	1946	71	69	73	78	84	88	85	83	83	71	71	75
	1947	75	72	74	76	80	86	90	90	85	76	72	68
	1948	67	72	74	78	82	90	90	90	84	79	71	68
	1949	68	70	73	76	82	88	90	88	85	76	71	71
	1950	70	69	74	75	80	85	88	86	84	75	70	69*
Total, 6 years		422	423	444	462	489	524	534	536	508	451	430	423
1945–50 Average...		70	71	74	77	82	87	89	89	85	75	72	71
Minimum		67	69	73	75	80	85	85	83	83	71	70	68
Maximum		75	72	76	79	84	90	91	90	87	79	75	75
(d) Absolute minimum temperatures to nearest °F.													
31. BERBERA	1945	65	65	68	74	74	77	85	81	81	69	68	65
	1946	64	66	69	71	77	82	80	77	80	70	67	64
	1947	63	70	70	73	77	81	88	86	74	71	69	63
	1948	60	68	71	73	76	84	88	87	78	71	68	63
	1949	60	65	70	69	78	81	88	78	74	68	67	67
	1950	64	60	70	71	76	77	80	76	79	71	67	65*
Total, 6 years		376	394	418	431	458	482	509	485	466	420	406	387
1945–50 Average...		63	66	70	72	76	80	85	81	78	70	68	65
Minimum		60	60	68	69	74	77	80	76	74	68	67	63
Maximum		65	70	71	74	78	84	88	87	81	71	69	65
(a) Absolute maximum temperatures to nearest °F.													
32. HARGEISA	1945	83	87	87	91	94	93	91	91	89	85	82	79
	1946	80	89	89	89	90	93	93	91	90	88	81	81
	1947	—	—	—	—	—	—	—	—	—	—	—	—
	1948	85	87	89	90	93	91	92	92	91	87	82	79
	1949	84	86	90	90	92	90	91	89	91	88	84	83
	1950	84	86	91	89	93	93	90	90	88	88	84	79
Total, 5 years		416	435	446	449	462	460	457	453	449	436	413	401
1945–46 & 1948–50 Average		83	87	89	90	92	92	91	91	90	87	83	80
Minimum ...		80	86	87	89	90	90	90	89	88	85	81	79
Maximum... ...		85	89	91	91	94	93	93	92	91	88	84	83
(b) Mean maximum temperatures to nearest °F.													
32. HARGEISA	1944	77	81	84	87	88	89	85	86	87	84	82	80
	1945	79	80	84	82	87	89	86	85	85	82	72	68
	1946	75	81	85	84	82	90	86	85	87	83	77	75
	1947	—	—	—	—	—	—	—	—	—	—	—	—
	1948	75	83	85	86	89	86	87	84	88	82	77	74
	1949	76	79	85	84	86	86	85	86	86	84	78	74
	1950	75	77	86	86	89	88	85	86	87	84	78	73
Total 6 years		457	481	509	509	521	528	514	512	520	499	464	444
1944–46 & 1948–50 Average		76	80	85	85	87	88	86	85	87	83	77	74
Minimum... ...		75	77	84	82	82	86	85	84	85	82	72	68
Maximum... ...		79	83	86	87	89	90	87	86	88	84	82	80

* NOTE.—Berbera R.A.F. Met. Station closed after 10.12.50.

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
(c) Mean minimum temperatures to nearest °F.													
32. HARGEISA	1944	54	56	60	63	65	64	63	63	64	59	59	59
	1945	55	55	58	67	64	64	64	63	63	59	59	57
	1946	53	53	57	60	67	63	62	62	62	59	55	51
	1947	53	57	60	62	64	63	63	68	62	59	57	52
	1948	52	58	67	64	65	65	64	64	64	61	57	54
	1949	53	55	59	63	65	64	64	63	64	60	56	56
	1950	54	54	59	61	64	62	63	64	63	53	50	49
Total, 7 years		374	388	420	440	454	445	443	447	442	410	393	378
1944–50 Average...		53	55	60	63	65	64	63	64	63	59	56	54
Minimum		52	53	57	60	64	62	62	62	62	53	50	49
Maximum		55	58	60	67	67	65	64	68	64	61	59	59
(d) Absolute minimum temperatures to nearest °F.													
32. HARGEISA	1945	49	50	50	56	61	60	60	61	61	54	53	50
	1946	48	48	52	57	57	58	60	58	59	54	50	46
	1947	45	51	51	55	57	60	60	64	59	55	53	49
	1948	45	53	56	59	61	62	62	61	61	56	52	49
	1949	44	49	55	57	59	62	62	60	61	54	50	51
	1950	47	48	54	58	61	61	61	62	58	45	40	42
Total, 6 years		278	299	318	342	356	363	365	366	359	318	298	287
1945–50 Average...		46	50	53	57	59	61	61	61	60	53	50	48
Minimum		44	48	50	55	57	58	60	58	58	45	40	42
Maximum		49	53	56	59	61	62	62	64	61	56	53	51
(a) Absolute maximum temperatures to nearest °F.													
44. BOSASO (BENDR KASIM)	1944	85	86	96	99	102	110	106	106	108	93	90	90
	1945	87	87	98	102	103	108	107	108	107	92	84	84
1944–45 Average...		86	87	97	101	103	109	107	107	108	93	87	87
(b) Mean maximum temperatures to nearest °F.													
44. BOSASO	1944	83	84	86	93	95	103	103	104	95	88	84	84
	1945	83	83	87	90	96	102	105	104	101	84	82	80
1944–50 Average...		83	84	87	92	96	103	104	104	98	86	83	82
(c) Mean minimum temperatures to nearest °F.													
44. BOSASO	1944	68	69	72	77	80	87	89	86	81	73	66	74
	1945	71	72	71	78	79	85	89	87	85	71	73	72
1944–45 Average...		70	71	72	78	80	86	89	87	83	72	70	73

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
(d) Absolute minimum temperatures to nearest °F.													
44. BOSASO	1944	64	65	64	73	74	82	82	79	77	67	64	65
	1945	65	67	63	71	74	78	85	83	82	65	62	64
1944–45 Average...		65	66	64	72	74	80	84	81	80	66	63	65
(a) Absolute maximum temperatures to nearest °F.													
45. ISKUSHUBAN	1944	87	91	97	98	106	105	104	104	104	102	92	92
(b) Mean maximum temperatures to nearest °F.													
45. ISKUSHUBAN	1944	86	87	91	95	101	101	97	99	100	94	90	87
(c) Mean minimum temperatures to nearest °F.													
45. ISKUSHUBAN	1944	63	63	66	71	75	77	80	78	75	67	66	67
(d) Absolute minimum temperatures to nearest °F.													
45. ISKUSHUBAN	1944	57	59	58	65	70	74	76	75	72	63	61	61
(a) Absolute maximum temperatures to nearest °F.													
47. JIBUTI (Observatory)	1944	88	88	92	91	98	109	110	112	104	94	90	89
	1945	88	89	91	94	97	111	113	111	110	94	88	87
	1946	86	87	92	92	98	115	114	110	111	98	91	88
	1947	88	87	90	94	98	112	114	110	110	95	91	89
	1948	87	86	92	93	98	112	112	113	111	99	91	89
	1949	87	92	89	93	106	112	112	113	111	97	92	86
Total, 6 years		524	529	546	557	595	671	675	669	657	577	543	528
1944–49 Average...		87	88	91	93	99	112	113	112	110	96	91	88
Minimum		86	86	89	91	97	109	110	110	104	94	88	86
Maximum		88	92	92	94	106	115	114	113	111	99	92	89

TABLE 10—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
(b) Mean maximum temperatures to nearest °F.													
47. JIBUTI (Observatory)	1944	84	85	85	89	94	99	103	105	95	91	89	87
	1945	86	86	87	90	92	99	106	104	103	91	86	85
	1946	85	84	85	89	94	110	107	104	97	91	88	86
	1947	85	84	87	90	92	98	105	103	100	92	87	85
	1948	84	84	88	90	94	103	107	106	97	93	89	86
	1949	85	85	87	90	95	101	104	105	100	94	87	83
Total, 6 years		509	508	519	538	561	610	632	627	592	552	526	512
1944–49 Average		85	85	87	90	94	102	105	105	99	92	88	85
Minimum		84	84	85	89	92	98	103	103	95	91	86	83
Maximum		86	86	88	90	95	110	107	106	103	94	89	87
(c) Mean minimum temperatures to nearest °F.													
47. JIBUTI (Observatory)	1944	73	76	77	80	83	87	87	87	85	80	78	77
	1945	76	76	76	79	82	86	88	87	87	80	76	74
	1946	72	74	75	80	83	88	87	85	84	80	76	73
	1947	73	76	77	80	82	86	88	85	86	80	77	73
	1948	72	76	77	80	82	87	88	87	87	82	76	74
	1949	73	74	77	78	84	87	87	86	85	81	76	73
Total, 6 years		439	452	459	477	496	521	525	517	514	483	459	444
1944–49 Average		73	75	77	80	83	87	88	86	86	81	77	74
Minimum		72	74	75	78	82	86	87	85	84	80	76	73
Maximum		76	76	77	80	84	88	88	87	87	82	78	77
(d) Absolute minimum temperatures to nearest °F.													
47. JIBUTI	1944	69	72	72	75	80	82	76	84	82	76	74	73
	1945	73	72	73	75	78	81	85	84	81	76	69	72
	1946	67	70	70	77	76	84	83	82	82	76	72	71
	1947	70	71	73	77	80	83	84	73	82	76	74	70
	1948	68	73	75	77	77	83	85	85	84	78	74	68
	1949	69	70	73	73	81	84	80	78	75	76	73	63
Total, 6 years		416	428	436	454	472	497	493	486	486	458	436	417
1944–49 Average		69	71	73	76	79	83	82	81	81	76	73	77
Minimum		67	70	70	73	76	81	76	73	75	76	69	63
Maximum		73	73	75	77	81	84	85	85	84	78	74	73

TABLE 11—*continued*

Station No.		Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	
32. HARGEISA (R.A.F.) ...	Average mean monthly maximum ...	76	80	85	85	87	88	86	85	87	83	77	74	1945–46 & 1948–50
	Average mean monthly minimum ...	53	55	60	63	65	64	63	64	63	59	56	54	*Average diurnal range* 23°F.
	Average monthly diurnal range ...	23	25	25	22	22	24	23	21	24	24	21	20	
	Average monthly absolute maximum	83	87	89	90	92	92	91	91	90	87	83	80	*Extreme absolute range*
	Average monthly absolute minimum	46	50	53	57	59	61	61	61	60	53	50	48	94°F. — 40°F. = 54°F.
35. GALKAYU	Average mean monthly maximum ...	104	105	107	103	100	96	94	96	100	100	103	103	*Pre-1940 Italian*
(Rocca Littorio)	Average mean monthly minimum ...	73	75	76	74	75	73	73	72	73	74	73	73	*Average diurnal range* ? 27°F.
(Italian Records)	Average monthly diurnal range ..	31	30	31	29	25	23	21	24	27	26	30	30	
44. BOSASO	Average mean monthly maximum ...	83	84	87	92	96	103	104	104	98	86	83	82	1944–45
(Bendr Kassim)	Average mean monthly minimum ...	70	71	72	78	80	86	89	87	83	72	70	73	*Average diurnal range* 14°F.
(R.A.F.)	Average monthly diurnal range ...	13	13	15	14	16	17	15	17	15	14	13	9	
	Average monthly absolute maximum	86	87	97	101	103	109	107	107	108	93	87	87	*Extreme absolute range*
	Average monthly absolute minimum	65	66	64	72	74	80	84	81	80	66	63	65	108°F. — 62°F. = 46°F.
45. ISKUSHUBAN (R.A.F.)	Average mean monthly maximum ...	86	87	91	95	101	101	97	99	100	94	90	87	1944 *only*
	Average mean monthly minimum ...	63	63	66	71	75	77	80	78	75	67	66	67	*Average diurnal range* 23°F.
	Average monthly diurnal range ...	23	24	25	24	26	24	17	21	25	27	24	20	
	Average monthly absolute maximum	87	91	97	98	106	105	104	104	104	102	92	92	*Extreme absolute range*
	Average monthly absolute minimum	57	59	58	65	70	74	76	75	72	63	61	61	106°F. — 57°F. = 49°F.
47. JIBUTI (Observatory)	Average mean monthly maximum ...	85	85	87	90	94	102	105	105	99	92	88	85	1944–49
	Average mean monthly minimum ...	73	75	77	80	83	87	88	86	86	81	77	74	*Average diurnal range* 13°F.
	Average monthly diurnal range ...	12	10	10	10	11	15	17	19	13	11	11	11	
	Average monthly absolute maximum	87	88	91	93	99	112	113	112	110	96	91	88	*Extreme absolute range*
	Average monthly absolute minimum	69	71	73	76	79	83	82	81	81	76	73	70	115°F. — 63°F. = 52°F.
48. EIL (Italian records)...	Average mean monthly maximum ...	89	89	92	93	97	96	94	95	96	94	92	90	*Pre-1940 Italian*
	Average mean monthly minimum ...	70	72	76	78	80	77	76	75	76	75	74	70	*Average diurnal range* 18°F.
	Average monthly diurnal range ...	19	17	16	15	17	19	18	20	20	19	18	20	
49. GUMBURU	Average mean monthly maximum ...	—	—	—	93	91	88	86	89	91	90	89	89	1950 *only* (*Ethiopian Civil*
(Sinclair/Ethiopia)	Average mean monthly minimum ...	—	—	—	75	75	73	72	70	71	69	67	64	*Aviation*)
	Average monthly diurnal range ...	—	—	—	18	16	15	14	19	20	21	22	25	*Average diurnal range* 19°F.
	Average monthly absolute maximum	—	—	—	97	96	93	90	93	97	95	91	91	*Extreme absolute range*
	Average monthly absolute minimum	—	—	—	71	69	71	70	68	69	60	62	61	97°F. — 60°F. = 37°F.

TABLE 12

DETAILED MONTHLY RELATIVE HUMIDITIES PER CENT, 1944–50

		January	February	March	April	May	June	July	August	September	October	November	December
Average relative humidity per cent (8.30 a.m.):													
5. GUDUBI	1947	35	41	43	43	50	41	41	41	35	46	44	39
	1948	38	47	40	44	46	46	—	52	49	64	57	53
	1949	53	52	54	—	47	40	40	37	35	34	39	37
	1950	37	43	46	45	38	39	40	30?	29	28	17?	53
Total, 4 years		163	183	183	132	181	166	121	160	148	172	157	182
1947–50 Average		41	46	46	44	45	42	40	40	37	43	39	46
Minimum		35	41	40	43	38	39	40	30	29	28	17	37
Maximum		53	52	54	45	50	46	41	52	49	64	57	53
10. LAS ANOD	1945	—	—	74	79	78	88	76	72	82	65	63	52
	1946	67	67	70	69	68	79	76	71	77	75	62	63
	1947	68	84	80	75	—	59	63	61	61	73	77	68
	1948	67	76	72	65	66	64	64	62	60	65	78	80
	1949	78	85	90	59	72	72	71	68	78	77	87	—
Total, 4/5 years		280	312	386	347	248	362	350	334	358	355	367	263
1945–49 Average		70	78	77	69	71	72	70	67	72	71	73	66
Minimum		67	67	70	59	66	59	63	61	60	65	62	52
Maximum		78	85	90	79	78	88	76	72	82	77	87	80
26. BURAO	1945	—	—	69	62	51	47	38	38	36	40	40	33
	1946	38	40	37	48	41	38	38	38	38	42	35	34
	1947	42	46	41	45	46	41	37	39	33	51	61	46
	1948	50	65	53	60	53	52	57	52	51	59	48	49
	1949	64	62	55	54	62	53	57	57	54	46	53	66
	1950	65	58	61	54	58	60	58	54	56	48	45	47
Total, 6 years		259	271	316	323	311	291	285	278	268	268	282	275
1945–50 Average		52	54	53	54	52	49	48	46	45	48	47	46
Minimum		38	40	37	45	41	38	37	38	33	40	35	33
Maximum		65	81	69	62	62	60	58	57	56	59	61	66
27. MANJA ASSEH	1945	79	76	62	75	88	—	—	—	56	—	—	—
	1946	75	78	49	70	71	—	—	—	—	—	—	—
30. SHEIKH	1945	72	78	58	55	60	71	71	60	62	63	77	64
	1946	73	53	58	69	66	61	60	59	59	60	56	62
	1947	73	70	67	56	64	63	60	66	51	51	63	60
	1948	70	71	55	66	61	75	83	61	56	62	59	69
	1949	69	70	68	39	63	63	81	91	90	89	76	79
	1950	87	79	80	71	71	71	69	66	75	61	69	75
Total, 6 years		444	421	386	356	385	404	424	403	393	386	400	409
1945–50 Average		74	70	64	59	64	67	71	67	66	64	67	68
Minimum		69	53	55	39	60	61	60	59	51	51	56	60
Maximum		87	79	80	71	71	75	83	91	90	89	77	79

TABLE 12—*continued*

		January	February	March	April	May	June	July	August	September	October	November	December
:rage relative humidity per cent (8.30 a.m.):													
BERBERA	1945	71	71	76	71	70	53	40	53	50	76	73	72
	1946	74	74	75	84	72	53	66	64	64	77	75	73
	1947	80	83	82	80	68	48	42	44	55	76	79	71
	1948	73	82	80	82	77	54	38	32	39	57	65	73
	1949	77	74	74	81	69	52	49	35	40	58	72	61
	1950	83	77	77	78	70	49	41	41	44	69	75	74*
Total, 6 years		458	461	464	476	426	309	276	269	292	413	439	424
1945–50 Average		76	77	77	79	71	52	46	45	49	69	73	71
Minimum		71	71	74	71	68	48	38	32	39	57	65	61
Maximum		83	83	82	84	77	54	66	64	64	77	79	74
NOTE.—*Berbera R.A.F. Meteorological Station closed after 10.12.50.													
HARGEISA	1945	64	61	58	44	55	56	58	56	56	51	64	67
	1946	71	58	50	64	59	54	37	37	57	60	65	63
	1947	71	67	66	57	53	55	56	60	55	50	62	68
	1948	68	86	56	63	58	60	57	54	55	66	67	69
	1949	61	62	50	46	49	51	51	53	50	48	60	71
	1950	68	65	60	55	51	53	52	48	52	40	53	60
Total, 6 years		403	399	340	329	325	329	311	308	325	315	371	398
1945–50 Average		67	67	57	55	54	55	52	51	54	53	62	66
Minimum		61	58	50	44	49	51	37	37	50	40	53	60
Maximum		71	86	66	64	59	60	58	60	57	66	67	71
BOSASO	1944	73	72	76	73	65	50	45	60	70	67	78	80
	1945	74	78	67	71	73	54	39	45	52	68	75	68
1944–45 Average		74	75	72	72	69	52	42	53	61	68	77	74
ISKUSHUBAN	1944	63	64	62	61	50	35	35	30	50	56	60	66
:rage relative humidity per cent (mean of 24-hourly readings):													
JIBUTI	1944	80	76	83	85	81	65	52	56	72	68	71	78
	1945	74	72	70	74	74	58	48	55	60	71	73	74
	1946	70	74	76	79	75	50	49	51	70	72	70	80
	1947	75	79	76	77	78	64	52	58	64	68	73	72
	1948	68	78	72	75	73	54	50	56	70	69	70	69
	1949	79	76	81	77	76	69	58	56	65	69	76	81
Total, 6 years		446	455	458	467	457	360	309	332	401	417	433	454
1944–49 Average		74	76	76	78	76	60	52	55	67	70	72	76
Minimum		68	72	70	74	73	50	48	51	60	68	70	69
Maximum		80	79	83	85	81	65	58	58	72	72	76	81
:rage relative humidity per cent (9.00 a.m.):													
GUMBURU	1950	—	—	—	73	60	55	53	53	55	62	58	53

164. Recording of humidities has been even less satisfactory than that of maximum and minimum temperatures. The importance of wet wicks on the wet bulbs at least half an hour before reading, the necessity for accurate reading of the two thermometers at the correct time and immediately the Stevenson screen is opened, and furthermore the calculations necessary for each day's humidity record, leave room for many errors to creep into the daily records, even before the monthly averages are calculated.

165. Burao and Sheikh are believed to have been efficiently kept humidity stations, but there seem to be surprising variations, and in the case of Burao a steady increase of humidity over a period of years. The statistics are given in Table 12 below for what they are worth. A few Somalis have been trained to read wet and dry thermometers quickly and accurately.

166. Humidity is of great importance both on account of low humidity (dryness) being the cause of the healthy and pleasant climate of the highlands, and, of course, in connection with agriculture. More records will probably be obtained when the importance of (perhaps hourly) micro-humidity in date fertilization and fruition, and in other agricultural processes, is realized by the Somali agriculturalists.

G. Wind

167. Compared with rainfall, the winds have been treated as a matter of minor importance. It was not possible to train native observers in the available time to guess reasonably accurately at the velocities. There are records of occasional gales from Jibuti, and in the old Protectorate Annual Reports from Berbera, but as a rule " strong winds " (Beaufort Scale) are frequent in June to August with the S.W. Monsoon, and rarely in the period of the N.E. Monsoon.

168. The records collected have been for the most part direction of ground wind only. This was obtained by making a smoke fire in the centre of an octagon of the eight points of the compass at 8.30 a.m. and 2.30 p.m. daily at some posts. (Some observers sang as they worked, and an interpreter informed one District Commissioner that an old man was casting spells by chanting over a fire built in a pentagon. And the D.C. believed it.) The results of these records are seen in Tables 13 and 14, below, whence it is seen that the N.E. Monsoon drops in April: the S.W. Monsoon is steadily blowing, starting in the south and east of the Protectorate about mid-May, and reaching the north and west a few days later.

169. The end of the S.W. wind is usually about the last ten days of September, and the N.E. Monsoon begins fairly regularly during October, becoming a steady N.E. Monsoon in October or early November.

170. The recording varied in reliability, but there was no possibility of collusion between observers, who had no preconceived ideas about the published official dates for the Khariff (S.W. Monsoon), or Kharif leave given to officials on the coast.

171. In fact from these records the S.W. " Kharif " Monsoon blows from mid-May until mid-September. The hot, calm weather between monsoons, however, may be expected for part or the whole of April and part or the whole of September, and the hot season may fairly be defined as the six months from April 1st to September 30th, although in fact it may sometimes be shorter.

172. Dust-devils are frequent, especially in the dry Plateau and Haud areas, and may often be seen as far as 70 miles away ; perhaps further.

173. More detailed records are obtainable from the R.A.F. Meteorological Station at Aden, and from Jibuti Observatory, where hourly records, high-level winds, velocities, etc., are recorded.

174, 175. (*Tables* 13 *and* 14.)

TABLE 13

DATES OF CHANGES OF PREVAILING GROUND WINDS
8.30 A.M. AND 2.30 P.M.

		END N.E.	STEADY S.W.	END S.W.	BEGIN N.E.	STEADY N.E.
1.	WAJALEH					
	1944	—	—	9.9	—	—
	1945	—	1.6	29.9	—	2.10
	1946	—	18.5	14.9	—	3.10
	1947	30.4	22.5	22.9	10.10	—
	1948	2.4	17.5	30.9	9.10	28.11
	1949	28.4	21.5	18.9	8.10	25.10
	1950	4.4	21.5	29.9	3.10	14.10
	Average	April	22.5	22.9	8.10	Oct./Nov.
2.	GEBILE					
	1945	—	20.6	26.9	—	30.9
4.	ODWEINA					
	1945	—	29.5	—	—	3.10
	1946	—	9.5	15.9	—	14.11
	1947	29.4	22.5	21.9	22.9	27.11
	1948	1.4	26.5	17.9	10.10	25.11
	1949	23.4	21.5	28.9	11.10	2.11
	1950	—	21.5	29.9	2.10	31.10
	Average	April	21.5	22.9	4.10	Oct./Nov.
6.	DANOT					
	1945	—	26.5	—	—	4.10
	1947	—	21.5	10.9	17.10	27.11
	1948	2.4	5.5	19.9	10.10	25.11
	1949	28.4	18.5	—	12.10	5.11
	1950	4.4	15.5	16.9	—	—
	Average	April	17.5	15.9	13.10	Oct./Nov.
7.	AINABO					
	1945	—	26.5	—	—	5.10
	1946	—	2.5	—	—	—
	1947	30.4	22.5	21.9	22.9	27.11
	1948	8.4	29.5	—	—	5.11
	1949	13.4	20.5	2.10	17.10	5.11
	1950	18.4	—	29.9	2.10	14.10
	Average	April	19.5	27.9	2.10	Oct./Nov.
8.	YOOBYABOH					
	1945	—	29.5	—	—	3.10
	1946	—	8.5	21.9	—	—
	1947	27.4	23.5	29.9	12.10	22.11
	1948	5.4	14.5	2.10	6.10	30.11
	1949	14.3	18.5	3.10	25.10	2.11
	1950	23.4	16.5	—	2.10	14.10
	Average	April	18.5	26.9	11.10	Oct./Nov.
9.	BER					
	1945	—	29.5	—	—	5.10
	1946	—	1.5	—	—	—
10.	LAS ANOD					
	1944	—	—	26.9	—	—
	1945	—	20.5	31.8	—	13.10
	1946	—	9.5	13.9	—	17.10
	1947	—	—	end Sept.	—	—
	1948	—	12.5	—	—	—
	1949	—	—	—	—	—
	1950	—	—	—	—	—
	Average	—	14.5	13.9	—	—

TABLE 13—*continued*

		END N.E.	STEADY S.W.	END S.W.	BEGIN N.E.	STEADY N.E.
11.	DONKUKOQ					
	1945	—	1.6	—	—	14.10
	1946	—	2.5	—	—	—
	1947	30.4	27.5	23.9	16.10	23.11
	1948	—	6.5	10.10	12.10	12.11
	Average	April	17.5	1.10	14.10	Oct./Nov.
13.	GARDO					
	1945	—	1.6	—	—	5.10
	1946	—	18.5	18.9	—	—
15.	HUDUN					
	1946	—	25.5	22.9	—	14.10
	1947	—	25.5	—	16.10	—
16.	DO'MO					
	1945	—	28.5	—	—	3.10
	—	—	—	—	—	—
	1947	—	28.5	—	11.10	5.11
	—	—	—	—	—	—
	1949	15.4	14.5	27.9	30.10	1.11
	1950	6.4	25.5	18.10	21.10	24.10
	Average	April	16.5	7.10	21.10	Oct./Nov.
18.	BIHEN					
	1945 (Nogal) ...	—	—	—	—	3.10
19.	EL AFWEIN					
	1946	—	6.5	—	—	—
20.	TALEH					
	1945	—	31.5	—	—	9.10
	1946	—	3.5	21.9	—	—
	1947	30.4	21.5	—	28.10	16.11
	1948	—	—	15.10	20.10	1.11
	1949	—	20.5	4.10	6.10	22.10
	1950	—	25.5	24.9	11.10	23.10
	Average	April	20.5	29.9	16.10	Oct./Nov.
21.	HANAN					
	1945	—	20.6	—	—	—
	—	—	—	—	—	—
	—	—	—	—	—	—
	1948	—	—	8.10	9.10	—
22.	DUR ELAN					
	1945	—	10.6	—	—	1.10
	1946	—	4.5	—	—	—
24.	ELAL					
	1945	—	2.6	20.9	—	6.10
	1946	—	14.5	—	—	—
	1947	—	—	21.9	—	—
	1948	12.4	20.5	30.9	17.10	—
	1949	14.4	—	26.9	—	1.11
	1950	—	—	—	9.10	—
	Average	April	22.5	24.9	13.10	Oct./Nov.
26.	BURAO					
	1945	—	27.5	21.9	—	3.10
	1946	—	10.5	15.9	—	14.11
	1947	22.4	23.5	23.9	16.10	28.11
	1948	4.4	22.5	14.9	9.10	10.11
	1949	16.4	24.5	27.9	7.10	4.11
	1950	25.4	26.5	8.9	29.9	9.12
	Average	April	22.5	18.9	8.10	Nov.

(S.W. Gales 8.6.45, 15.7.47, 19–21.6.48, 9.7.48, 5.8.48, 21.7.49, 1.9.49, 3.9.49, 6.9.49, 16.7.50, 26.7.50.)

H. Evaporation

176. No research was done on this very important subject. Table 15, below, shows the records from 1944 to 1949 taken from the "Bulletins Annuel du Service Météorologique: Climatologie" of Jibuti, kindly provided by the Director of Jibuti Observatory. It is hoped that Jibuti Observatory will be visited and similar evaporation-recording posts set up in the Protectorate.

177. (*Table* 15.)

TABLE 15

AVERAGE DAILY RATE OF EVAPORATION IN SHADE (IN MILLIMETRES)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
47. JIBUTI 1944 ...	2·2	2·4	2·0	1·8	3·0	4·8	11·4	9·9	5·5	5·6	5·0	3·9	4·8
1945 ...	4·6	5·2	5·4	4·8	4·5	9·1	11·9	10·5	9·3	5·6	4·7	4·8	6·7
1946 ...	4·6	4·2	4·0	4·0	5·5	13·4	14·4	13·1	6·9	5·2	5·4	2·5	6·9
1947 ...	3·9	3·8	4·3	3·5	2·7	6·7	11·9	8·5	7·7	5·9	4·8	4·8	5·7
1948 ...	3·7	3·8	4·6	3·9	4·4	10·8	12·8	9·8	6·4	3·8	3·4	3·1	5·9
1949 ...	2·1	1·8	1·5	2·4	2·7	5·4	7·0	7·5	6·7	5·3	3·5	1·7	4·0
Total, 6 years	21·1	21·2	21·8	20·4	22·8	50·2	69·4	59·3	42·5	31·4	26·8	20·8	—
Average, 1944–49	3·5	3·5	3·6	3·4	3·8	8·4	11·6	9·9	7·1	5·2	4·5	3·5	5·7

J. Pressure

178. The only atmospheric pressure records made by the General Survey were those in connection with altitudes, by making graphs of aneroid readings at places of known altitude for topographical contour-making purposes. The aneroids for this purpose were set at 1019·6 millibars.

179. Table 16 (below) however, shows records obtained from the R.A.F. meteorological centres of Aden and Nairobi, in which it is seen that, taking altitude into account, the pressures are fairly steady: lowest in July and highest in December, except for Mogadishu in the Southern Climatic Province referred to under temperatures (para. 157, above).

180. (*Table* 16.)

TABLE 16

TABLE OF 1200z PRESSURES

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
31. BERBERA 1947 (R.A.F.)	1,012·3	1,010·9	1,010·8	1,008·2	1,006·3	1,002·9	1,000·7	1,001·9	1,003·6	1,009·5	1,011·2	1,013·5
32. HARGEISA 1947 (R.A.F.)	864·3	863·8	864·0	863·2	862·8	862·3	861·1	861·9	862·6	864·4	864·6	865·1
44. BOSASO 1943 (R.A.F.)	1,011·8	1,011·3	1,009·5	1,009·4	1,005·8	1,003·3	1,001·7	1,001·9	1,004·2	1,009·9	1,012·3	1,013·8
47. JIBUTI 1947 (Observatory)	1,013·9	1,012·9	1,011·9	1,009·1	1,007·5	1,003·6	1,001·7	1,003·1	1,005·5	1,001·9	1,013·5	1,015·3
50. MOGADISHU (4 years : before 1944	1,009	1,008	1,009	1,008	1,009	1,011	1,012	1,012	1,011	1,010	1,008	1,007

CHAPTER VI

GEOLOGY

A. Introduction

181. The geological work proposed for carrying out by the General Survey was as follows:—

(i) Reconnaissance exploration of the potential mineral belt of the foothills and main scarp from Jibuti to Manja Yihin (including the making of any necessary 1 : 250,000 topographical maps of this area, and recording of general data for the area whilst geological work was being carried out).

(ii) Survey of water development possibilities, particularly in the waterless areas (but not the carrying out of any development).

(iii) General geological reconnaissance in any area covered for general survey purposes.

182. The Survey Officer, J. A. Hunt, is a geologist, and two other geologists were employed, each for two years, to carry out the Mineral Belt Survey (S. Stock) and the Water Development Survey (W. A. Macfadyen).

183. In the event this work was not completed for the whole area. Mr. Stock covered the lowlands from the eastern boundary (Manja Yihin) to as far west as Heis, and further exploration for minerals in this area is still recommended. Copies of Mr. Stock's reports were delivered to the Chief Secretary to the Government, Hargeisa, and to the Director of Colonial Geological Surveys, London, and are available for public inspection. They have been used in the compilation of this Report, especially for Illustrations 4 and 31, and notes on Mr. Stock's findings have been included in Annual Reports of the General Survey 1946 and 1947.

184. Dr. Macfadyen made a geological reconnaissance, using air photographs, of the Haud and Sawl Haud, and made recommendations for water drilling in both. He was, however, engaged for part of his tour on other duties (pasture report, date survey, station water supplies, etc.) and there remains much work to be done on the difficult surface geology of the Haud and Sawl Haud. His combined report "The Water Supply and Geology of parts of British Somaliland" is being published, probably in 1951, and is likely to remain the most comprehensive account of water supplies and possible water developments for many years to come. It should be a reference book in frequent use in all offices in the Protectorate.

185. Drilling on Dr. Macfadyen's borehole sites unfortunately had to be carried out after his tour of service was ended, and supervision of this boring therefore devolved upon the Survey Officer, who should have been employed on other work. This was owing to difficulties in obtaining the services of a drilling contractor. The contractor finally obtained only succeeded in drilling one of the six provisionally sited boreholes to the required depth, and that hole proved to be dry. The possibility of water at a reasonably economic depth for pumping in the Haud and Sawl Haud therefore remains problematical. Full details of the drilling campaign are given in the General Survey, 1949, Annual Report. In view of the water sands in the Eocene at Gumburu in Ethiopia (Ogaden), which are believed to have been found by drilling there, it is possible that the one completed borehole at Qaidr Boleh in the Protectorate Haud, might have struck water if drilling had been continued; but these sands had not then been heard of, the rig and driller provided by the contractor could not have continued this borehole, and the funds allotted for drilling having been expended, the drilling campaign had to be stopped at the end of 1949.

186. Other areas geologically mapped since the publication of "The Geology of British Somaliland" (Macfadyen 1933) by the writer are:—

(i) Zeila Plain.

(ii) Hargeisa-Haleya Valley.

(iii) Onkhor Area.

(iv) Golis-Guban.

The Zeila Plain and Hargeisa Valley surveys, with maps and sections, are in typescript at Government Headquarters, Hargeisa, and a summary of the Zeila Plain survey in the "Geological Magazine" (Hunt 1943). The geology of the Onkhor area was published (with map and sections) in the General Survey, 1945, Annual Report. The Golis-Guban survey is incomplete. The results of all these surveys, and of geological reconnaissances over much of the Protectorate and neighbouring Grazing Areas, have been used in the compilation of this Report; details of new work, including column-sections, have been published in the Annual Reports of the General Survey, 1944–49.

not connected with the General Survey, as well as the supervision of the drilling campaign in 1949, prevented the Survey Officer from carrying out the geological work which he had started to do in 1944 and 1945. It is hoped that a separate Geological Survey will be carried out by full-time geologists as soon as possible.

188. The following summary of the geology of the Somaliland Protectorate shows the present state of knowledge of the general geology of the Protectorate, excluding the work of the Somaliland Oil Exploration Co. (Shell), which is at present confidential. When the S.O.E.C. results are published their conclusions, where they vary from those reached by the General Survey, can be discussed. All air photographs and all the geological work carried out by the General Survey were made available to the S.O.E.C.

B. Summary of Geology of Somaliland Protectorate

(See also "Geology of British Somaliland" (Macfadyen 1933); and Illustration 31, in pocket.)

189. The AFRICAN BASEMENT (probably Archaean) consists mostly of granitic and dioritic gneisses and schists, with acid and basic plutonic intrusions, and some areas of metamorphosed sediments (Inda Ad Series). This series outcrops from the western boundary to the eastern, below and on the northward facing scarp of the Main Watershed range, except between about 46° 30′ E. and 46° 45′ E. where it is obscured in the Onkhor-Asseh-Wireg Gap. This series in which are the most hopeful potentially mineralized rocks, has not been sufficiently surveyed.

190. The TRIASSIC (Adigrat) sands, conglomerates, and rarely lavas, overlie the Archaean in some places.

191. JURASSIC shales and limestones within the Protectorate (Callovian-Portlandian) seem to have been laid down in basins or fault troughs, or later eroded away except where protected in such faulted troughs. Jurassic usually overlies the Archaean in the west (Borama district), sporadically in the lowlands of the Central Protectorate (where the type section is at Bihendula) and again regularly in the north-east of the Protectorate. The limestones are typically well bedded and weather in yellow and grey whale-back hills. South of the Protectorate is a great outcrop belt from Diredawa (9° 48′ N. 41° 50′ E.) to Isha Baadoa (Iscia Baidoa *ca.* 3° N. 44° E.). In the centre of the Protectorate the Jurassic locally contains some oil.

192. The CRETACEOUS lies above the Jurassic or directly on the Archaean (or on Triassic indistinguishable from itself), and in the west and central Protectorate is a great series of sandstones usually of desert type referred to as *Nubian Sandstone*. The Shabel and Hedod facies of red and green shales and sandstones occur in some places and are important impervious layers. Most of the Nubian, however, consists of varieties of sandstones and quartzites. Locally there are at the top of the series silicified trees in the west, some marly limestones and shales with rare Lignite lenses in the Central Protectorate, and increasing thicknesses of marine limestones in the east. These eastern limestones are represented also in the central area (south of Onkhor and Karin) in the lower part of the Nubian Series as yellow limestones amongst sandstones. There is nearly always some sandstone or sand at the very base of the system, though it may be only 10 to 200 feet thick. Rudists occur in the highest beds of the Al Hills.

193. Apart from the hard quartzites and limestone facies, the Nubian as a whole is softer than the overlying and underlying rocks, and gives rise to a ledge on the scarp of the Main Watershed Mountains. In the west of the Protectorate the Nubian is important in that it gives rise to a more porous soil, less caked with lime than most of the Plateau, and owing to a thinning of overlying Eocene in the west, the series extends southwards from the Main Watershed scarp.

194. The EOCENE consists of *Lower Eocene Limestones* (Auradu Series) usually massive at the base, and sometimes dolomitic. These massive limestones capping the softer Cretaceous, form the main topographical feature of the country in imposing cavernous, rusty reddish 200-foot cliffs, often above steep sandstone slopes of another 1,000 feet. Above these massive Auradu-type limestones are usually somewhat softer, more bedded limestones (Allahkajid type) in generally rather barren whitish-weathering hills, eroded into round-topped hills with ledged gorges between them. These hills look like rosettes on the aerial photographs, and outliers like "Nasa Hablod" near Hargeisa form striking landmarks. In the north and east there are some layers of Anhydrite near the top of the series.

TABLE 13—*continued*

		END N.E.	STEADY S.W.	END S.W.	BEGIN N.E.	STEADY N.E.
30. SHEIKH						
1943		—	—	23.9	—	—
1944		—	—	—	—	—
1945		—	28.5	24.9	—	3.10
1946		—	24.5	—	—	—
1947		22.4	26.5	22.9	15.10	27.11
1948		2.4	3.6	8.10	10.10	8.11
1949		16.4	23.5	—	—	28.10
1950		13.4	22.5	22.9	22.9	27.9
Average ... ... (S.W. gales 10.6.44.)		April	23.5	26.9	6.10	Oct./Nov.
31. BERBERA						
1945 ... ... (S.W. gales 10.6.44.)		—	—	22.9	—	1.10
32. HARGEISA						
1945		—	1.6	—	—	—
1948		1.4	—	11.9	—	—
38. MANDERA						
1949		—	17.5	—	—	—
1950		6.4	20.4	—	—	—
39. BORAMA						
1945		—	—	8.9	—	1.10
1947		—	23.5	—	—	—

TABLE 14

SUMMARY AVERAGE DATES OF CHANGE OF PREVAILING GROUND WINDS

	END N.E.	STEADY S.W.	END S.W.	BEGIN N.E.	STEADY N.E.
1. WAJALEH	April	22.5	22.9	8.10	Oct./Nov.
4. ODWEINA	April	21.5	22.9	4.10	Oct./Nov.
6. DANOT	April	17.5	15.9	13.10	Oct./Nov.
7. AINABO	April	19.5	27.9	2.10	Oct./Nov.
8. YOOBYABOH ...	April	18.5	26.9	11.10	Oct./Nov.
10. LAS ANOD ...	—	14.5	13.9	—	—
11. DONKUKOQ ...	April	17.5	1.10	14.10	Oct./Nov.
16. DO'MO	April	16.5	7.10	21.10	Oct./Nov.
20. TALEH	April	20.5	29.9	16.10	Oct./Nov.
24. ELAL	April	22.5	24.9	13.10	Oct./Nov.
26. BURAO	April	22.5	18.9	8.10	Oct./Nov.
30. SHEIKH	April	23.5	26.9	6.10	Oct./Nov.
Average dates ..	1–30.4	19.5	19.9	11.10	27.9–9.12
47. JIBUTI	—	? June to	? August	—	—

187. After 1945 the claims of administrative duties, other general survey work, and duties not connected with the General Survey, as well as the supervision of the drilling campaign in 1949, prevented the Survey Officer from carrying out the geological work which he had started to do in 1944 and 1945. It is hoped that a separate Geological Survey will be carried out by full-time geologists as soon as possible.

188. The following summary of the geology of the Somaliland Protectorate shows the present state of knowledge of the general geology of the Protectorate, excluding the work of the Somaliland Oil Exploration Co. (Shell), which is at present confidential. When the S.O.E.C. results are published their conclusions, where they vary from those reached by the General Survey, can be discussed. All air photographs and all the geological work carried out by the General Survey were made available to the S.O.E.C.

B. Summary of Geology of Somaliland Protectorate

(See also " Geology of British Somaliland " (Macfadyen 1933); and Illustration 31, in pocket.)

189. The AFRICAN BASEMENT (probably Archaean) consists mostly of granitic and dioritic gneisses and schists, with acid and basic plutonic intrusions, and some areas of metamorphosed sediments (Inda Ad Series). This series outcrops from the western boundary to the eastern, below and on the northward facing scarp of the Main Watershed range, except between about 46° 30′ E. and 46° 45′ E. where it is obscured in the Onkhor-Asseh-Wireg Gap. This series in which are the most hopeful potentially mineralized rocks, has not been sufficiently surveyed.

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193. Apart from the hard quartzites and limestone facies, the Nubian as a whole is softer than the overlying and underlying rocks, and gives rise to a ledge on the scarp of the Main Watershed Mountains. In the west of the Protectorate the Nubian is important in that it gives rise to a more porous soil, less caked with lime than most of the Plateau, and owing to a thinning of overlying Eocene in the west, the series extends southwards from the Main Watershed scarp.

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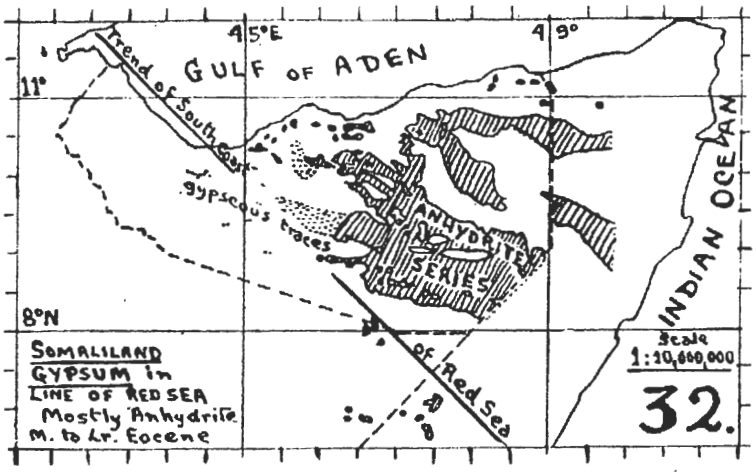
195. (*Illustration* 32.)



196. Above the Lower Eocene Limestones is the *Anhydrite Series*, in line with a south-east continuation of the Red Sea (i.e. north-east of the line Bulhar-Bohotleh). Sections of over 1,000 feet of this series have been measured, but these thicknesses may be due in part to slumping. Along the eastern boundary limestones of Lower Eocene type and cherts occur in increasing amounts within the Anhydrite Series. The Anhydrite weathers in typically rolling, flattish downland, little flat-topped hills being formed by thin limestone or chert layers, and permanent gypseous water being abundant in the joint-fractured rock. Some salt (NaCl) waters also occur. The series is an important, easily worked building stone, but often misused in the construction of water cisterns for which it is unsuitable. An oil-shale lense occurs in the Anhydrite at Las Anod.

197. Above this series, and in much the same north-eastern triangle of the Protectorate are the *Middle Eocene Karkar Series* limestones, which form features on both flanks of the Nogal Valley and at Buran. An estuarine facies of the Middle Eocene is the *Daban Series* of the Daban, south-east of Berbera, the varied rocks of which might yield some products of minor economic importance (e.g. roofing flags, lithographic stone, etc.). The Daban Series extends upwards into probably the Lower Oligocene.

198. There is often some Anhydrite in the Middle Eocene, both in the estuarine Daban Series, and in the Karkar Series, which forms the waterless Sawl Haud and the eastern part of the Haud waterless southern Plateau area.

199. It is believed that the Eocene described above becomes more sandy in facies towards the south-west, and that south-west of the Bulhar-Bohotleh line the Haud waterless Plateau consists of the derivatives of a poor littoral and terrestial sandy representative of the northern limestones. The suggested sandy Lower Eocene, however, is not yet distinguishable from the underlying Cretaceous Nubian Series.

200. OLIGOCENE occurs probably at the top of the estuarine Daban Series, and as traces of marine limestone on the coast in the extreme north-east of the Protectorate.

201. Above the Eocene (or sometimes Oligocene) is a major break in deposition.

202. MIOCENE occurs to a little way inland of the coast of the Gulf of Aden, *Dubar Series* beds resting unconformably on older rocks down to the Archaean. These outcrops of white, green, and yellow shales, marls, and some grits, overlain by limestone and some coral, seem to have been a fringing reef along an old shore line of the Gulf of Aden. Inland of the reef there are traces of a coastal lagoon in some places.

203. The QUATERNARY starts with the *Older Boulder Beds*, at the end of which period the *Aden Volcanic Series* extrusions of Basalt, Rhyolite, etc., are believed to have occurred. These volcanics form flat-topped black basalt hill ranges, eroded by gorges into the underlying rocks (e.g. Sawer, Hegebo, and Jau Plateaux). The older boulder beds have only been identified north of the Main Watershed scarp, as have the Aden Volcanic Series. *'Younger Gravels* are those formed after the main Aden Series Basalt extrusions (but not after the Rhyolites) and merge upwards into the other alluvials—sandy clays, ferruginous and calcareous sandy muds, river sands, etc., and on the coast several levels of coral reef and sands. The correlation of the coral reefs with the terrace gravels is not yet clear.

204. DUNE SANDS, and sandy deserts do not cover a very great area of the Protectorate, the commonest superficial deposit being a reddish, calcareous, sandy clay with traces of iron oxide, and calcareous nodules which may coalesce either on the surface or somewhat below it to form *Kankar* secondary reddish limestone, often pseudo-pisolitic. The reddish, calcareous, sandy clay is called *Gareh*. The Kankar limestone is usually only found on the surface of hill slopes, or at or near the surface where water has stood in old lakes.

205. The general TECTONIC SCHEME is dominated by Gulf of Aden (roughly east to west) and Red Sea direction (north-west to south-east) faults.

206. Earth movements interrupted the deposition of Jurassic sediments in the central part of the Protectorate, and trough-faulting probably occurred early in the Cretaceous, during which epoch both main systems of faulting probably occurred with some erosion and redeposition of Terrestial, Estuarine, and some Littoral beds. The Eocene sea probably covered all the Protectorate except the Borama district (see illus. 11, para. 94), during Lower Eocene times, shrank back to north-east of the Bulhar-Bohotleh line in the Anhydrite Series period, and overflowed again a little towards the south-west in Middle Eocene times.

207. The main faulting of the Gulf of Aden rift (complicated by Red Sea and other direction faults) then occurred, and there was some slumping of the Middle Eocene and Anhydrite Series from the uplifted Main Watershed Mountains. This main uplift was broken by the Onkhor-Asseh-Wireg-Nogal north-west to south-east faulted trough which has always been a line of weakness and trough-deposition since Jurassic times. South of Onkhor there is a tectonic outlier of the Main Watershed uplift, representing the continuation of the Al Hills across the Asseh gap, to the north of the main Harar Plateau-Golis uplift. On the south flank of the Al Hills there is some southward faulting, probably caused by the slumping of the Anhydrite and Middle Eocene to the south of the uplift.

208. Later earth movements are proved by the present exposures of Miocene (Dubar) coral reefs up to nearly 1,000 feet above sea level, and a succession of lower reefs of recent date, by the superimposed drainage system (e.g. Daban), eroded terrace gravels, and erosion of the basalt peneplains of Aden Series volcanic age. Slight earth tremors are still sometimes recorded at Zeila and Jibuti, and buckling of the present-day coral reef has been observed at Zeila. Any uplifting movements, however slight, are bound to cause some rejuvenation of the drainage system with consequent erosion.

C. Geological Map (Illustration 31, in pocket)

209. In this map on the scale of 1 : 1,000,000 in black and white, it has not been possible to show all the detail surveyed, especially in the Archaean Igneous and Metamorphic Series, nor to mark dips or faults.

210. The ARCHAEAN BASEMENT SERIES should be geologically surveyed in more detail.

211. The TRIASSIC ADIGRAT SYSTEM, or at least a sandy or conglomeratic series, is nearly always found at the base of the Jurassic where this is exposed. In the north-east of the Protectorate (Stock), the Triassic extends a little farther to the west than the Jurassic, suggesting that both Triassic and Jurassic were eroded away in the centre of the Protectorate in Cretaceous times. There were, however, unconformities in these two systems, and it is therefore probable that the present distribution of these rocks, which are found only in outliers in the central area, and not at all in the Plateau region of the Protectorate, is due in part to deposition in embayments (probably trough faulted) and in part to later faulting and erosion.

212. The Bihendula type-section of the Jurassic (Macfadyen 1933), is proved by its fossils to be Callovian to Portlandian in age. The newly discovered outcrop at Hanladid, south of Onkhor, is Argovian to Kimmeridgian, but its base is not exposed. At 49° E. on the boundary, Bajocian to Kimmeridgian occurs.

213. Near the base of the Cretaceous there are frequently green and red sandy shales, sometimes slightly salty and selenitic. There is almost invariably a thin layer of sandstone between these shales and the Archaean Basement rocks. These beds, first recognized in 1939, have been named the *Hedod Beds* (north of Hargeisa) and have since been recognized at Milmil, Adadleh, Bokh and Darreh As (on Golis Scarp) and at Sheikh. They tend to form a salty soil (Aro) and sometimes hold up some brackish water. Both soil and water are valued salt-licks for domestic stock. The clay is used in making local cooking pots (Derri). Little vegetation grows on the salty soil of the Hedod beds, and " badlands " are frequently formed by the erosion resulting from this lack of vegetative cover. (This might be improved by planting Daran, see para. 299, below.)

214. At a somewhat higher horizon are the *Shabel Beds*, green and red shales and sands alternating with green, buff, and white sandstones. The Dagahh Shabel oil seepages are in these beds, and some observers consider it a superficial layer of Daban Series (Middle Eocene to Lower Oligocene) lying unconformably on Jurassic and Cretaceous rocks. The Shabel beds are often salty with brackish springs. An identical series of beds occurs near the base of the Cretaceous in the Onkhor area at Hanladid, Gesa Jifen, Mur Dahan, Mur Jir Jir, and Adawein. In the last two named localities (and possibly in all this area) they are clearly overlain by thin yellow Cretaceous limestones.

215. These beds of yellow Cretaceous limestone seem to come in at about 45° 45′ E. (Ambal and Tar, Wyllie 1929) and increase in importance eastwards through the Onkhor area and Dabgadot, until in the eastern Al Hills only about 200 feet of sandstone at the top remain above the marine limestone Cretaceous facies. In the uppermost littoral Cretaceous limestones of the Al Hills are found Rudists and Orbitolina.

216. In the Onkhor area at the top of the Cretaceous there are also sometimes developed lenses of littoral sandy limestone and marls with some lenticles of lignite and shale (Hedhed and Sùbera). There is also a littoral shale near the top of the Cretaceous in the Suria Malableh Pass, south of Berbera, and some lenses of lignite in the Nubian of the Biyo Gora Gorge.

217. The Cretaceous of the rest of the Protectorate, however, consists almost entirely of various types of vari-coloured sandstone and liver-brown weathering quartzites. False bedding is frequent, and from practically uncemented sands the sandstones vary from those cemented with a little lime, to others with selenite crystal cement, iron oxide, and silica.

218. Where the Shabel facies and uppermost bituminous marls are developed there seem to have been some Red Sea direction embayments, and Jurassic rocks tend to be exposed in the same area.

219. The Plutonic rock (Nordmarkite) of the Shilemadu Range in the Nogal is now believed not to be Archaean basement, but to have been intruded into the Cretaceous Nubian sandstone. Lavas and tuffs of the Danot Series have now been found amongst the Nubian sandstones from Awareh to Danot, though the division between Cretaceous and Lower Eocene in this area is not certain.

220. The Lower Eocene Sea extended as far west as Gebile (43° 30′ E.). The series thickens towards the east, and from Gal to Al Maskat there are basal dolomitic limestones, typically cavernous and brown weathering. Dolomitic limestone was also found in the Lower Eocene in the borehole at Qaidr Boleh.

221. Macfadyen observed one foot of Nubian sandstone underlying Lower Eocene limestone at Tawn. It is suggested, however, that in the south-west Haud, above the Qari-Milmil escarpment, some of the sandy ferruginous, and tuff and basalt beds sporadically exposed, are in part littoral and terrestial representatives of the Lower Eocene. This, however, is unproved and mentioned here because the theory is outlined on the accompanying map (illus. 31, in pocket).

222. In the east of the Protectorate the upper part of the Lower Eocene becomes more gypseous. The typical white, Allahkajid-type, thin-bedded, limestones (Macfadyen 1933) become increasingly interbedded with layers of anhydrite and dark, brown-weathered cherts, and these continue upwards into the *Anhydrite Series* with similar cherts. About 49° E. in the Daror and Nogal Valleys the cherts and limestones occurring in the Anhydrite Series itself, often make it difficult to discern the boundaries between Lower Eocene, Anhydrite Series, and Middle Eocene, the fact being that the Anhydrite Series is merely a local facies between the other two. In the Daror Valley and Mijertein (Somalia) the boundaries between these rocks are further masked by Pleistocene terraces consisting mostly of chert and limestone pebbles.

223. In the Anhydrite Series in the Nogal there are some salty waters (NaCl), and it was hoped that by mapping the salt plant Daran (*Sueadia* Spp), and the contours of this area, the saltier layers would be clearly defined. The necessary detailed work, however, was never completed. It seems possible that this eastern basin of Anhydrites with some NaCl and outer " aureole " of dolomitic limestone in the Lower Eocene (see illus. 32, para. 195), might prove to contain deposits of other and more valuable evaporites in the Nogal, towards which it is believed that slumping has occurred, down-dip from the Al Hills, to cause an enormous thickness of the Anhydrite Series.

224. Westwards the Anhydrite sea stretched to about as far as Waridad, but there are traces of gypsum in the wells at Burao, Eik, Odweina and in a borehole at Dogoshe.

225. Upwards the Anhydrite Series passes into the *Middle Eocene*, Daban estuarine Series in the north-west, Karkar marine facies in the east and south-east, getting sandier towards the south-west of the Ain (Macfadyen 1933). Further evidence of this littoral facies towards the west and south has now been found. An oil-shale occurs in the Anhydrite Series of a well in Las Anod. Nubian type sandstones and quartzites are found just south of the Ain at Abar Anale, where they are believed to be part of the Anhydrite Series: their position with regard to marine Karkar limestone with Nummulites gizehensis nearby is uncertain. Further south-east there are similar sandstones at Balleh Harei, and large blocks of such sandstones are found along the boundary between Bohotleh and Darkein Genyo. The correlation is obscure, but this Nubian type sandstone appears to occur so often in proximity to gypseous soil and surface scatterings of yellow chert chips, that it is believed that the Anhydrite Series and Middle Eocene, to the south-west of the Bulhar-Bohotleh line, are represented by a littoral to terrestial facies of gypseous beds, cherts and sandstones. These beds, whatever their age, have been found in Qaidr Boleh borehole to overlie normal marine Lower Eocene.

226. This south-west province of the Eocene may be classed with the Daban Series (Macfadyen 1933), though it is more terrestial in origin, consisting (in boreholes) mostly of more or less calcareous sands, often containing a good deal of tuff-like material, some quartzites, cherts, thin-bedded limestones, white-bedded silts (Siga Adr borehole), light tuffy clay, brown clay, and at Dogoshe borehole some selenite and Allahkajid type white and purple shales with glauconite pellets.

227. At Gudubi is a brownish sandy limestone with Ostreas identified as of Cretaceous to Recent age, overlying a tuffy marl. This is believed to be of about Anhydrite Series age, but there is no palæontological proof.

228. How far these (probably Middle Eocene) terrestial beds extend to the south-west before being replaced by the suggested underlying sands and volcanics of the Lower Eocene and Cretaceous is not certain, but further exploration of the Haud may make correlation of the yellow cherts and other rock types possible.

229. Tentatively a line of division between Cretaceous and Lower Eocene has been sketched on the map (illus. 31) from Gebile to Sigoden to Sirro, and the top of the Lower Eocene from Odweina to Qutar/Gudubi to Tukayel (Hagoga) to near Gumburu.

230. The Daban Series described in detail by Macfadyen (Macfadyen 1933) is also believed to be represented by some of the boulder beds and other deposits in the Onkhor area, near Las Khoreh, and in the Maag towards Elayu. It is, however, difficult to distinguish these beds from the later " Older Boulder Beds," except in the Daban where the unconformity is clear (even where Older Boulder Beds are plastered at an angle against cliffs of Daban Series boulder beds). Some brown sandstones of Nubian type south of Elayu can be matched by sandstones of the Bohotleh area on the southern boundary. Barrington Brown (1931) classes these sandstones as Anhydrite Series and Stefanini (1924) describes the Anhydrite Series as consisting partly of sandstones. Detailed work on the coastal area should make it possible, where fossiliferous Dubar (Miocene) beds occur, to map the Older Boulder Beds and Daban Series boulder beds separately, and this might assist in the elucidation of the suggested Daban facies about the southern boundary.

231. MIOCENE as described by Macfadyen (1933) has been mapped in the Onkhor area, where white and mustard-yellow fossiliferous marls are overlain by limestones and coral reefs. These are often transgressed by Recent coral reefs.

232. The OLDER BOULDER BEDS of Geriado on the southern edge of the Zeila Plain are cut by a basalt dyke which feeds a flow overlying and baking them. This whole complex of Older Boulder Beds, basalt flow, and some overlying unbaked Younger Gravels, are uptilted by a small acid volcanic vent of later age consisting of Rhyolites, Quartz Porphyry, and volcanic ashes. Pebbles of basalt are not found in the Older Boulder Beds, but are common in the Younger Gravels of the Zeila Plain (Hunt 1942). The distribution of pebbles of the Geriado Quartz Porphyry in the Younger Gravels throws some light on the disused drainage channels of the Zeila Plain.

233. Much work remains to be done on the Post-Eocene deposits of the Protectorate, and such work may prove of value in connection with water supplies.

234. A Quartzite gravel occurs at Laf Dirindir, about eight miles west of Burao, probably indicating an old river channel deriving Quartzite from the Cretaceous of the Sheikh gap in the Golis-Wogr Range. Such a river might have drained into the Bokh drainage system. Capture by the Nogal-Tug Der river may account for the disuse of the Bokh Valley.

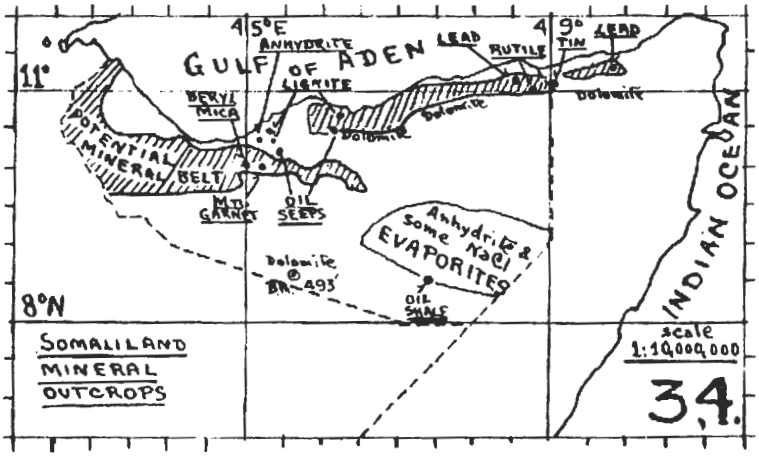
235. MALAS of the Hargeisa Valley, holding up water in the Hargeisa Wells at 15 to 20 feet below the surface, was long assumed to be a recent marl derived from the Eocene scarps above the valley. The word "Malas" is also used in Somali for white marls, often used to dress and bleach the hair. The Malas of Hargeisa Wells, however, is not calcareous at all, and is presumably a white silt derived from the Cretaceous of the valley.

236. The areas covered by Hunt, Macfadyen and Stock are shewn in the route map (illus. 2, para. 52), on which, however, the actual routes of Stock in the north-east lowlands have not been detailed, and those of Macfadyen are only shown where he has travelled and Hunt has not.

D. Minerals

237. The Potential Mineral Belt, indicated on Illustration 34 below, has not been thoroughly explored, and large areas have only been sketched in from a distance. In view of the need for a geological survey to explore the mineral possibilities, the following notes on known mineral occurrences will be sufficient for this Report.

238. (*Illustration* 34.)



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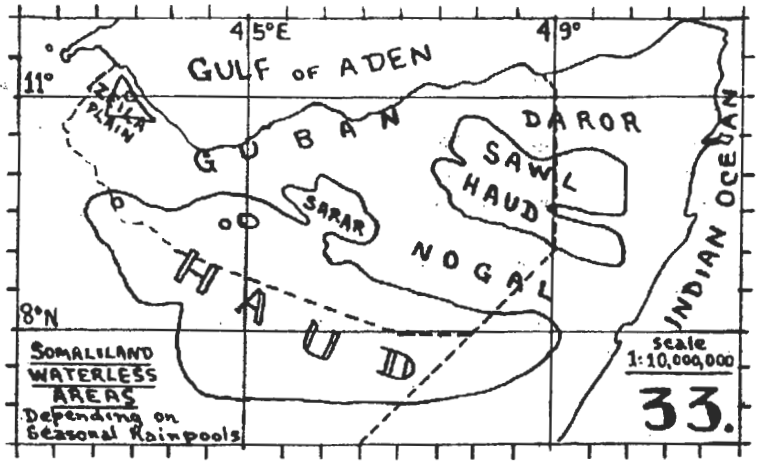

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(i) Surface rainfall pools (Balleh).
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(iii) Wells in river bed alluvials (Las).
(iv) Rock pools (El) or wells in sand-filled natural rock reservoirs.
(v) Boreholes.

262. The rainfall pools exist temporarily in any suitable depression from a few hours to as much as several months. Some lakes, acres in extent, are formed in the Haud " waterless " area, and may sometimes last through the year either on the surface or in shallow wells in the lake bed. Usually, however, the larger pools, when filled by rain, last from six weeks to three or four months. These pools are at present the only supply in the Haud and Sawl Haud waterless areas (illus. 33, para. 260). Most are natural pools, but some have been dug or improved and many more artificial pools and storage cisterns are needed.

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265. Similar Las-type wells occur at intervals in most dry river beds (Tugs), but are of less importance in the northern lowlands where there are abundant alternative sources of supply (streams and rock wells). They become important again along the coast where salt water and coral reefs hold up fresh water in the sands of the estuary areas of most intermittent streams.

266. In the Hargeisa-El Dere line the depth from ground surface level to water surface varies from about 16 feet at Hargeisa to about 100 feet at El Dere. The water is held up by a white silt (Malas) in the Hargeisa valley, probably by slightly gypseous Eocene shales in the central part of the line of wells, and by the reddish calcareous pebbly alluvial clay (Ghareh) at Burao and El Dere. At Burao the " Ghareh " is slightly gypseous.

267. Rock wells are particularly common in the granites and other igneous rocks of the Archaean and in the fissured joints of the Anhydrite Series (illus. 31, pocket).

268. Boreholes have been drilled successfully to water at Silil (10° 59′ N. 43° 26′ E.) and Tug Wajaleh (9° 37′ N. 43° 17′ E.). The shallower boreholes at Taqusha near Zeila, Borama, Hargeisa and Burao are to previously known sources of hand-dug well supply, with the exception of a few of the Hargeisa wells, drilled to a lower-level water-sand.

So far water has not been found by deep drilling in the central part of the waterless Haud (where it is most needed) except probably at Gumburu (6° 55′ N. 45° 55′ E.) in Ethiopian Ogaden.

269. Water supplies depend on:—

(i) A source of water: either rainfall or (rarely) a static sub-surface supply of " fossil " water.

(ii) A permeable bed through which the water may pass, and in which it may collect (unless on the surface).

(iii) An underlying impermeable bed, which prevents the water from sinking down more quickly than the overlying permeable bed is replenished by further rainfall; or an impermeable bed in the shape of a trap.

270. As regards " traps " for water, it may be noted that these are illustrated by the simple S-bend sanitary trap. The problem for oil exploration geologists is to find efficient upward traps, and for the water exploration geologist to find the downward ones. The two systems of traps are complementary.

271. The rainfall of Somaliland has been dealt with in Chapter V above, and sufficient data for normal water supply investigation purposes are given in Table 5 (para. 139).

272. The spring water which comes to the surface along the coastal belt, Biyo Kulul (11° 14′ N. 49° 18′ E.), Hur (10° 41′ N. 45° 56′ E.), Gal (10° 36′ N. 45° 57′ E.), Bihen Gaha (10° 25′ N. 45° 39′ E.), Bihendula (10° 10′ N. 45° 08′ E.), Biyo Gora (10° 23′ N. 45° 12′ E.) and Dubar (10° 20′ N. 45° 05′ E.) and others, is almost certainly replenished by rain falling on the permeable Cretaceous and forced up by faulting to the surface. It is often hot but this may be due to the depth to which it has penetrated before it rises rapidly to the surface up fault fissures.

273. The strata known to be impermeable to water exposed in the Protectorate are as follows:—

(i) Quaternary and Recent...	Calcareous and gypseous terraces, Red Ghareh Plateau sub-soil (para. 282). Hargeisa Valley white silts. Coral reefs. Dune sand impregnated with sea water, Aden Volcanic Series lavas.
(ii) Tertiary	Miocene Dubar marls. Middle Eocene marls. Anhydrite Series. Basal Lower Eocene dolomites and marls.
(iii) Cretaceous	Bituminous shales and marls at top. Shabel facies near base. Hedod facies at base.
(iv) Jurassic	Shales (interbedded with fissured limestones).
(v) Archaean...	Basement rocks below weathered surface zone.

274. The problem for the water geologist in the Plateau region is to find a porous reservoir rock overlying one of these impermeable beds, supplied by a source of water and preferably in the form of a collecting trap. As the surface is so much obscured in the Plateau south of the Main Watershed, it is difficult to foretell the position of these rocks, where they occur beneath the surface cover of Recent alluvials.

275. The beds which may contain water are the following:—

(i) Surface sands, dunes, river sands, and gravels.

(ii) Fissured Anhydrite.

(iii) Fissured massive Lower Eocene limestones.

(iv) Nearly all the Nubian facies of Cretaceous.

(v) Fissured Jurassic limestones.

(vi) The uppermost weathered and fissured twelve feet or so of Archaean Basement rocks.

276. The superficial deposits are less regular, and it is often difficult to foresee which beds are likely to be permeable and which are not. The Haud series, which is believed to be in part a terrestial facies of Eocene, has not been thoroughly surveyed and may contain unknown permeable and impermeable layers. In the drilling carried out in the central Haud in 1949, both permeable and impermeable beds were penetrated, but no water was struck. Further drilling is required to prove or disprove the existence of water within economic pumping depth in this area.

224. Westwards the Anhydrite sea stretched to about as far as Waridad, but there are traces of gypsum in the wells at Burao, Eik, Odweina and in a borehole at Dogoshe.

225. Upwards the Anhydrite Series passes into the *Middle Eocene*, Daban estuarine Series in the north-west, Karkar marine facies in the east and south-east, getting sandier towards the south-west of the Ain (Macfadyen 1933). Further evidence of this littoral facies towards the west and south has now been found. An oil-shale occurs in the Anhydrite Series of a well in Las Anod. Nubian type sandstones and quartzites are found just south of the Ain at Abar Anale, where they are believed to be part of the Anhydrite Series: their position with regard to marine Karkar limestone with Nummulites gizehensis nearby is uncertain. Further south-east there are similar sandstones at Balleh Harei, and large blocks of such sandstones are found along the boundary between Bohotleh and Darkein Genyo. The correlation is obscure, but this Nubian type sandstone appears to occur so often in proximity to gypseous soil and surface scatterings of yellow chert chips, that it is believed that the Anhydrite Series and Middle Eocene, to the south-west of the Bulhar-Bohotleh line, are represented by a littoral to terrestial facies of gypseous beds, cherts and sandstones. These beds, whatever their age, have been found in Qaidr Boleh borehole to overlie normal marine Lower Eocene.

226. This south-west province of the Eocene may be classed with the Daban Series (Macfadyen 1933), though it is more terrestial in origin, consisting (in boreholes) mostly of more or less calcareous sands, often containing a good deal of tuff-like material, some quartzites, cherts, thin-bedded limestones, white-bedded silts (Siga Adr borehole), light tuffy clay, brown clay, and at Dogoshe borehole some selenite and Allahkajid type white and purple shales with glauconite pellets.

227. At Gudubi is a brownish sandy limestone with Ostreas identified as of Cretaceous to Recent age, overlying a tuffy marl. This is believed to be of about Anhydrite Series age, but there is no palæontological proof.

228. How far these (probably Middle Eocene) terrestial beds extend to the south-west before being replaced by the suggested underlying sands and volcanics of the Lower Eocene and Cretaceous is not certain, but further exploration of the Haud may make correlation of the yellow cherts and other rock types possible.

229. Tentatively a line of division between Cretaceous and Lower Eocene has been sketched on the map (illus. 31) from Gebile to Sigoden to Sirro, and the top of the Lower Eocene from Odweina to Qutar/Gudubi to Tukayel (Hagoga) to near Gumburu.

230. The Daban Series described in detail by Macfadyen (Macfadyen 1933) is also believed to be represented by some of the boulder beds and other deposits in the Onkhor area, near Las Khoreh, and in the Maag towards Elayu. It is, however, difficult to distinguish these beds from the later " Older Boulder Beds," except in the Daban where the unconformity is clear (even where Older Boulder Beds are plastered at an angle against cliffs of Daban Series boulder beds). Some brown sandstones of Nubian type south of Elayu can be matched by sandstones of the Bohotleh area on the southern boundary. Barrington Brown (1931) classes these sandstones as Anhydrite Series and Stefanini (1924) describes the Anhydrite Series as consisting partly of sandstones. Detailed work on the coastal area should make it possible, where fossiliferous Dubar (Miocene) beds occur, to map the Older Boulder Beds and Daban Series boulder beds separately, and this might assist in the elucidation of the suggested Daban facies about the southern boundary.

231. MIOCENE as described by Macfadyen (1933) has been mapped in the Onkhor area, where white and mustard-yellow fossiliferous marls are overlain by limestones and coral reefs. These are often transgressed by Recent coral reefs.

232. The OLDER BOULDER BEDS of Geriado on the southern edge of the Zeila Plain are cut by a basalt dyke which feeds a flow overlying and baking them. This whole complex of Older Boulder Beds, basalt flow, and some overlying unbaked Younger Gravels, are uptilted by a small acid volcanic vent of later age consisting of Rhyolites, Quartz Porphyry, and volcanic ashes. Pebbles of basalt are not found in the Older Boulder Beds, but are common in the Younger Gravels of the Zeila Plain (Hunt 1942). The distribution of pebbles of the Geriado Quartz Porphyry in the Younger Gravels throws some light on the disused drainage channels of the Zeila Plain.

233. Much work remains to be done on the Post-Eocene deposits of the Protectorate, and such work may prove of value in connection with water supplies.

234. A Quartzite gravel occurs at Laf Dirindir, about eight miles west of Burao, probably indicating an old river channel deriving Quartzite from the Cretaceous of the Sheikh gap in the Golis-Wogr Range. Such a river might have drained into the Bokh drainage system. Capture by the Nogal-Tug Der river may account for the disuse of the Bokh Valley.

235. MALAS of the Hargeisa Valley, holding up water in the Hargeisa Wells at 15 to 20 feet below the surface, was long assumed to be a recent marl derived from the Eocene scarps above the valley. The word "Malas" is also used in Somali for white marls, often used to dress and bleach the hair. The Malas of Hargeisa Wells, however, is not calcareous at all, and is presumably a white silt derived from the Cretaceous of the valley.

236. The areas covered by Hunt, Macfadyen and Stock are shewn in the route map (illus. 2, para. 52), on which, however, the actual routes of Stock in the north-east lowlands have not been detailed, and those of Macfadyen are only shown where he has travelled and Hunt has not.

D. Minerals

237. The Potential Mineral Belt, indicated on Illustration 34 below, has not been thoroughly explored, and large areas have only been sketched in from a distance. In view of the need for a geological survey to explore the mineral possibilities, the following notes on known mineral occurrences will be sufficient for this Report.

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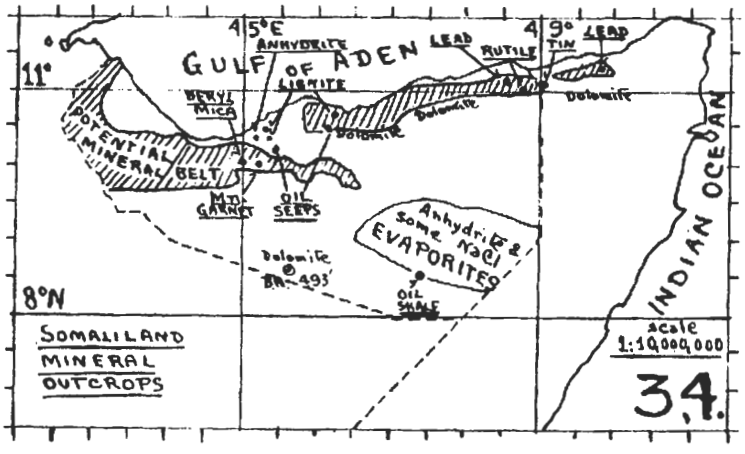

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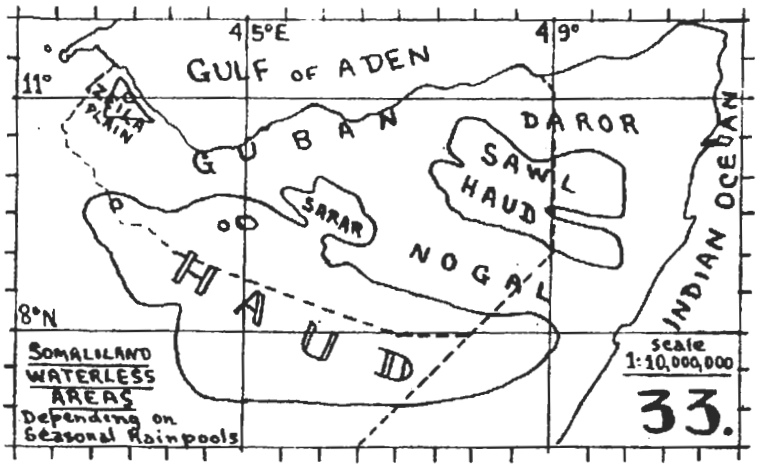

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265. Similar Las-type wells occur at intervals in most dry river beds (Tugs), but are of less importance in the northern lowlands where there are abundant alternative sources of supply (streams and rock wells). They become important again along the coast where salt water and coral reefs hold up fresh water in the sands of the estuary areas of most intermittent streams.

266. In the Hargeisa-El Dere line the depth from ground surface level to water surface varies from about 16 feet at Hargeisa to about 100 feet at El Dere. The water is held up by a white silt (Malas) in the Hargeisa valley, probably by slightly gypseous Eocene shales in the central part of the line of wells, and by the reddish calcareous pebbly alluvial clay (Ghareh) at Burao and El Dere. At Burao the " Ghareh " is slightly gypseous.

267. Rock wells are particularly common in the granites and other igneous rocks of the Archaean and in the fissured joints of the Anhydrite Series (illus. 31, pocket).

268. Boreholes have been drilled successfully to water at Silil (10° 59′ N. 43° 26′ E.) and Tug Wajaleh (9° 37′ N. 43° 17′ E.). The shallower boreholes at Taqusha near Zeila, Borama, Hargeisa and Burao are to previously known sources of hand-dug well supply, with the exception of a few of the Hargeisa wells, drilled to a lower-level water-sand.

So far water has not been found by deep drilling in the central part of the waterless Haud (where it is most needed) except probably at Gumburu (6° 55′ N. 45° 55′ E.) in Ethiopian Ogaden.

269. Water supplies depend on:—

(i) A source of water: either rainfall or (rarely) a static sub-surface supply of " fossil " water.

(ii) A permeable bed through which the water may pass, and in which it may collect (unless on the surface).

(iii) An underlying impermeable bed, which prevents the water from sinking down more quickly than the overlying permeable bed is replenished by further rainfall; or an impermeable bed in the shape of a trap.

270. As regards " traps " for water, it may be noted that these are illustrated by the simple S-bend sanitary trap. The problem for oil exploration geologists is to find efficient upward traps, and for the water exploration geologist to find the downward ones. The two systems of traps are complementary.

271. The rainfall of Somaliland has been dealt with in Chapter V above, and sufficient data for normal water supply investigation purposes are given in Table 5 (para. 139).

272. The spring water which comes to the surface along the coastal belt, Biyo Kulul (11° 14′ N. 49° 18′ E.), Hur (10° 41′ N. 45° 56′ E.), Gal (10° 36′ N. 45° 57′ E.), Bihen Gaha (10° 25′ N. 45° 39′ E.), Bihendula (10° 10′ N. 45° 08′ E.), Biyo Gora (10° 23′ N. 45° 12′ E.) and Dubar (10° 20′ N. 45° 05′ E.) and others, is almost certainly replenished by rain falling on the permeable Cretaceous and forced up by faulting to the surface. It is often hot but this may be due to the depth to which it has penetrated before it rises rapidly to the surface up fault fissures.

273. The strata known to be impermeable to water exposed in the Protectorate are as follows:—

(i) Quaternary and Recent...	Calcareous and gypseous terraces, Red Ghareh Plateau sub-soil (para. 282). Hargeisa Valley white silts. Coral reefs. Dune sand impregnated with sea water, Aden Volcanic Series lavas.
(ii) Tertiary	Miocene Dubar marls. Middle Eocene marls. Anhydrite Series. Basal Lower Eocene dolomites and marls.
(iii) Cretaceous	Bituminous shales and marls at top. Shabel facies near base. Hedod facies at base.
(iv) Jurassic	Shales (interbedded with fissured limestones).
(v) Archaean...	Basement rocks below weathered surface zone.

274. The problem for the water geologist in the Plateau region is to find a porous reservoir rock overlying one of these impermeable beds, supplied by a source of water and preferably in the form of a collecting trap. As the surface is so much obscured in the Plateau south of the Main Watershed, it is difficult to foretell the position of these rocks, where they occur beneath the surface cover of Recent alluvials.

275. The beds which may contain water are the following:—

(i) Surface sands, dunes, river sands, and gravels.

(ii) Fissured Anhydrite.

(iii) Fissured massive Lower Eocene limestones.

(iv) Nearly all the Nubian facies of Cretaceous.

(v) Fissured Jurassic limestones.

(vi) The uppermost weathered and fissured twelve feet or so of Archaean Basement rocks.

276. The superficial deposits are less regular, and it is often difficult to foresee which beds are likely to be permeable and which are not. The Haud series, which is believed to be in part a terrestial facies of Eocene, has not been thoroughly surveyed and may contain unknown permeable and impermeable layers. In the drilling carried out in the central Haud in 1949, both permeable and impermeable beds were penetrated, but no water was struck. Further drilling is required to prove or disprove the existence of water within economic pumping depth in this area.

277. Details of pre-1949 boreholes are given in Dr. Macfadyen's combined Report, and for the 1949 drilling campaign in the General Survey, 1949, Annual Report. Certainly the great " Bokh " dry valley across the near Haud from Bedr Wanak (9° 35′ N. 44° 24′ E.) and Go'o (9° 47′ N. 44° 56′ E.) to near Bohotleh (8° 14′ N. 46° 19′ E.) discovered in 1943, and later surveyed in more detail by Dr. Macfadyen, should be a favourable line for experimental borehole drilling.

278. Records of spates in dry river beds (Tugs) and of fluctuations in water levels, have been kept regularly in Burao. The Burao General Survey well records are shown in Table 17 below. The slow rate of percolation and the importance of the " drawing off " factor (controlled largely by the distribution of rainfall and therefore stock in other areas) account for the apparent anomalies in these records: e.g. the high level of the water table in 1950, because (not although) 1950 was a year of drought and the stock was not watering much at Burao.

279. (*Table* 17.) See page 106.

F. Soils

280. A preliminary soil map was given in the General Survey, 1944, Annual Report, but much revision of this is needed. Briefly the Main Watershed Range, due to its uplifting, is still being severely eroded, especially because the considerable rainfall on the watershed is irregular and sporadic and there are considerable areas of bare rock with only pockets of soil amongst them.

281. In the lowlands along the Gulf of Aden, sandy and gravelly fans from the steep watershed scarp are as a whole not very fertile except where the present-day water courses and their deltas give rise to vegetation (e.g. Zeila Plain, Wahen: 10° 20′ N. 44° 30′ E.).

282. On the south side of the Main Watershed (and to some extent on the widest part of the Zeila Plain), where the rocks dip gently to the south and south-east (on the Zeila Plain to the north-east), there are usually finer grained surface deposits, the commonest being a reddish, calcareous sandy clay (Ghareh), with traces of iron oxide and calcareous nodules.

283. Most of the soil of the country is calcareous and, in the east and south-east, gypseous. In the west and south-west the soil is more sandy and tends to be somewhat less calcareous: it is therefore better drained, and as this area also has a more constant fair rainfall, it tends to form more humus, and produce a generally better soil than further east.

284. The Archaean Basement rock areas, and Cretaceous Nubian outcrops (illus. 31, pocket), given sufficient rainfall, tend to form similar less calcareous soils. The greatest part of the country is so calcareous and sometimes gypseous, that secondary limestone or gypsum tends to form, caking irrigated soil, or forming hard pans of Kankar, at or a little below the surface where lakes have existed. Screes on limestone hills are often cemented by secondary limestone leached out of the rocks by occasional rainfall and evaporated by the hot sun.

285. A variation of soil may be expected where volcanic outcrops occur (illus. 31, pocket).

286. The soil depends not only upon the geology, but also upon the climate. There is no doubt that the Main Watershed areas are being heavily eroded, especially by the intermittent spates caused by irregular rainfall. To the north of the Main Watershed much material is carried out to sea, but to the south it is spread out by rivers which never flow to the sea, forming the " Dohos " (fans or inland deltas) which are such valuable agricultural areas. The danger to these is wind erosion, and careful control is necessary to prevent denudation of the soil by the destruction of the natural vegetative cover, which will occur in cleared areas unless the soil is rationally cultivated or planted, and the soil protected.

287. In the last century the balance was naturally adjusted to preserve the soil on which the nomadic tribes grazed their stock. Development and invention have upset this balance and protection of the scanty soil must be a part of every developmental programme, whether it be agricultural, the cutting of roads, increased use of motor vehicles in watering stock, or any other new factor which is bound to upset the nicely adjusted balance of soil productivity in a semi-desert area inhabited by nomadic stock-herders.

TABLE 17

LEVEL OF WATER IN BURAO SURVEY BUNGALOW GARDEN WELL AT END OF EACH MONTH

	Level to nearest foot	No. of days of spate	Level to nearest foot	No. of days of spate	Level to nearest foot	No. of days of spate	Level to nearest foot	No. of days of spate	Level to nearest foot	No. of days of spate	Level to nearest foot	No. of days of spate
	1945	1945	1946	1946	1947	1947	1948	1948	1949	1949	1950	1950
January	—	0	83	0	82	0	82	0	84	0	81	1
February	—	0	83	0	82	0	83	0	84	0	81	0
March	—	0	84	0	83	2	84	0	86	1	83	0
April	95	0	85	4	83	4	85	3	87	2	83	0
May	89	7	84	4	82	5	86	8	87	9	84	0
June	86	1	83	2	81	5	84	8	88	4	85	8
July	85	3	82	4	81	4	83	2	85	6	85	10
August	84	4	82	5	81	1	82	5	83	12	82	10
September	82	11	81	2	81	7	82	2	81	6	80	9
October	82	2	81	1	80	0	82	6	80	1	78	0
November	82	0	81	0	81	1	82	1	80	2	78	0
December	83	0	81	0	81	0	83	0	81	0	78	0
Total No. of spates... ...	—	28	—	22	—	29	—	35	—	43	—	38

NOTE.—Levels were measured weekly in feet and inches from ground surface to water level.
Other records were printed in Annual Reports.
In April 1945 the well was being drawn from regularly : it takes 36 hours to refill to the level of the water table after drawing ceases.
The effects of the spates of the Tug Der (caused by rain on the Golis range) are not reflected in the well level for three to four weeks, though some of the stock wells nearer the tug are affected at once. The water level of the Burao Wells as a whole are lowest when stock is watering in large quantities.
Rain elsewhere results in stock going to rain pools and new grazing, and the level of the water-table rises within about 36 hours of cessation of stock-watering, irrespective of surface flood water or local rain in Burao.

CHAPTER VII

FLORA

A. Purpose

288. During the course of the General Survey, an independent two-year Botanical Survey (1944–46) was carried out by Glover and Gilliland. Some of their results have been published (Glover 1947, and Gilliland 1947).

289. For the purposes of this General Survey, however, the plan adopted at the beginning of the Survey (General Survey, 1944, Annual Report) will be adhered to since it is not the purpose of the General Survey to record detail which is being published elsewhere.

290. The following account is of the general botany of the country as observed by the writer during reconnaissance of the area as a whole. It is not meant to replace any of the work of the Botanical Surveys but is a necessary description of botanical factors leading up to the human ecology of Somaliland. The Somali names of plants are used, since the Somali grazier has a considerable knowledge of the botany of his own area, and it has been a principle of reconnaissance that much information must be obtained from the Somali himself, since the whole area could not be covered in seven years by one observer.

291. Generally speaking the plants seem to have migrated from the south and west (since this has been land longer than the north and east) with the exception of the salt-loving plants which migrated along the coast as the Tertiary and Recent Lagoons became land.

292. The three major factors controlling the migration of the plants are:—

(i) Altitude.

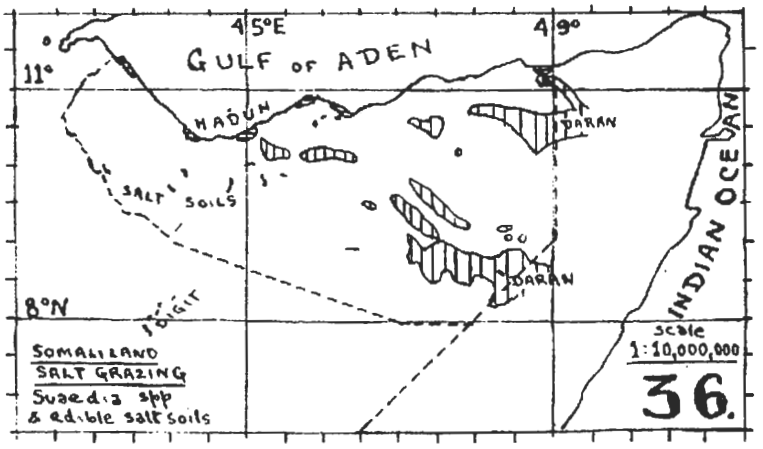
(ii) Soil type.

(iii) Rainfall.

As stated in Chapter VI (para. 283, et seq.) most of the soil is more or less calcareous (limy), and north-east of a line from Jibuti and Bulhar to Bohotleh (illus. 32, para. 195) it is often gypseous and sometimes salty.

B. Gypseous and Salty Areas

293. (*Illustration* 36.)



294. Along the salty sea coast (near Zeila up to an altitude of 50 feet) the HADUN bush (*Suaedia fruticosa*) predominates in many places.

295. In the lower and probably saltier parts of the Anhydrite (gypseous) valleys inland (see illus. 32, para. 195) DARAN (*Limonium* spp, *Statice cylindrifolia*, etc.) abounds, and it is believed that by detailed mapping its presence may be found to indicate salty layers in the Anhydrite Series.

296. Above the Daran horizon, i.e. forming a periphery on the flanks of the Daran Valleys, AFDAHOLLE (*Zygophyllum hildebrantii*) is believed to form a zone with an outer aureole of HIGLU (*Cadaba heterotricha*) which grows typically in " elephant clump " shaped trees dotted about the open plains to beyond the boundaries of anhydrite exposures, but probably always with its roots in or near gypsum.

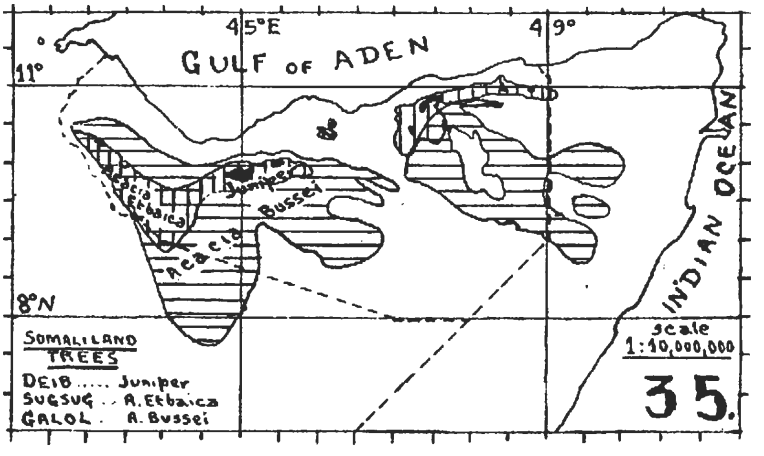
297. Higlu thus indicates proximity to gypseous soil or anhydrite rock, though the top soil round it may be free of gypsum. Detailed mapping of these and other salt- or gypsum-loving plants (e.g. ADEH the twigs of which are used as tooth-brushes) in conjunction with detailed contour mapping, might yield interesting geological results.

298. Possibly the GULAN (*Salsola fœtida*) indicates traces of gypsum or other salinity in the soil, e.g. in the Burao area, but its distribution has not been mapped.

299. The distribution of Daran and Hadun is shown in Illustration 36, para. 293. These plants grow from sea level up to at least 7,000 feet, and being succulents they can withstand prolonged droughts. Their distribution and migration is therefore entirely dependent on the salinity of the soil. Since they form an important food, as well as a source of salt for camels (and to a less extent other stock), it is believed that the best camel country is within reach of the areas where they grow. Camels usually go to salt about once a month or two months after which they must be watered. Those which graze exclusively on Daran and Hadun assemblages (e.g. some on Zeila Plain and some in Nogal) are watered every day. Gulan, an inferior source of salt, is also used by stock but has to be visited more frequently than Daran. Gulan can apparently migrate over non-salty areas (having a wind-borne seed), whereas Hadun and Daran can only exist on very salty soils and therefore have not migrated to the smaller salty areas of the west and south-west. It is believed to be propagated vegetatively and could probably be transplanted to such areas, where it would be a boon to graziers on a small scale, especially in the salty " bad lands " such as the area where the Hargeisa-Burao road crosses the upper Daldawan. Plenty of Daran here might also help to check the erosion so typical of salty soils with poor vegetation cover.

C. Non-Saline Areas

300. (*Illustration* 35.)



301. DAIB (*Juniperus procera*, the " Cedar " of Lebanon) occurs in a few isolated remnants of forest, usually above 5,000 feet (illus. 5, para. 71, and illus. 35, above), some of the trees growing to about 70 feet in height. The trees have been exploited for timber, sometimes cleared by burning for gardens, and to a less extent destroyed by burning " to frighten lions " and by cutting for Christmas trees in recent years. The wood is not much used for fuel as the Somali dislikes the smell and prefers charcoal-yielding hardwoods.

302. The trees have persisted, in spite of destruction by man, usually away from motorable tracks or in the better guarded forest reserves. There are some on the hills north of Borama, and many on the Golis Range, and above 5,000 feet on the Marso ledge on the north face of Golis. They exist on Wogr (the eastern continuation of Golis), are abundant on Surud and Daloh north of Erigavo, and to a less extent occur at intervals along the Al Hills, and in the Qofleh-Guveneh Mountains south of Onkhor.

303. At Surud and Daloh they grow down to 6,791 feet on the southern slope and 4,725 feet on the northern slope in the " mist belt " facing the Gulf of Aden, where there tends to be some rainfall in most months. There are a few on the northern face of Qofleh at 3,415 feet, and at Yafr and Damr above Las Khoreh at 6,190 feet. Generally speaking they are only prolific above 5,000 feet on north-facing slopes and 6,000 feet on the southern side of the main scarp.

304. Some concern has been expressed not only at the destruction which has occurred, but at the paucity of young trees. The Daib trees are often festooned with lichen, which is sometimes collected and exported to Arabia.

305. DOSOK (*Buxus hildebrandtii*) grows mostly on the steeper north-facing slopes of the main scarp, down to about 2,500 feet. On the southern slopes it grows at 4,600 feet at Sheikh, but only above 5,925 feet on the dry southern dip slope of the Al Hills.

306. SUGSUG (*Acacia etbaica*—the Wait-a-bit thorn) grows generally between 4,000 and 7,000 feet (illus. 5, 6, and 35). It grows occasionally at a lower altitude (Burao 3,420 feet, northern side of Qofleh 3,415 feet, and near Adad Kulaleh 3,000 feet). The area above 4,000 feet where this tree is prolific is an important zone of high rainfall. Sugsug, unlike Galol and Bil'il, will grow on gyspum or non-saline soil indiscriminately. It appears to be absent in the " cedar " forests (Daib), whether on account of altitude or competition being uncertain. As there is a rainfall of 12 to 20 inches in the area between 4,000 and 7,000 feet, its powers of resistance to prolonged drought are not known.

307. GALOL (*Acacia bussei*) is probably the most important tree for the Protectorate Somalis From its roots, which extend to considerable distances just below the surface, are made the framework of movable houses. From its bark are woven camel mats (Kibit), water vessels and ropes. It is used in tanning, is an excellent hardwood, and is employed as firewood and in making charcoal. The young green, and ripened red bean fruit (Dimbil) is used to some extent as fodder, and the leaves and young branches are browsed by stock.

308. Large tracts of Galol (often many acres) are found dead in some areas. It has been suggested that these " dead forests " are due to:—

(i) Erosion caused by overstocking and overgrazing.
(ii) Change of climate and lessening of rainfall.
(iii) Lowering of water table caused by (i) and (ii).
(iv) Ring barking, root cutting, charcoal burning, savage branch lopping, etc.
(v) Grass burning amongst the trees.
(vi) Preservation in some areas of trees dead of old age.
(vii) Disease or attacks by boring beetles, etc.

The problem remains unsolved, though probably all (and certainly (iv)) contribute to the existence of the dead Galol tracts. Interesting points are that such " dead forests " nearly always do consist largely of Galol trees: that the Galol is the most-sought-after tree for Somali domestic purposes ; and that " ant-hills " (termite mounds) are rare among these dead Galol-tree forests.

309. Roughly speaking the Galol grows only between altitudes of 3,000 and 5,000 feet, and will not grow on gypseous or saline soils, though a few dwarf trees up to two feet high are sometimes seen a few hundred yards in from the edge of a gypsum plain. The Galol must have migrated across the 3,000-foot Topographic Col just south of El Afwein, before the Middle Eocene limestones were stripped by erosion from the gypseous tracts which now cross the Col. It appears to have reached the southern slopes of the Al Hills by way of the calcareous gravel fans (e.g. Jidali) which cross the gypsum plains of the Anhydrite Series. It is found at Medishe, Jidali, and north of Garah on the Las Khoreh track, but has failed to cross the Al Hills to the eastern coastal lowlands (Makhir coast), because the only passes lower than 5,000 feet are barred by gypseous soil. A few trees occur at the foot of the central (Golis-Wogr-Ashararet) scarp down to 2,000 feet altitude, but they are rare and have failed to migrate northwards across the gypseous Las Dureh-Dur Elan trough to the Qofleh-Guveneh mountains, south of Onkhor. Galol is known to grow in areas of annual rainfall of from one to 20 inches, on any soil, calcareous, sandy, granitic, alluvial, including rocky sub-soil, so long as it is not saline or gypseous, and within its altitude limits.

310. BIL'IL (*Acacia mellifera*) is usually in low, flat-topped, bush-like trees with a central tuft, and easily noticed broad, flat pods, like the " Honesty " of cottage gardens. It grows on non-saline soil up to 4,000 feet but only becomes common below 3,200 feet. It does not seem to have reached the lowlands of the Gulf of Aden coastal tract, but in the Northern Frontier District of Kenya it is found as low as 200 feet above sea level. It shows a preference for the rich, red, ferruginous, sandy, calcareous soils of the Haud and Sawl Haud, more especially in gently sloping depressions, where run-off of rainfall is slow. Groves of large Bil'il trees some 15 feet high, are therefore likely sites for digging ballehs (water storage tanks). It grows in areas of annual rainfall two to ten inches.

311. MARAH (*Acacia arabica*) with its margaritic pods, tends to grow in similar soil and depressions to those favoured by Bil'il, but usually between 3,000 and 5,000 feet.

312. QODA (*Acacia spirocarpa*) is a name for several sub-species of Acacia spirocarpa. The spiral green pods turn yellow and are collected as fodder for stock (Damel). One sub-species, growing to about 40 feet high, occurs mostly around seasonal pools and along intermittent river courses (Tugs). Other Qoda grow on all soils and at all altitudes within the Protectorate, and though less sought after than the Galol, they form a useful substitute where Galol is absent for domestic purposes. Qoda has a well-developed tap root.

313. GOB (*Zizyphus mauritiana*) grows mostly along the banks of intermittent stream beds and has abundant edible little fruits.

314. LEBI (*Delonix elata*) grows below about 2,500 feet on both sides of the Main Watershed. It has a showy flower, and its hollow limbs often contain some water, perhaps breeding mosquitoes. It has been suspected of showing a preference for manganese-bearing soils, but this suspicion is unproved.

315. REDAP (*Albizzia anthelmintica*) becomes abundant in the Haud a little lower than the Lebi.

316. KIDI (*Balanites glabra*) with green spiky stems and little leaf, grows amongst Galol and Sugsug in the highlands and is a useful shade and fencing tree.

317. KULAN (*Balanites orbicularis*) differs from Kidi in having somewhat larger leaves, and growing only in the lowland Guban towards the Gulf of Aden. The fruit is shelled, boiled, and eaten.

318. YE'EB (*Cordeauxia edulis*) grows in probably slightly gypseous soil at about 2,000 feet in the easternmost corner of Ethiopia. The nut is an important local food. Ye'eb has been tried but failed to grow at Burao. It should be tried at Manja Asseh gardens, or in gypseous soil in the Daban. Burao is probably too high.

319. GUM TREES, from which commercial gums are extracted and exported, are a matter for specialist research. The MOHOR (*Boswellia* spp) and MAIDI (*Boswellia freereana*) of the Ohkhor area seem to grow mostly on cliff faces of the basal Lower Eocene Dolomitic limestones.

320. DAAR (*Aloe* spp) is worthy of special mention with the trees described above. It grows on almost any soil type probably above 2,000 feet, and is used to smear the sore backs of camels to prevent their biting themselves. It is proving useful in replanting devastated areas in Hargeisa Station, and is used widely in dyeing grass and palm fronds for weaving, to a deep blue-black.

321. HEG (*Sanseveria* spp) is used for local rope-making, mats, etc., but the fibre is much shorter than the commercial sisal.

322. AU (*Hyphaene thebaica*) and MAIDO (*Phoenix reclinata*) which grow in permanent water, whether gypseous or not, are used in mat-making, but the best mats are made of grass or bark.

D. Grazing

323. Much specialist botanical work has been done on the grasses, but much remains to be done. The best-known grasses only are noted here.

324. DAREMO (*Chrysopogon aucheri*) is the favourite grass of Somali graziers. It grows in the Galol belt (illus. 35, para. 300) and somewhat lower on any soil not rocky.

325. DIHE (*Sporobolus* spp) is also a popular grass especially for sheep and goats. It has a wider altitude range than Daremo, and is often the dominant grass on rocky soil from the Haud, over the Main Watershed, and down into the Las Dureh-Dur Elan lowlands.

326. DARIF (*Pennisetum dichotomum, et al.*) and DANKAREH (*Panicum turgidum*) grow profusely in the Zeila Plain, and in the river beds and fans of the lowlands.

327. GUGANGUB (*Eragrostis haraensis*) is widespread in the Sawl Haud and in the coastal belt.

328. MAJEN (*Aristida* spp) vies with Daremo from about 3,000 feet downwards in the Haud.

329. DUR (*Andropogon* spp) (to be distinguished from the Casuarina tree DUR) grows below about 4,000 feet on calcareous soil. It is usually associated with termite mounds, and together with these flourishes on any calcareous area, even a few yards in extent. A drift of limestone pebbles sprayed onto a gypseous surface by a stream in flood will often suffice, but neither termites nor Dur occur on gypseous soil. Dur is not a very valuable grass for grazing, but the young shoots are eaten, and the six-foot-high tussocks and belts of the grass form a useful reserve of fodder, if not too dry and hard, when smaller grasses fail. It is also a useful wind and water break, stopping lines of grass seed from being blown or floated right away.

330. The grasses which grow in the seasonal rainpools are not much valued for grazing, though of these SADEHHO (*Dactyloctenium* spp) is worthy of mention.

331. JILAB (*Indigofera sparteola*) is probably the most important of a number of abundant small plants which form important browsing for stock. It grows especially on alluvial plains, at most altitudes.

332. The important salt grazing has been described above, and the browsing of tree branches is an alternative feed for stock. There is an enormous number of plants edible to stock, but the Acacias (Sugsug, Galol, Qoda, Bil'il, Qansa, Sarman, Jerin and others) are much used and often badly cut about by herdsmen when other foodstuffs fail. Many graziers have so far failed to learn to cut off only the *lateral* branches of these trees for their stock to browse, with the result that the crowns of many trees are destroyed in each dry season, to the impoverishment of the country.

333. It is interesting to record that in some areas the trees are encroaching upon open grassy plains (e.g. Banka Odan south of Hargeisa and San Yera south of Burao). As the trees grow inwards the grass decreases amongst them. The writer, however, cannot agree that destruction of trees will therefore result in more grass growing. The field-of-fire made around Burao early in this century caused a little desert dust-bowl, which has been improved by protecting trees and bushes from stock and golfers around the civil area. On the military side there are still very few trees, but there is practically no grass either.

334. The landing grounds for aircraft made between 1919 and 1940 form an interesting study, though exact dates of original making and subsequent clearing have proved so far unobtainable. In some cases, e.g. Buran, the landing ground is now grown over with tussocks of grass. In others, herbs, bushes and trees are growing in and sometimes completely mask the presence of an airfield to an observer on the ground. In some cases, however, the ground remains devoid of vegetation, or is even severely eroded as a result of clearing. A detailed survey of the vegetative cover of the pre-1940 airfields would prove most valuable, in connection with grazing control and anti-erosion measures. Some of these fields, of which there must be 30 or 40, are along the Southern International Boundary in the Haud, and must have been photographed about 1930 (e.g. Duruksi and Bohotleh) and again in 1946 (see illus. 12, para. 88).

335. A senior administrative officer, who spent much of his life preventing destruction of vegetation in the Protectorate, once admitted that as a young cadet he had been asked by the local Somalis to burn the grass in Doh Dera (10° 24′ N. 48° 10′ E.) in about 1920. The Somalis said it would improve the grazing. The area burnt was still practically bare in 1947. As a general rule destruction of vegetation should never be permitted without carrying out a small pilot scheme over a period of *years*.

E. Agriculture (see illus. 6, Contours, para. 73; illus. 28, Average Rainfall, para. 137; illus. 32, Non-gypseous areas, para. 195; illus. 35, Acacia etbaica zone, para. 300).

336. Areas suitable for agriculture depend on the following factors:—

(i) Water	(*a*) *Rain gardens:* Rainfall over 15 or preferably over 20 inches annually.
	(*b*) *Flood water gardens:* Seasonal flooding from streams, especially in alluvial fans (Dohos) and deltas.
	(*c*) *Irrigated gardens:* Watering from wells by hand, or by ducts from streams.
(ii) Soil	(*a*) Gypseous and saline soils, tend to "cake," becoming mineralized if irrigated.
	(*b*) Calcareous soil becomes mineralized more slowly, but also cakes in time.
	(*c*) Less calcareous, more sandy soils, especially on the Nubian and Archaean outcrops, form the best soil.
(iii) Altitude	(*a*) Rainfall is usually heavier at greater altitudes.
	(*b*) Temperature to suit different crops depends on altitude.
(iv) Prospect	(*a*) North facing slopes are usually better provided with flowing streams, and also usually get more rainfall in the dry season than other areas.
	(*b*) Protection from the desiccating S.W. Monsoon is also an advantage of north facing slopes and of belts of soil in gorges.

337. (i) (*a*) *Rain gardens.* In fact the present agricultural areas are estimated by Peck (Director of Agriculture and Veterinary Sciences: (D.A.V.S.)), to total about 800 square miles, of which 400 to 500 square miles is on the Watershed area of the Hargeisa and Borama districts (eastern extension of the Harar Plateau). The crops of these rain gardens (the direct rainfall often being supplemented by drainage from tracks or neighbouring higher land) are predominantly *Millet* (Sorghums), with some *Maize* and minor subsidiary crops. Similar gardens (arable farms) are made at intervals in the *Sugsug belt* (see illus. 35, para. 300) along the Golis, Wagr, and Al Hills of the Main Watershed. The Sugsug belt has an average annual rainfall of 10 to 20 inches, and is above 4,000 feet, with annual average temperature range of about 35° F. to 90° F.

338. (i) (*b*) *Floodwater Gardens.* These, like the former, produce mostly millet, and are also ploughed by oxen with a primitive wooden plough (Erfi), manured by stock, especially cattle which eat the stalks after the grain has been threshed out with a flail. Important floodwater garden areas are at present Lalis and Elayu in the lowlands and the "dohos" (alluvial fans) of Hahe, Berato, Odweina, and Ber. The Mad Mullah, earlier in the century, had similar gardens at Taleh, Halin, Jibaganleh and Gardo, of which the last two areas, in Somalia Italiana, are still producing crops.

339. (i) (*c*) *Irrigated Gardens.* Important amongst these are Medishe, where the water from a permanent stream is led by Persian-type jubes (ducts) to garden areas: Taqusha, near Zeila, where water is raised from wells by the Asiatic weighted pole on a fulcrum, and poured into irrigation channels. There are many other small garden areas, especially growing tomatoes, a few citrus fruits, guavas, pawpaws, and vegetables where there is a market for them. Most of these are on the Main Watershed or the well-watered lowlands of the Gulf of Aden coastal strip (Guban). Apart from Taqusha and Medishe (Melishe), Manja Asseh, Bihendula, Bokh (on Marso), El Birdaleh, Boqda (Daimoleh) and Ala Ule (near Sheikh) are useful market gardens. The old gardens of Mash Aled above Las Khoreh now only produce abundant watercress, run wild, and probably not eaten.

340. The area most suitable for rain gardens is therefore to be found in the Sugsug belt (illus. 35, para. 300) on soil derived from Nubian or Archaean rocks (illus. 31, in pocket). Sandy soil derived from these rocks often extends beyond their actual outcrops, but Illustration 31 will serve as a general guide in the first instance.

341. Work is now being done by the Agricultural Department in connection with irrigation by floodwater from seasonal intermittent streams (Tugs), and it is hoped that the data and maps given in this Report will be of assistance in increasing agricultural production.

342. The small irrigated gardens are a matter of individual work. There are plenty of places where thriving small market gardens could flourish if planned economically, with reserves for bad years (e.g. locusts), and worked continuously.

343. The old Tug Der alluvials believed to pass about eight miles east of Burao, since they contain much Nubian sandstone pebbles, might be worth irrigating by controlled seasonal flooding from some miles above Burao.

344. *The Gum Trade* is reported upon by the Agricultural Department, and several surveys have been carried out in the past. The reports on these surveys are not freely available.

345. *Forestry*, apart from its connection with soil and water conservation, and the protection of vegetation in general, is to be dealt with by a special staff as part of the Agricultural Department schemes. The possibility of exploitation of Daib (Juniper) and Damas (*Conocarpus lancifolius*), and the control of firewood and charcoal production, will presumably be some of the concerns of the forestry officers.

346. *Plants of Medicinal Value* have been collected by Peck and Audey, but the results have not yet been published.

347. An extremely important *Date Production Experiment* is now in progress in the coastal area, under the direction of Mr. V. H. Dowson. This is one of the most important attempts at development yet made in the Protectorate. Its success cannot be proved for some years to come.

348. *Coffee* has been grown in Hargeisa, but as far as is known the low altitude types have not yet been tried.

349. *Tobacco* was grown at Manja Asseh about 1942, but the whole crop was stolen, and the grower left the country. The production of coffee and tobacco in view of present prices and shortages would be well worth attempting.

350. Agriculture is likely, for climatic reasons, to remain confined to a small proportion of the country, perhaps 5 per cent. (i.e. much of the Sugsug belt and a few smaller irrigated areas). It is not likely to employ more than a small minority of the population, again perhaps 5 per cent., but it may well become as valuable in the economic structure of the country as the stock-herding, which at present is the only really important means of subsistence which the Somalis have.

351. It should be remembered that Nomadism is " where a human community is maintained by the produce of domesticated animals maintaining themselves in grassland without injury to its plant covering: a mode of life indeed in which defacement of the plant covering by ploughing or digging is the worst of economic offences " (Myres 1943). Some agricultural production is urgently required in the Protectorate, but the areas to be cultivated must be carefully controlled, and no vegetative cover should be destroyed unless either continued cultivation or replanting of the denuded soil is guaranteed.

CHAPTER VIII

FAUNA

A. Wild Fauna

352. Much has been written about the fauna of Somaliland, though mostly about game animals and birds. The relevant literature is given in the Bibliography (Table 23, para. 593). Much zoological work remains to be done, especially in the more primitive orders. The following account is of a somewhat incomplete record of observations made by the writer since 1928, and of information collected in Somaliland from reliable sources.

353. *Mollusca: Pearl oysters* are exploited on a small scale at Zeila. *Terrestial snails* are common in most areas, often found in trees.

354. *Platyhelminthes: Intestinal and bladder worms, etc.*, are believed to be rare in the dry climate of the Protectorate, though care should be exercised, with permanent water on the coast, and perhaps in the south-east Nogal where internal worms have been seen in a gralloched antelope.

355. *Annelida:* The earth-worm has not been recorded, but *water-leeches* (*Ala Ule*, see also place names in Gazetteer, Table 3, para. 78) occur in some permanent streams on and near the Main Watershed. They are found in some gypseous as well as calcareous and other streams.

356. *Arthropoda: Crabs* (Mangasseh) are abundant at Zeila, and *crayfish* have been seen in the permanent gypseous streams of Dudub As and Dudub Ghoriad in the Onkhor area.

357. Insects have not been much investigated in the Protectorate. The *common house fly* (Duqsi) is all too common near human habitations and domestic stock. *Centipedes* and *scorpions* (Dib galo'o) are poisonous, but the *millepede* (Hangarara) is harmless, as also are the *spiders* (Aro) and *solifuges* (Ali Gelibai) which look like huge, yellow, hairy " eight-legged spiders."

358. *Ticks* (Shilin) of many varieties are a pest to the domestic stock, impoverishing the blood and starting sores. The tick *Ornithodorus* spp (Kudkuda) which carries relapsing fever is common where stock gathers regularly, and in unhygienic buildings of public resort. This pest is now being dealt with in townships by one of the newer insecticides.

359. Several kinds of *ant* (Goranyo, etc.) occur. *Termites* (Abohr) are extremely important, probably carrying out the soil-making function of the temperate climate earth-worm. It builds " ant hills " (i.e. termitaria) up to 23 feet in height on the red Haud soil of the Southern Plateau. The termites will not live on gypseous soil, and this, or anhydrite flagstones, could probably be used to floor storerooms to prevent the ravages of the white ant. On sandy and granitic soils an apparently different type builds smaller, open, cylindrical termitaria of lighter usually cream colour, very different from the solid red massive statuary of the Haud. There are no termitaria at all on gypsum or anhydrite.

360. Little *bees* (Shini) produce wild honey in some districts (especially around Erigavo) but do not usually survive where the large *red hornet* is common (e.g. most of Onkhor area).

361. Much research on *beetles* is needed. It is believed that they cause much damage to trees, both in the wood and by cutting off young shoots.

362. *Sandflies* exist in some areas, especially in the coastal lowlands. *Mosquitoes* are common, especially around permanent water, but also seem to breed where there is only seasonal water. Travellers are advised always to camp away from water and from the smallest encampment where there may be mosquitoes. Hollow tree trunks, and especially the giant euphorbias (" candelabra trees "—Darkein), and the desert water-storing plants, are believed to help in keeping mosquitoes alive in dry areas between rains. They are also carried in the matting of the movable huts of the nomadic tribes-people, or in the cars or tents of travellers. The increase of mosquitoes in places where a piped water supply has replaced well-drawn water, transported in containers on donkeys or camels, has been very noticeable (e.g. Burao).

363. *Locusts* (Aya) are believed always to be present somewhere in the Gulf of Aden coastal lowlands in the " Solitary Phase." The recent infestation from September 1941 to September 1947 (Rainey and Waloff 1948) is believed to have been the longest period for which locusts continued to infest the country without a rest period of a year or two. Locusts arrived again from the northern coasts of the Gulf of Aden (Arabia) in December 1949, and remained in the Protectorate until September 1950. By December 1950 there were only a few isolated patches infested in the east and south-east, most of the locusts having grown from hopper (Koronkor) through immature red spotted locust (Bal Qoranleh) to the mature yellow locust (Shef ad) and flown south from the Protectorate. It is likely that further migrations from the Arabian coast will re-infest the Protectorate in 1951. Locusts, however, are a world problem and are being dealt with by the International Anti-Locust Research Organization.

364. *Reptiles and Amphibians.* These are the subject of recent research by Parker (Parker, H. W., 1932, 42 and 49).

365. As well as numerous kinds of *lizard* throughout the Protectorate, there are *chameleons* (Manja Asseh garden), *iguanas*, large *land tortoises* (Din) and small *water tortoises* (Din) OR *frogs* (Hra) in permanent streams. Frogs and water tortoises have not been found together. There are *bull-frogs* (Hra) which emerge from the hexagonal cracks, where they hibernate in the Haud mud between falls of rain for as long as a year or more. There are some *toads.*

366. There are many kinds of *snake* (Mas) the best known being the *puff adder*, which is especially common in the lowland plain of the Gulf of Aden and in the Haud, but may occur anywhere. Others of the harmful snakes are the *spitting cobra* (in Burao), *kraits*, and probably many others. A number of harmless snakes are naturally feared by Somalis (or any others who sleep on the ground and often walk barefooted). Pythons are believed to occur in the Harar Province of Ethiopia but probably not in the Protectorate.

367. *Fish* (Kalun): *Freshwater fish* have been found at Taleh in the Mullah's well, in the stream of the Onkhor area, and in the hot water of the Biyo Gora gorge (illus. 40, para. 412). A Fisheries Officer is working with the Agricultural Department. At present *shark*, *tunny* and *king fish* are the main sea fish commercially exploited, but there are high hopes of an excellent and more varied harvest soon from the Gulf of Aden coast.

368. *Birds* (Shimbir). Research on these is far from complete (Archer and Godman 1937). A recent expedition has been carried out by Col. Meinetzhagen. There is a great variety of attractive small birds, easily observed at bird baths in the towns on account of the paucity of natural watering places for much of the year.

369. *Ostrich* (Gorayu) is very common both in the lowland and Plateau plainlands. As many as 43 have been seen in one herd within a dozen miles of Burao.

370. *Duck* fly from the coastal brackish lagoons at, e.g. Sebawanak, and are sometimes seen on small pools in the Haud and Nogal after rain.

371. Several types of *bustard* (Jugli, illus. 40, Gelu) live preferably on open plains, and two kinds of *guinea fowl* (Digirin, illus. 40) are common in flocks in certain areas near the larger seasonal rainpools, or near garden areas where grain is threshed.

372. Several kinds of *partridge*, of which the *yellow neck* (Un'as) is commonest, also live near gardens, or in the Haud, and may be seen in most parts of the country. *Sandgrouse* (Fuqo) are very abundant in most of the country, and almost innumerable coveys water daily at some favoured watering points for most of the year. *Green pigeons* are often found in the wild fig trees (Darreh and Berdi).

373. *Mammals: Whales*, *dugong*, and *porpoise* occur in the Gulf of Aden.

374. *Antbears* are not uncommon, but nocturnal and seldom seen.

375. *Warthog* (Dofar) is common within reach of water, and is a great pest to cultivators. It is a favourite food of lion, but is of course unclean for the Moslem Somalis.

376. *Giraffe* (Geri) is not found within the Protectorate, though place-names suggest that it has become extinct fairly recently. Its neck skin is sought after for whips, and the whole hide for shoes by Somalis farther south.

377. *Antelopes: Hartebeest* (Sig) was exterminated by rinderpest early in the century, before which there were thousands in the Hargeisa district.

378. *Oryx* (Be'eid) used to be common in herds on all the plainlands, and though it seems commonest in open country, it is in fact equally abundant in the Haud bushy plateau. Recorded distribution since 1928 is shown in Illustration 38, para. 410, below. The huge herds on the coastal plains which used to live behind Bulhar and Zeila, have now been reduced to two small herds near Qabri Bahar and Jideh. Oryx are most frequently seen, usually in herds up to 15 or 20 strong, on the gypseous open plains of the east and south-east. The hide is valued for shields and whips, and quite a number are killed annually for whips (Shabuq).

379. *Greater* and *Lesser Kudu* (Godir) are distributed as shown on Illustration 38. The greater are not believed to occur in any great numbers except in the mountains north of Borama. The lesser kudu is not uncommon but prefers grazing in thick bush, or near thickets where it can quickly disappear if disturbed. The hide is often used for prayer-mats (Masala).

380. *'Aul* (Soemmering's gazelle) is very common in some areas, and may be expected in herds up to as many as 50 head or more, in any open plain: e.g. Zeila Plain, Nogal. It lives in similar areas to the oryx. For its meat it is preferred by the Somali to smaller buck.

381. *Gerenuk* (Waller's gazelle) is also very common, but only in thickets or thick bush country. It seems especially to favour " Irgin " thickets for cover, or Bil'il (*Acacia mellifera*) thickets on which it browses, but any close bush country will do. There are various folk-tales about this long-necked shy gazelle. Some tribes will not eat the meat of gerenuk because the female menstruates. Others will not eat it because to kill it causes the loss of all one's camels: " He who having camels kills a gerenuk loses all his camels. All." It can in these tribes be eaten by those who own no camels. These old taboos, however, are dying out.

382. *Dero* (Pelzeln's gazelle in lowlands and Speke's gazelle in the higher country) is probably the commonest antelope in the country. It is found nearly everywhere, in open plains, sand-dune country, in hills (but not often on top of high mountains or far from open valleys), and in bush country. The Pelzeln's gazelle seems to live up to an altitude of approximately 2,000 feet, the more vividly coloured Speke's gazelle above 2,000 feet and usually on the high Plateau country. It is not known how far south it goes, but it is found as low as 1,300 feet in the south-east Nogal. It does not seem common where the Dibutag occurs.

383. *Dibutag* (Clarke's gazelle) is believed to live only in this corner of Africa. It is usually found in similar situations to the gerenuk and lesser kudu, but only in a restricted area shown on Illustration 39, para. 411.

384. *Klipspringer* (Alakut) is found on steep slopes of the Main Watershed Mountains, usually on rocky cliffs (illus. 39).

385. *Beira* (Baira), believed to occur only in Ethiopia and the Somalilands (illus. 39), is not uncommon, but very shy and often confused by the tribesmen with the klipspringer, which is about the same size. It is a bluer grey colour with rounded ears, and usually slips over a ridge into cover with ears back like a dog with its tail between its legs. It lives invariably on hills, both of the Main Watershed Mountains, and on little hills in the middle of plains.

386. *Dikdik* (Sakaro) occurs almost everywhere where there is any sort of low cover. Travelling by car south from Burao one may often see an average of one dikdik per mile for the first fifty miles along the road, so that there must be millions off the roads in the whole Protectorate. They are quite common in stations (where they are protected).

387. *Wild ass* (Damer Dibaded: Gumburi) is recorded from three places only (illus. 40, para. 412). There was a herd of a dozen or so in the Nogal in recent years. The wild ass looks very like the domestic donkey until it gallops away.

388. *Elephant* (Marodi) of which there were five females in the Dibrawein Valley, north of Borama, in 1928, are probably now reduced to one solitary female. There is a large herd, however, based on the Fafan, south-west of the Protectorate, and it is probably from this herd that lone elephants on two occasions during the past seven years came north during the Gu rains to Daror and Hagoga. In Swayne's time (Swayne 1895) elephant were abundant near Sheikh, and in other parts of the country. " Marodi " often occurs in place names. It has probably been killed out for the value of its ivory (the Somali being a great trader), and the increase of human population and domestic stock has probably helped to exterminate it.

389. *Rhinoceros* (Wiyil) was represented by one female in the Bur Dab Range near Ainabo in 1928, but is probably now extinct. It is much valued for shields and whips made from its hide.

390. *Hyrax* (Baoni), the rock rabbit, is abundant amongst cliffs and rocky boulder fans, usually near water.

391. *Hare* (Bakeileh) is fairly common throughout the country, but there are no rabbits. The hare is unclean for Moslem peoples.

392. *Porcupine* (Anaqob) is not uncommon, but is nocturnal and seldom seen except when raiding vegetable gardens.

393. *Rat* (or mouse ? Jir) of several kinds is fairly well distributed.

394. *Jerboas* are seen on roads at night.

395. *Ground squirrels* (Diba gale) occur all over the country, and rob gardens and grain stores.

396. *Badger* (Hor) is a small variety, very strong and vicious, and attacks hen roosts.

397. *Stoats* (So-Gurr) are fairly common in the Haud and other areas. They resemble the ground squirrel when running, but are more reddish in colour with a dark rufus tail-tip.

398. *Black-eared fox* (Gora-waraba) is fairly well distributed throughout the country, usually in twos and threes.

399. *Jackal* (Dawa'o) is common everywhere. It preys on lambs and sick or tired sheep and goats as well as game, and probably serves a useful scavenging purpose.

400. *Hyaena* (spotted hyaena: waraba, and striped black-throated hyaena: Dider) are common and a serious pest. The dider will sometimes attack man in times of drought. Both types eat children and sick or old people if opportunity arises, and Somalis sleeping out on the ground always cover their faces to prevent the " snatch-and-run " tactics of the hyaena, which has taken many noses, or other uncovered parts of the sleeping human body. It also attacks camels and other stock, and as many as possible are killed by poisoning.

401. *Mongoose* (Shuqshuq) is seen in tribes of up to 20 or 30 in any part of the Highland country.

402. *Wildcat* (Dinat) is not uncommon and comes into stations.

403. *Lynx* (Gududeni) (illus. 37) is not often seen but appears to be widely distributed. It does little harm to flocks as a rule.

404. *Cheetah* (Harimad) (illus. 37) is also fairly common and preys mostly on antelope.

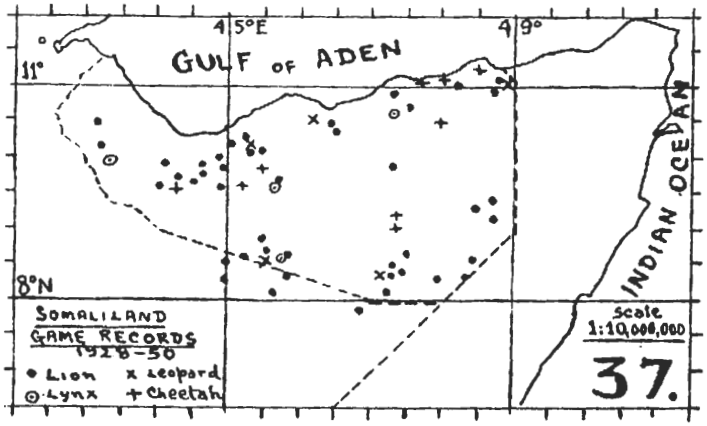
405. *Leopard* (Shabel) (illus. 37) is now getting rare owing to the high prices of leopard skins. It is still found in the Haud, and in parts of the Main Watershed, and in the Onkhor area. In 1928 the export of leopard skins was prohibited partly because the telephone wire between Berbera and Sheikh was being used for traps. There were at that time quite a lot of leopards in the Berbera lowlands, preying on flocks rather than on the barely clothed children who tried to drive them away from the flocks by throwing stones. About 2,000 skins were exported to Aden from the Somaliland coasts in 1928.

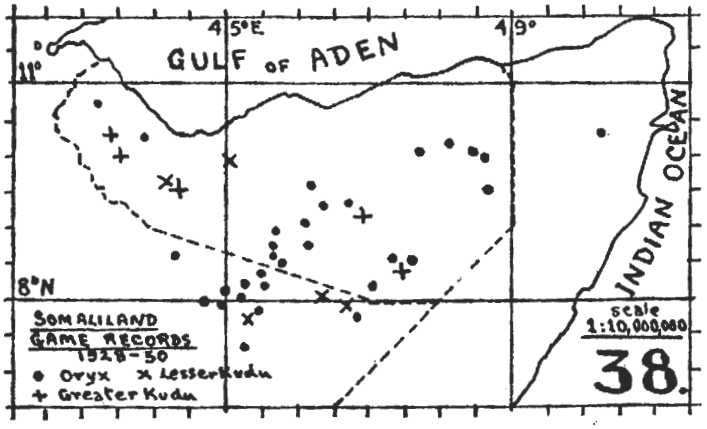
406. *Lion* (Libahh) (illus. 37) are quite common, and distributed all over the country, though they favour special areas in the highest mountains where the juniper forests persist, and thick bush areas of the highland Plateau, or well-watered gorges of broken country in the lowlands. They are a pest to stock-herders, leaping by night into camel zaribas (thorn or stone corrals: kraals). Many of the cases of mauling or eating humans are due to attempts by stockmen to protect their herds, though regular man-eaters do occur, most of the attacks on humans being usually in definite areas (Bawn, Taleh, and Halin especially). An annual average of twelve deaths from attacks by lion have been reported during the seven years of the Survey. Many are poisoned, including a pride of five lions at Erigavo in 1947, and five were shot in half an hour close to Las Anod town in about 1945. There is no danger of extermination of the lion, and for the sake of the stock-herders as many as possible should be poisoned. They do, however, keep warthog from increasing too much in the agricultural areas.

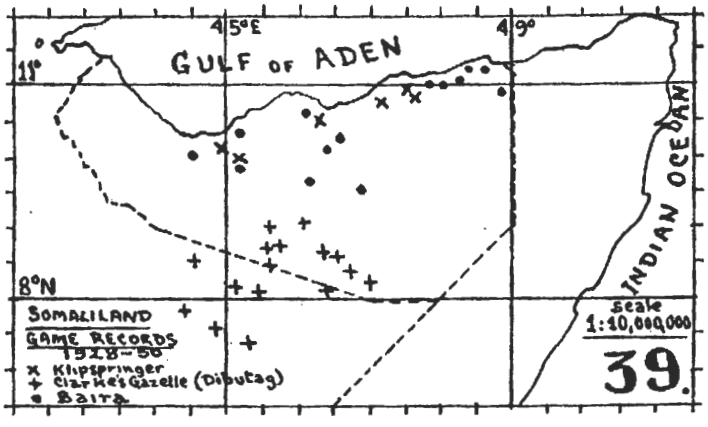
407. *Bats* (Fidmer) are common, especially living in caves, wells and swallow-holes.

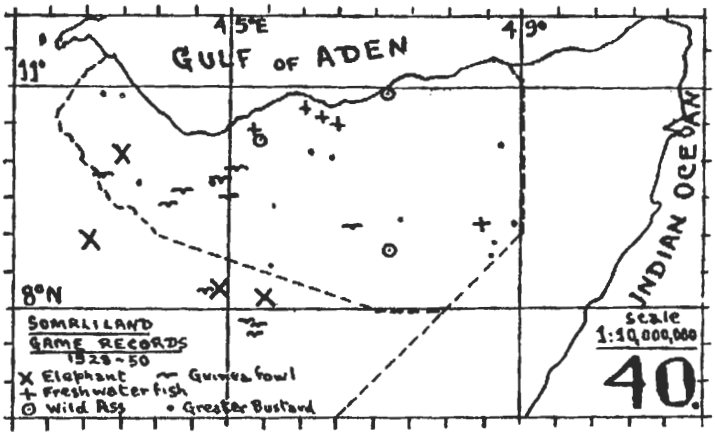
408. *Baboons* (Dayer) are very well distributed in large tribes up to 50 or so strong. They usually live fairly near water (illus. 7, pocket), especially running streams and strings of pools above which there are rock ledges on a cliff face, where they can sleep in safety. They live at all altitudes, and though they raid date plantations and some other fruit crops, they live mostly on a varied diet including wild figs and other fruit. They are not dangerous unless chased or annoyed, but have been known to attack and eat dogs.

409–412. (*Illustrations* 37–40.)









B. Domestic Stock

413. *One-humped camels* (Gel) are the most important domestic animal in the *internal* economy of the country. They provide transport for moving households, and in carrying water, skins and other produce, and despite modern competition by the motor lorry, they are absolutely essential in broken country and hills, yet are mostly bred on the open plateau plainlands. Hides are mostly used as shoe leather (see Table 19, para. 442) and some exported. Camel milk and camel meat are a very important part of the diet of the people, both in the country and in townships.

414. *Sheep* (Idoh) are the black-headed, fat-tailed " Berbera sheep " producing one of the most highly valued sheepskins in the world. Sheep are grazed with goats, the sheep preponderating in the highland Plateau country, and goats in broken country and the lowlands. In addition to the export of skins (the greatest export of the country, see Table 20, para. 443) the milk, butter (ghee) and meat are the most important part of the diet of most Somalis. The sheep have thin coats and no wool is produced.

415. *Goats* (Riyoh) graze and browse with the sheep, and their skins are also a valuable export. They are a short-haired variety, and produce milk, ghee, and meat as does the sheep.

416. *Humped cattle* (Lo') are much kept where they can reach water every few days, especially in the western agricultural areas, the Ain, Nogal, and in the Watershed Mountains. They are kept primarily for milk, or for ox ploughing, but some cattle are exported on the hoof and some hides. Most Somalis do not like beef much, partly because the cattle are not usually slaughtered until useless for other purposes. There are annual minor outbreaks of rinderpest in the west.

417. *Horses* (Faras) are less common than earlier in the century, but herds of horses are still kept by the Warsengeli east of Erigavo, Dolbahanta and Halr Toljaala in the Nogal and Ain, and Gadabursi in the Borama area, as well as in small numbers elsewhere. The Somali pony is well known as a polo pony. Motorization of mounted troops has caused a decreased interest in horse-breeding.

418. *Donkeys* (Damer) are kept especially in the agricultural areas and in the hills, as well as in most towns. All are used as beasts of burden. The breeding of mules is not done, but mules are bought from Ethiopia to some extent.

419. *Hens* (Digag) are kept in townships and gardens, in the barnyard way, to produce eggs where there is a market for them. Somalis do not eat many eggs or birds, but are beginning to do so. Eggs cannot be bought at night.

420. *Dogs*, half wild " pie-dogs " (Ei), live around slaughter-houses and townships, and sometimes attach themselves to moving villages, where they are useful watch dogs. They are " unclean," Moslems not touching the face or wet hair of a dog.

421. *Cats* (Bisat) also attach themselves to households and keep down rats, ground squirrels and other pests.

C. Diseases of Animals

422. This is properly the province of the Agricultural and Veterinary Department, but as a lay observer the writer would say that the following diseases are important:—

(i) Anthrax, rare in camels.

(ii) Rinderpest in cattle, sporadic in west (Daba karub).

(iii) Pleuropneumonia in sheep and goats, especially when rain falls after a drought (Sambab).

(iv) Trypanosomiasis in camels, for which injections of Naganol are sold widely by the Veterinary Department.

(v) Horse sickness in horses, occasional epidemics.

(vi) Hydrophobia, especially in dogs, jackals, and hyaenas, always latent in Ethiopia, with epidemics spreading through the western districts, but not yet further east than Odweina.

423. Recent research has been carried out on diseases of domestic animals, especially rinderpest, and it is hoped that a comprehensive booklet on the diseases and pests of domestic animals of the Somaliland Protectorate, with a note on the carrying of disease by the wild fauna, will be compiled, printed, and made widely available.

D. Human Diseases

424. Comprehensive annual reports have recently been issued by the Medical Department, and in the 1949 Report there are useful Tables showing the recorded prevalence of diseases.

Many of the disease-carrying animals of the more humid tropical climates tend to be absent in the semi-desert conditions of the Protectorate. Amoebic dysentery and typhoid for instance have been fairly rare, though outbreaks of typhoid do occur.

425. *Malaria* (Kanea 'Au) has infected a large proportion of the nomadic Somali people during their sojourns near permanent water, and there are sufficient anopheles in the areas of seasonal water to cause epidemics there in the rainy seasons. The Ain and Nogal, and the well-watered belt at the foot of the north-facing Main Watershed scarp are amongst the worst places for malaria, and here people are always liable to infection. In the areas of seasonal rainfall further from permanent wells, the main epidemics tend to occur in July to September in places where there are rains in that quarter, but in most of the country they are at their worst during the rains of October and November.

426. *Dengue* occurs on the coast, especially at Bendr Kasim (Bosaso) in Somalia.

427. *Tick fever* (carried by Kudkuda ticks, *Ornithodorous* spp) is a very serious disease, and seems to sap the vitality of sufferers for months. It is at its worst at the larger centres of population, where, however, the tick is now being largely destroyed by a new insecticide.

428. *Pneumonia* (Afdoh, Januwaren) kills many people, especially those who have been weakened by the privations of a drought, followed by exposure when the rains fall after a lean period. The Somali house is warm, but the field men of survey parties need tents, blankets, and adequate clothing and food, to prevent the failure of an expedition from pneumonia.

429. *Tuberculosis* is common. Two of the six Somali employees of the General Survey who died during the seven years 1944 to 1950, died of tuberculosis.

430. *Cerebrospinal menengitis* occurs in epidemics. In one year a large proportion of deaths was in the Midgan area of Burao township.

431. *Conjunctivitis* of the eyes is especially common in the Berbera district including Sheikh.

432. *Venereal diseases* have increased alarmingly during the last decade, especially with the opening up of the Ethiopian frontier, increased travel by motor lorry, and the rapid movement of troops during the war. Syphilis (Habad) and Gonorrhoea (Jabti) are the most common. The army "Wajir gonorrhoea," said popularly to have been caused by the Wajir water in the Northern Frontier District of Kenya, has its counterpart in the Protectorate "Gardo syphilis" (Habad gardoed).

CHAPTER IX

TRIBES AND THEIR STOCK ✓

A. Introduction

433. The main source of information as to tribal movements has been the network of "Rain and Tribal Observers" (illus. 13, para. 98) as described in Chapter X, Meteorology. The Genealogies (Table 21, para. 444) were compiled from all information available in District Offices in 1944, together with the results of a good deal of research by the Survey Officer. The records of exports have been collected from old annual reports, and in part kindly supplied by the Customs Department. The other Illustrations and Tables given below are the fruit of research by the General Survey Department.

434. The Somali people of the Protectorate may be briefly divided into five groups:—

(i) Nomadic stock-herders.

(ii) Agriculturalists.

(iii) Townsmen.

(iv) Government servants.

(v) Travellers.

435. Probably about 90 per cent. of the population belongs to the first group, nomadic stock-herders, though at any time a number of these live temporarily in townships.

436. The agriculturalists in the limited areas of arable farming are probably not more than five per cent. of the population at present.

437. The townsmen include the powerful traders who are essential for the marketing of stock and agricultural products, as well as for the importation and distribution of essentials not locally produced. These townsmen are not necessarily sharply divided from the countrymen, as they often have stock or gardens and visit the country frequently. There are also the lesser shopkeepers, mechanics, drivers, brokers, blacksmiths, leather workers, and others necessary in a township, and usually a floating population of countrymen, who may maintain a movable hut in or near the town as a centre for their numerous friends and relations who have business in town, children to be schooled, or who need hospital treatment. There has been a marked drift to the towns during the recent war, and too many young people have left their stock and gardens to live in townships: but the towns are necessary market and cultural centres. The problems connected with the growing townships are dealt with by the Protectorate Administration.

438. The Government servants are drawn from all the other groups. They tend to have a considerable influence on the Government, and are often the only source of information for European officers. Interpreters and personal servants, who are frequently the only Somalis to whom a European talks directly, are particularly influential. With the increasing knowledge of English amongst other Somalis, however, this influence is being reduced. It is noteworthy, however, that when entry into the Protectorate was invariably by ship from Aden to Berbera, there was a preponderance of Habr Yunis Musa Arreh and Habr Awal Esa Musa personal servants, and to some extent interpreters. Now that entry is usually by air to Hargeisa, the influence of the Hargeisa tribes, Habr Awal Saad Musa, Eidegalla and Arab, has increased.

439. A small group of great importance is the "travellers." The bulk of these start as seamen and roam the world, some in the Royal Navy and some in merchant ships. There are colonies of Somalis in London, Hull, Liverpool and Cardiff, and quite a number of Somalis enter the U.S.A., and sometimes work there for years. These travellers provide not only a useful supply of money earned abroad, but have always been an important contact between the outside world and the nomadic stock-herder. They usually return to the Protectorate, often to tend stock themselves, sooner or later.

440. This Report, however, is concerned primarily with the nomadic stock-herder, upon whose industry the present economic structure of the Protectorate is based. Some description of the general geography of the country has been given in the preceding chapters. The following Tables show estimates of the population of people and number of stock (Tables 18 and 19), evidence connected with these estimates as regards exports (Table 20), and a detailed genealogy of the Somali tribes of the Protectorate and Mijertein (Table 21).

441–444. (*Tables* 18–21.)

TABLE 18

ESTIMATION OF THE POPULATION OF SOMALILAND PROTECTORATE AND GRAZING AREAS (BRITISH PROTECTED SOMALIS ONLY) AND OF THEIR STOCK. AMENDED IN MARCH 1951, FROM GENERAL SURVEY REPORT 1944

	No. of Dia groups	Approximate populations	Camels	Sheep	Goats	Cattle	Horses	Donkeys
1. Esa (British Protected)	57	55,000	125,000	225,000	225,000	30,000	—	600
2. Gadabürsi	37	45,000	60,000	100,000	300,000	60,000	50	900
3. Habr Awal Saad Musa	50	100,000	125,000	370,000	130,000	100,000	200	2,000
4. Habr Awal Esa Musa	14	30,000	15,000	100,000	200,000	5,000	—	200
5. Arab	10	20,000	50,000	80,000	30,000	—	—	—
6. Eidagalla	19	40,000	100,000	170,000	50,000	—	—	—
7. Habr Yunis (Burao)	44	90,000	220,000	370,000	110,000	—	—	—
8. Habr Yunis (other Districts) ...	22	40,000	50,000	100,000	100,000	2,000	50	400
9. Habr Toljaala Mohd Abokr ...	31	60,000	150,000	200,000	100,000	1,000	50	200
10. Habr Toljaala Musa Abokr and Omr	19	40,000	40,000	200,000	200,000	100	—	100
11. Dolbahanta	48	100,000	240,000	370,000	130,000	20,000	100	200
12. Warsengeli	10	20,000	25,000	70,000	70,000	5,000	200	500
Total	361	640,000	1,200,000	2,355,000	1,645,000	223,100	650	5,100

Notes.—In the 1944 General Survey Annual Report the Esa were shown to include part of the tribe which is not British protected, and the Gadabürsi were also overestimated. Arithmetical errors were also made in estimating the sheep and goats of the Habr Awal Saad Musa and of the Dolbahanta, and the sheep and goats population as a whole was underestimated. By comparison with exports (Table 20) it seems that the average life of a sheep or goat is only about 4 years. The average life of a camel seems to be about 15 years.

TABLE 19

TABLE SHOWING VARIOUS ESTIMATES OF THE STOCK OWNED BY BRITISH PROTECTED TRIBES OF THE SOMALILAND PROTECTORATE
(68,000 square miles, Grazing Areas 42,000 square miles, Total 110,000 square miles)

	Glover 1945	Fisher 1947	Hunt 1951	Sudan
Sheep	10,000,000	2,400,000	2,355,000	4,808,000
Goats	3,000,000	1,600,000	1,645,000	3,991,000
Total flocks	13,000,000	4,000,000	4,000,000	8,799,000
Camels	2,500,000	1,500,000	1,200,000	1,109,000
Cattle	—	263,000	223,100	3,195,000
Total herds	—	1,763,000	1,423,100	4,304,000
Horses	—	450	650	—
Donkeys	—	6,200	5,100	—
Game (Antelope) ...	—	say 500,000	say 500,000	—

NOTE.—The figures for the Sudan are taken from the "Sudan Government Soil Conservation Committee's Report for 1944." The area of the Sudan is about 1,000,000 square miles as compared with the 110,000 grazed by the stock of British Protected Somali tribes.

TABLE 20

TABLE SHOWING THE RECORDED EXPORTS OF STOCK (FROM OR THROUGH THE SOMALILAND PROTECTORATE)

Year	Total sheep, goats and their skins	Total camels, cattle and their hides	Horses
1927	1,882,092	3,332	—
1928	3,856,140	21,006	15
1929	1,047,848	24,980	6
1930	896,093	4,675	3
1931	1,117,817	1,802	4
1932	1,237,030	1,328	13
1933	1,856,539	2,110	28
1934	1,957,277	2,111	31
1935	1,198,587	3,643	6
1936	1,419,881	2,878	27
1937	1,636,540	1,727	—
1938	1,817,033	—	—
1939	2,077,734	—	—
1940	—	—	—
1941	1,056,965	—	—
1942	1,292,706	—	—
1943	1,920,371	—	—
1944	1,898,723	9,120	—
1945	2,127,809	5,455	—
1946	2,055,246	3,147	—
1947	2,211,165	1,567	—
1948	2,519,591	863	—
1949	1,414,278	2,385	—
1950	1,666,181	1,645	—
Total	40,163,646	—	—
Average	1,746,245	—	—

The average exports of (i) sheep and goats and their skins, and of (ii) cattle, camels and their hides (see Table 20) are 1,746,245 and 5,766 respectively. As Fisher points out, however, about 500,000 skins are probably exported through the Protectorate from Ethiopia, including the Ogaden, and Italian Somaliland.

The comparatively small proportion of hides exported is probably due to their use in local shoemaking. About six pairs of Somali shoes are made from one hide, and it is estimated that by 320,000 people, 71,000 hides a year are needed for these shoes (half the population getting new shoes about every nine months).

Details supplied by Controller of Customs for 1950

Sheep on hoof	92,113	
Goats on hoof	26,186	
Total flocks on hoof	118,299	
		118,299
Sheep skins	776,737	
Goat skins	771,145	
Total skins	1,547,882	
		1,547,882
Total recorded export of flocks and skins		1,666,181
Cattle on hoof	1,311	
Camels on hoof	174	
Total herds on hoof	1,485	
		1,485
Hides (camel or cattle) at eight per cwt.	160	
		160
Total recorded export of herds and hides		1,645

The Somali tends to sell his stock cheaply and willingly when there is a shortage of stock, usually due to drought.

In times of plenty prices rise and stock is not willingly sold.

The effect of the 1928 major drought in the above table (see also Table 9) is very obvious, as also is the shortage of flocks for export for several years after the huge exports of 1928. In 1929 all available cattle and camel hides were also exported, probably many of them taken from the beds and movable houses of those who had lost all their stock.

After a good year for rain and grazing, exports tend to drop, and in a poor year to rise. Inaccuracies due to incomplete recording or evasion of customs, and the effect of major changes in world prices must be remembered in comparing this Table with rainfall records.

TABLE 21

TABLE OF GENEALOGIES OF THE TRIBES OF SOMALILAND PROTECTORATE AND THE MIJERTEIN

The numbers on the left indicate the generation in line of descent from the patriarch of the group: e.g. names marked " 4 " are great-grandsons of " 1," and " 7 " are great-grandsons of the next preceding " 4," etc. On the right-hand side of the page are the numbers of the dia-paying groups of the tribe concerned, those sections with the same number, paying and receiving blood-money together. As a general rule the tribes, for the purpose of these genealogies, have not been carried beyond the dia-paying group, as the Somali society is based on this group, and further detail, although in many cases it has been worked out, would tend to make this compilation unwieldy.

Some alterations and additions have been made during compilation and, as far as possible, spelling has been made to conform to the R.G.S. II system.

INDEX
(Tribes from west to east)

Generation number		*Dia-paying group number*
1. RAM NAG married a Galla woman		
2. ZUMALI RAM NAG (the wealthy)		
3. IRRIR ZUMALI		
4. DIR IRRIR (father-in-law of Darod)	DIR	
4. HAWIYA IRRIR	HAWIYA	
4. MADOBA IRRIR		
5. ESA MADOBA	ESA	

NOTE.—I do not believe this as the generations of the Esa tribe are not sufficient.

1. ESA	**ESA ('ISA)**	
2. HAULA GATI ESA (Walaldun)		
3. MEKAHIR HAULAGATI		1
3. IDLEH HAULAGATI		2
3. MAHAMUD HAULAGATI		
4. HASSAN MAHAMUD		3
4. ABOKR MAHAMUD		
5. YUSUF ABOKR		4
5. ALI ABOKR		
6. HALAS ALI		5
6. AHMED ALI		6
6. BAHAR ALI		7
6. BINLEH ALI		8
2. HOLLEH ESA (Forlabbe)		
3. MAHADLEH HOLLEH		
4. BIRBOREH MAHADLEH		9
4. ABOKR MAHADLEH		
5. ARREH ABOKR		10
5. ALI ABOKR		11
5. FARAH ABOKR		12
5. ALIJIRREH ABOKR		13
5. HASSAN ABOKR		14
3. SAHIB HOLLEH		
4. AHMED SAHIB		15
4. ELI SAHIB		
5. ABOKR ELI		16
5. HARUN ELI		17
5. ALI ELI		18
5. GABAR ELI		
6. IDLEH GABAR		
7. ABOKR IDLEH		
8. BULBUL ABOKR		19
8. ALI ABOKR		20
8. ISMAN ABOKR		21

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	ESA—*continued*	
7. Nur Idleh		
8. Abdilleh Nur		22
8. Odawa Nur		23
8. Jibril Nur		24
8. Gadid Nur		25
7. Haji Idleh		26
6. Salah Gabar		
7. Gasabi Salah		27
7. Mahamud Salah		
8. Salah Mahamud		28
8. Adan Mahamud		29
8. Abdilleh Mahamud		30
8. Afweina Mahamud		31
2. Eliye Esa		
3. Mamasan Eliye		
4. Omr Mamasan		32
4. Hassan Mamasan		
5. Yunis Hassan		33
5. Isman Hassan		34
5. Hussein Hassan		
6. Ahmed Hussein		
7. Egal Ahmed		35
7. Idleh Ahmed		36
6. Gedid Hussein		
7. Abtisame Gedid		37
7. Alaleh Gedid		38
4. Aur Mamasan		
5. Abdarahman Aur		
6. Liban Abdarahman		39
6. Farah Abdarahman		40
6. Dawaleh Abdarahman		41
6. Ahmed Abdarahman		
7. Gagili Ahmed 7. Omr Ahmed		42
7. Ali Ahmed		43
7. Farah Ahmed		44
5. Khaireh Aur		
6. Abdallah Khaireh		
7. Abdilleh Abdallah (ba Forlaba)		45
7. Hirab Abdallah (ba Forlaba)		46
7. Adawi Abdallah (ba Harla) 7. Ali Abdallah (ba Harla)		47
7. Gedi Abdallah (ba Harla)		48
7. Egal Abdallah (ba Gurgura)		49
7. Odowa Abdallah (ba Gurgura)		50
3. Musa Eliye		
4. Mohorreh Musa		51
4. Bideh Musa		52
4. Saad Musa		
5. Makahil Saad		
6. Ali Makahil		53
6. Afweine Makahil		54
5. Ibrahim Saad		
6. Barreh Ibrahim		55
6. Eli Ibrahim		
7. Abdi Eli		56
7. Kadab Eli		
8. Hussein Kadab		
9. Dabar Hussein		57
9. Yarun Hussein		
10. Jibril Yarun		58
10. Buraleh Yarun		59
8. Gediche Kadab		
9. Dabadi Gediche		60
9. Odawa Gediche		61
9. Ali Gediche		62
9. Hassan Gediche		
10. Idardon Hassan		63
10. Ali Hassan		64
10. Abdilleh Hassan		65
10. Adan Hassan		66

TABLE 21—*continued*

ESA—*continued*

Generation number		*Dia-paying group number*
4. YUNIS MUSA		
5. MAHAMUD YUNIS		
6. HOBLEH MAHAMUD		67
6. ALI MAHAMUD		
7. MAALIN ALI		
8. ABDI MAALIN		68
8. HASSAN MAALIN		69
8. ABDALLAH MAALIN		
9. ALI ABDALLAH		70
9. JALAF ABDALLAH		71
9. HASSAN ABDALLAH		
10. ALI HASSAN		72
10. WARDOH HASSAN		
11. BARREH WARDOH		73
11. OMR WARDOH		74
11. GALAN WARDOH		75
11. HAGR WARDOH		76
11. JILAL WARDOH		77
11. ABIB WARDOH		78
11. LIBAN WARDOH		79
7. MAHAMUD ALI		
8. ALI MAHAMUD		80
8. GEDI MAHAMUD		
9. HADOSH GEDI		81
9. ALI GEDI		
10. AHMED ALI		82
10. HURUR ALI		83
10. JIBRIL ALI		84
8. KUL MAHAMUD		
9. ABDILLEH KUL		85
9. IDLEH KUL		86
9. OMR KUL		
10. HIRAB OMR		87
10. IDAB OMR		88
10. GEDID OMR		89
1. URWEINA		
2. FIQI URWEINA		
3. HUSSEIN FIQI		
4. ALI HUSSEIN		90
4. ABIB HUSSEIN		91
4. IDLEH HUSSEIN		92
3. MUSA FIQI		
4. GEDID MUSA		93
4. ABDI MUSA		94
2. ABDALLAH URWEINA		
3. KORON ABDALLAH		95
3. ALI ABDALLAH		96
3. AHMED ABDALLAH		97
3. BUR ABDALLAH		98
1. WARDIKH (no information)		
1. HORONE		
2. HABR WALAL HORONE		
3. GALALLAH HABR WALAL		
4. BARREH GALALLA		99
4. IDLEH GALALLA 4. AUSUH GALALLA		100
2. GELWALAL HORONE		
3. ABDALLAH GELWALAL		
4. ABDILLEH ABDALLAH		101
4. SEED ABDALLAH		102
3. ADAN GELWALAL		
4. HUSSEIN ADAN		103
4. BURALEH ADAN		104

NOTE.—Presumably many of these dia-paying groups are too small to pay dia, but merely lack tribal organization.

TABLE 21—*continued*

Generation number		*Dia-paying group number*
1. SAMARONE	**GADABURSI**	
2. Esa Samarone (rer Esa) (Habr Afan)		1
2. Yusuf Samarone (Habr Yusuf) } (Habr Afan) 3. Suber Samarone		2
4. Mohd. Suber (Degaweina)		3
4. Makahil Suber		4
4. Musa Suber		
5. Saad Musa (Hassan Saad)		5
5. Fin Musa (Musa Fin)		6
5. Hamud Musa (rer Hamud)		7
5. Adan Musa (Farole)		8
2. Mikadore Samarone		
3. Makahil Mikadore		
4. Musa Makahil		
5. Makahil Dera		
6. Ali Makahil Dera		
7. Kul Ali		
7. Abdi Ali (rer Ughas)		9
6. Abokr Makahil Dera		
7. Abdi Abokr		10
7. Galangal Abokr		11
5. Jibril Musa (Afgudud)		12
5. Mohd. Musa 5. Musa Musa } (ba Sanyero) 5. Idris Musa		13
5. Yunis Musa		
6. Ali Yunis		
6. Adan Yunis		14
6. Jibril Yunis		
7. Adan (Had) Jibril		
7. Abokr (Gurud) Jibril		
7. Osman (Guleh) Jibril		15
7. Khair Jibril		
8. Ali Boh Khair (Kaba Harag)		
8. Osman Khair		
9. Dudub Osman (rer Dudub)		16
9. Yunis Osman		
10. Farah Yunis (ba Madigan)		17
10. Ahmed Yunis (rer Ahmed) (ba Madigan)		18
10. Mahamud Yunis (ba Musa Fin)		19
10. Darar Yunis } (ba Musa Fin) 10. Geleh Yunis		20
10. Abib Yunis 10. Gedi Yunis } (Gadaladal) 10. Adan Yunis 10. Ali Yunis		21
11. Hamud Ali (rer Hamud)		
6. Nur Yunis (rer Nur)		
7. Mohd. Nur (rer Mohd. Nur)		
8. Abdi Mohd.		
9. Hussein Abdi		
10. Gabal Hussein (rer Gabal)		22
8. Helas Mohd.		23
8. Hafane Mohd. } (ba Nedidore) 8. Hassan Mohd. 8. Mohd. Mohd. } (ba Jibrain) 8. Robleh Mohd. } (ba Mohd.)		24
7. Farah Nur (rer Farah Nur)		
8. Abdi Farah		
8. Gedi Farah		25
8. Ibrahim Farah		
9. Samakab Ibrahim 9. Barreh Ibrahim } (ba rer Hamud) 9. Robleh Ibrahim		26
9. Guled Ibrahim 9. Gada Ibrahim } (ba Makahil)		27
9. Dadar Ibrahim 9. Geleh Ibrahim } (ba Habr Gobo)		28

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	GADABURSI—*continued*	
4.	ELLI MAKAHIL	29
4.	EGEH MAKAHIL	
4.	HASSAN MAKAHIL (ba Habr Hassan)	30
4.	ABDALLAH MAKAHIL (ba Habr Abdallah)	
5.	WEID ABDALLAH	
6.	MUSA WEID }	31
6.	HASSAN WEID }	
6.	GEDI WEID (ba Samarone)	32
5.	KAMIS ABDALLA (ba Samarone)	32
3.	MAHAD ASSA MIKADORE	
4.	ADAN MAHAD-ASSA (ba Habr Adan) (ba Samarone)	32
4.	ABOKR MAHAD-ASSA (ba Habr Abokr)	32
5.	BARREH ABOKR (ba Samarone)	32
5.	ABDALLA ABOKR (ba Samarone)	32
5.	SEED ABOKR	33
4.	HUSSEIN MAHAD-ASSA (ba Habr Elli)	34
4.	MUSA MAHAD-ASSA	
5.	MARIS MUSA (ba Habr Musa)	35
5.	ADAN MUSA	
5.	OSMAN MUSA (Abrain)	36
5.	MOHD. MUSA (rer Mohd.)	37

1. HABR AFFAN
1. HEBJIRREH
1. JIBRAIN
1. ALI GANUN
1. GOBO

} included with the Habr Affan (Suber, Yusuf and Esa Samarone)

HABR AWAL

1. SH. ISAQ
2. IBRAHIM SH. ISAQ (Habr Habushed)
2. MOHAMED SH. ISAQ (Habr Habushed)
2. MUSA SH. ISAQ (Habr Habushed : Habr Toljaala)
2. GERHAJIS SH. ISAQ (Habr Yunis and Eidagalla)
2. AYUB SH. ISAQ (Ayub)
2. ARAB SH. ISAQ (Arab)
2. TOLJAALA SH. ISAQ (Toljaala) (Habr Habushed)
2. AWAL SH. ISAQ (Habr Awal)
3. SUBER AWAL
4. MUSA SUBER
5. AFGAB MUSA
5. EGALLA MUSA
5. ELLI MUSA
5. ABDULLA MUSA

} scattered amongst H.A. tribes

5. SAAD MUSA
6. ABDURAHMAN SAAD 42
6. HASSAN SAAD
6. ABDULLA SAAD 1
6. ISAQ SAAD
7. ABOKR ISAQ
8. OGAD ABOKR 2
8. ABDULLA ABOKR 3
8. HUSSEIN ABOKR
9. ISMAN HUSSEIN
10. LOGEH ISMAN 63
10. HAMUD ISMAN 64
10. HADIYE ISMAN
10. YUSUF ISMAN
9. JIBRIL HUSSEIN
10. ALI JIBRIL 4
10. ISMAIL JIBRIL
11. YUNIS ISMAIL (baha Gobo) 5
11. IDRAIS ISMAIL (baha Gobo) 6
11. ABDILLEH ISMAIL (Garaato) 7
11. SEED ISMAIL

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	HABR AWAL—*continued*	
12.	ABDULLA SEED	
13.	ABANEH ABDULLA	8
13.	ELALE ABDULLA	9
13.	AHMED ABDULLA	
14.	SHEIKHDON AHMED	10
14.	ISMAN AHMED	
14.	KUL AHMED	11
14.	BININ AHMED	
14.	BURALEH AHMED	
14.	SAHEL AHMED	
13.	SAMATER ABDULLA	
14.	IDLEH SAMATER	12
14.	DUALEH SAMATER	
14.	WEID SAMATER	
14.	HOSH SAMATER	13
14.	GULED SAMATER	9
14.	HELDID SAMATER	
15.	EGAL HELDID	12
15.	FARAH HELDID	14
15.	SAMATER HELDID	
15.	AFI HELDID	
15.	SIGATEH HELDID	
15.	HAWADLEH HELDID	15
15.	HAUTEN HELDID	
11.	NUH ISMAIL	
12.	ALI NUH	16
12.	AHMED NUH	
13.	JIBRIL AHMED (ba Esa Musa)	17
13.	ISMAN AHMED (ba Esa Musa)	
13.	JAMA AHMED	
14.	MOHD. JAMA	18
14.	YUNIS JAMA	19
14.	GULED JAMA	
15.	GEDID GULED (ba Aila)	20
15.	ROBLEH GULED (ba Aila)	
15.	FARAH GULED (ba Aila)	
15.	GELEH GULED (ba Aila)	
15.	SAHEL GULED (ba Indayera)	21
15.	HOSH GULED (ba Indayera)	
15.	BENIN GULED (ba Indayera)	
15.	JISH GULED (ba Ogaden (Boho))	22
15.	BEDID GULED (ba Ogaden (Boho))	
15.	MOHD. GULED (ba Ogaden (Boho))	
15.	SHIRDON GULED (ba Ogaden (Boho))	
15.	ALI GULED (ba Ogaden (Boho))	
15.	EGAL GULED (ba Galla)	
15.	FATAH GULED (ba Galla)	
12.	YUNIS NUH	
13.	SHIRDON YUNIS	
14.	SAMATER SHIRDON	23
14.	GEDI SHIRDON	24
14.	FATAH SHIRDON	25
14.	ALI SHIRDON	
14.	ISMAN SHIRDON	
14.	MA'AD SHIRDON	26
14.	SIYEHE SHIRDON	27
13.	GEDID YUNIS	28
13.	HOSH YUNIS	16
13.	MOHD. YUNIS	29
8.	JIBRIL ABOKR	
9.	MAKAHIL JIBRIL	30
9.	ALI JIBRIL	
10.	OMR ALI	
11.	ISMAIL OMR	
12.	DALAL ISMAIL	
13.	ELMIS DALAL	
14.	LODON DALAL	

TABLE 21—*continued*

HABR AWAL—*continued*

Generation number		*Dia-paying group number*
	15. KHAYAT LODON 15. YUSUF LODON 15. HILDID LODON	30
	15. ROBLEH LODON 15. ALI LODON 15. DILMID LODON 15. HIRAD LODON 15. AFI LODON	31
	14. ALI ELMIS 14. HOSH ELMIS 14. ISMAIL ELMIS 14. AFGUB ELMIS 14. GEDI ELMIS	31
	14. BOHO ELMIS 14. ADAN ELMIS 14. EGAL YERYER ELMIS 14. EGAL GARDI ELMIS	32
	14. JAMA ELMIS 14. KALIL ELMIS	33
	13. ISMAN DALAL 13. SAMAKAB DALAL 13. FARAH DALAL	32
	13. ROBLEH DALAL 13. ARALEH DALAL	30
	12. BARREH ISMAIL	
	13. HARED BARREH	
	14. YUNIS HARED 14. HAGR HARED 14. GELEH HARED	33
	14. ALI HARED 14. BAHAN HARED	34
	12. SAMATER ISMAIL 12. OLLU ISMAIL	33
	12. HIGGIR ISMAIL 12. GEDI ISMAIL 12. KHAYAT ISMAIL	35
	11. ADAN OMR	34
	11. ABIB OMR 11. DUGEH OMR	33
	11. SAHEL OMR 11. HUSSEIN OMR 11. RAGSALEH OMR 11. ABTIDON OMR	35
	9. HASSAN JIBRIL 9. ADAN JIBRIL 9. OMR JIBRIL (ba Habr Adan)	36
	9. MOHD. JIBRIL (Deriahen)	31
	9. YUNIS JIBRIL	
	10. URKURAG YUNIS	
	11. ADAN URKURAG	
	12. OMR ADAN 12. ALI ADAN	37
	13. ABDI ALI	38
	13. GEDID ALI 13. FARAH ALI 13. SAHEL ALI 13. KHAYAT ALI 13. JEHI ALI 13. GEDI ALI 13. SARMAN ALI 13. HAD ALI	39
	14. HEGEYEH HAD 14. EGAL HAD	40
	14. LODON HAD	41
7. YESIF ISAQ (Saad) (some Yesif with rer Sahel)		58
8. ABANEH AHMED YESIF		43
8. MUSA YESIF (rer Liban)		44

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	HABR AWAL—*continued*	
7. MAKAHIL ISAQ		
8. MOHD. MAKAHIL 8. NUH MAKAHIL		45
8. ABOKR MAKAHIL 8. OMR MAKAHIL		46
8. HASSAN MAKAHIL		
9. ISMAN HASSAN		45
9. ALI HASSAN		47
9. JIBRIL HASSAN 9. ROBLEH HASSAN		48
5. ESA MUSA		
6. ADAN ESA		
7. JIBRIL ADAN		
8. MAHAMUD JIBRIL		49
8. HASSAN JIBRIL 8. IBRAHIM JIBRIL	(Danwadaga)	50
8. ISMAIL JIBRIL		
9. JIBRIL ISMAIL 9. ABDULLEH ISMAIL		
10. MAHAMUD ABDULLEH		54
10. GEDI ABDULLEH (rer Fiqi) 10. MOHD. ABDULLEH (rer Guroh)	(Danwadaga)	50
10. JIBRIL ABDULLEH		
11. IDLEH JIBRIL (rer Idleh)		52
11. FARAH JIBRIL (rer Farah)		53
11. ADOWA JIBRIL (rer Adowa)		
12. BARREH ADOWA 12. ADELI ADOWA 12. ODOWA ADOWA	(Abas or Gashanbur)	51
12. FAHIYA ADOWA 12. ABIB ADOWA 12. MOHD. ADOWA 12. ROBLEH ADOWA 12. LOGEH ADOWA 12. OMR ADOWA 12. YABAL ADOWA	(ba Ayub)	54
6. ABOKR ESA		54
6. MOHD. ESA		
7. HASSAN MOHD.		55
7. JIBRIL MOHD.		
8. OMR JIBRIL		56
9. ABDULLAH OMR 9. ADAN OMR 9. AUL OMR		
8. ABOKR JIBRIL		
9. HASSAN ABOKR		
10. BALEH HASSAN (Danwadaga) 10. MUSA HASSAN		57
11. ALI MUSA		
12. WAIS ALI (rer Wais)		59
12. ABANEH ALI (rer Abaneh) (Danwadaga)		57
12. SAHEL ALI (rer Sahel)		58
12. HAD ALI (Danwadaga)		57
8. MUSA JIBRIL		
9. ABDARAHMAN MUSA 9. ABDULLEH MUSA		60
10. HASSAN ABDULLEH		
11. AHMED HASSAN (Doggoreh)		61
11. DERIAHEN HASSAN		62
10. ABDULLA ABDULLEH (with Abdulla Arab-Gashanbur Abas)		61
8. YUNIS JIBRIL (Fedan)		59
6. IDRAIS ESA		58

TABLE 21—*continued*

Generation number		*Dia-paying group number*
1. SHEIKH ISAHAQ	**ARAB**	
2. ARAB SHEIKH ISAHAQ		
3. ELLI ARAB		
4. MOHAMED ELLI		
5. AHMED MOHAMED		
6. ABOKR AHMED		
7. ABDULLA ABOKR		
8. SAMANEH ABDULLA		
9. HUSSEIN SAMANEH		9
9. YUSUF SAMANEH		8
9. MAHAMUD SAMANEH		
8. GULENEH ABDULLA		6
7. HASHIM ABOKR		
8. HUSSEIN HASHIM (very small)		3
8. OMR HASHIM		
9. MUSA OMR		2
9. SALEBAN OMR		
9. ABDULLA OMR		
10. ADAN ABDULLA (rer Adan Waraba)		4
10. ALI ABDULLA (rer Ali: Burao)		10
10. AHMED ABDULLA		5
7. MUSA ABOKR		
8. MAHAMUD MUSA (Afyera)		1
8. ABDULLA MUSA		
8. YUSUF MUSA (Gelgonof)		3
8. MOHAMED MUSA (Mahad Fanah)		
4. MUSA ELLI (Jigjiga)		
4. SUBER ELLI		7
3. IDMAN ARAB (very small)		6
3. ABDULLA ARAB (Berbera)		(H.A. 61)

1. SH. ISAQ	**EIDAGALLA**
2. GERHAJIS SH. ISAQ	
3. SEED GERHAJIS (Habr Yunis)	
3. DAUD GERHAJIS (Eidagalla)	
4. ESA DAUD	8
4. BILAL DAUD	1
4. MOHD. DAUD (Guyobe)	
5. ALI MOHD. (Afweina)	15
5. URKURAG MOHD.	
6. ALI URKURAG	
7. ISMAIL ALI (Gadwein)	14
7. FIQI SAAD ALI	15
7. MAHAMUD ALI	
7. AHMED ALI	
4. MUSA DAUD	
5. ABOKR MUSA	
6. HASSAN ABOKR	6
6. ADAN ABOKR	7

TABLE 21—*continued*

Eidagaale

EIDAGALLA—*continued*

Generation number		*Dia-paying group number*
5. ADARAHMAN MUSA		
6. YUNIS ADARAHMAN		
7. ADAN YUNIS 7. ISMAIL YUNIS		5
7. OGAD YUNIS 7. MOHD. YUNIS		4
6. ABDULLA ADARAHMAN		
7. MOHD. ABDULLA (ba Delo) 7. IBRAHIM ABDULLA		3
8. KUL IBRAHIM		2
8. ABDI IBRAHIM		8
8. ABOKR IBRAHIM		
9. BARREH ABOKR		9
9. ISMAIL ABOKR		8
9. HUSSEIN ABOKR		
10. MATAN HUSSEIN		
11. HAMUD MATAN		12
11. ROBLEH MATAN		11
11. ADAN MATAN		
12. DAMAL ADAN		
13. GUBDON DAMAL		1
13. DERIA DAMAL 13. FATAH DAMAL 13. GABIB DAMAL 13. HODEH DAMAL	(Damal Yeryer)	13
13. ESA DAMAL		
14. LIBAN ESA 14. HAŞSAN ESA 14. WARFA ESA 14. GULED ESA		10
14. ABDI ESA (Abdi Bareh)		
15. ADAN ABDI 15. AINANSHE ABDI 15. AFWEINE ABDI 15. GULED ABDI	(ba Edu)	18
16. YUSUF S. ABDI 16. ROBLEH S. ABDI 16. JAMA S. ABDI 16. DERIA S. ABDI 16. EGAL S. ABDI 16. GATAH S. ABDI	(baha Guled)	9
16. FARAH SULTAN ABDI 16. DUALEH SULTAN ABDI 16. ABDI SULTAN ABDI 16. ALI SULTAN ABDI	(ba Ambaro)	9
16. ROBLEH S. ABDI 16. ALI S. ABDI 16. RAGEH S. ABDI 16. DUALEH S. ABDI 16. WAAIS S. ABDI 16. HABRWA S. ABDI 16. AWID S. ABID	(baha Abdi)	2
16. MOHD. SULTAN ABDI 16. SEGULLEH SULTAN ABDI 16. AMAREH SULTAN ABDI	(ba Elli)	19
12. BURALEH ADAN (Gashanbur)		16
12. ABANEH ADAN 12. MUSA ADAN 12. BARREH ADAN 12. IRGIN ADAN 12. WAAIS ADAN 12. ABDILLEH ADAN	(Gashanbur)	17

TABLE 21—*continued*

Generation number		*Dia-paying group number*
1. SH. ISAQ	**HABR YUNIS**	
2. IBRAHIM SH. ISAQ		
2. MOHD. SH. ISAQ		
2. MUSA SH. ISAQ		
2. TOLJAALA SH. ISAQ		
2. AWAL SH. ISAQ		
2. AYUB SH. ISAQ		
2. GERHAJIS SH. ISAQ		
3. DAUD GERHAJIS (Eidagalla)		
3. SEED GERHAJIS (Habr Yunis)		
4. ALI SEED (Elli Seed) Cali saaïd		
5. LOGEH ALI		
5. BELEH ALI		1
5. SALAH ALI.		
6. FAREH HAJI SALAH		2
6. HASSAN HAJI SALAH		
7. SAMATER HASSAN		3
7. ISMAN HASSAN 7. ABDI HASSAN 7. SAMAKAB HASSAN 7. SIAD HASSAN		4
7. ABDULLA HASSAN		5 6
4. ARREH SEED BARREH Saaïd		
5. KALIL ARREH		
5. GAMBA ARREH		
5. DANDAN ARREH		
5. KUL ARREH		
5. ISAHAQ ARREH = ISAXAAQ		
6. KALIL ISAHAQ		7
6. KASIN ISAHAQ		
7. HASSAN KASIN		8
7. ADAN KASIN		
8. ALI ADAN		
9. MOHD. ALI		9
9. SEED ALI		10
9. ROBLEH ALI		
10. AHMED ROBLEH 10. ISMAN ROBLEH 10. ALIAMAGAN ROBLEH		11
10. MAHAMUD ROBLEH 10. WAAIS ROBLEH		8
6. ABDULLA ISAHAQ =		
7. AHMED ABDULLA		
7. HASSAN ABDULLA		
7. ABDULLEH ABDULLA ✓		
8. SALAH ABDULLEH		
9. HASSAN SALAH		
10. ABDULLA HASSAN		
11. ALI ABDULLA		12
11. HUSSEIN ABDULLA		13
10. AHMED HASSAN		
11. MOHD. AHMED		14
11. HUSSEIN AHMED		15
11. HASSAN AHMED		
12. HUSSEIN HASSAN		
13. OMR HUSSEIN 13. JIBRIL HUSSEIN		15
13. ISMAIL HUSSEIN		
14. GALAB ISMAIL 14. RAGEH ISMAIL 14. ADAN ISMAIL 14. BURALEH ISMAIL (baha Ahmed)		15
14. MOHD. ISMAIL		
15. YUSUF MOHD.		12
15. GOLIS MOHD. 15. HAGR MOHD. 15. ABTIDON MOHD. 15. BAHDON MOHD. 15. EYA MOHD. 15. AWID MOHD. 15. ARALEH MOHD. 15. DERIA MOHD. 15. SHIRMARKE MOHD. (baha Mohd.)		16

TABLE 21—*continued*

Generation number		*Dia-paying group number*
5. MUSA ARREH — M. CARREH)	**HABR YUNIS**—*continued*	
6. DAMAL MUSA		
6. HASSAN MUSA		17
6. IBRAHIM MUSA		
7. SAMANEH IBRAHIM (Fiqi)		18
7. JIBRIL IBRAHIM (Fiqi)		19
7. ADAN IBRAHIM (Fiqi)		
8. ALI ADAN		20
8. MUSA ADAN		21
8. MAHAMUD ADAN		18
8. JIBRIL ADAN		
9. LIBAN JIBRIL (Erigavo)		22
9. ALLAMAGAN JIBRIL		19
5. ISMAIL ARREH — ISMAÎL AREEH)		
6. MUSA ISMAIL		
7. MOHD. MUSA (Erigavo)		23
7. YUNIS MUSA (Erigavo)		67
7. SALAH MUSA (Turwa) (Erigavo)		
8. JIBRIL TURWA		24
8. MUSA TURWA		25
8. ISMAN TURWA		
9. HAMUD ISMAN		
10. ABDULLA HAMUD		26
10. ABDI HAMUD		27
9. AUL ISMAN (rer Aul) (Burao) REER CAWAL)		
10. OGADYAHEN AUL		
11. FARAH OGADYAHEN		28
11. BELI OGADYAHEN		
12. ISMAN BELI		29
12. MAH BELI		30
12. GEDID BELI		23
12. ADAN BELI		31
6. YUNIS ISMAIL		
7. SAAD YUNIS — Saad Yonnis =		
8. MOHD. SAAD (Idrais)		32
8. HASSAN SAAD (Barkat) }		33
8. MAHAMUD SAAD }		
6. ABDULLA ISMAIL		
7. IDRAIS ABDULLA (baha Ismail)		34
7. MUSA ABDULLA — MUSA Cabdilla		
8. MOHD. MUSA		
9. FARAH MOHD. (+Bartire, ba Sheikhash)		35
8. LOGEH MUSA		
9. ABOKR LOGEH ... ... Abokr Logeh		36
7. OMR ABDULLA		
8. OGAD OMR — UGAD Cumar		
9. WARMOGEH OGAD		37
9. MOHD. OGAD — ~~Udha Cumar~~		
10. WARFA MOHD.		38
10. ABDULLA MOHD.		
11. YUSUF ABDULLA		39
11. HARUN ABDULLA		40
8. ADAN OMR		
9. ELMI ADAN		41
9. EGAL ADAN ~~Egdaha~~		42
9. MOHD. ADAN		
10. ROBLEH MOHD. (Araballa) (baha Ismail) • Robleh Maxamed		34
10. HILDID MOHD.		
11. HUSSEIN HILDID (rer Hussein) Reer Hussein)		43
11. ABOKR HILDID (baha Ismail) baha Ismaaiil)		34
11. HASSAN HILDID (Gumbur) (Gumbur)		42
11. ISMAN HILDID		
11. ELMI HILDID		45

TABLE 21—*continued*

HABR YUNIS—*continued*

Generation number		*Dia-paying group number*
12.	MOMIN ISMAN	44
12.	MAHAMUD ISMAN	45
12.	ALI ISMÁN (ba Dolbahanta)	46
12.	ABDI ISMAN (ba Dolbahanta)	
13.	SAHEL ABDI	47
13.	FARAH ABDI 13. OMR ABDI (ba Nuh)	45
12.	HERSI ISMAN	
13.	YUSUF HERSI 13. FAHIYA HERSI 13. ALI HERSI (Hersi Barreh)	48
13.	HILDID HERSI (Hersi Barreh)	49
13.	SEED HERSI (Hersi Barreh)	
14.	WEID SEED 14. ABDI SEED (rer Weid) (Hersi Barreh)	50
14.	WARSAMA SEED 14. EGAL SEED (rer Waraba) (Hersi Barreh) ...	51
13.	ABDI HERSI (Hersi Barreh)	
14.	AWID ABDI 14. SALAH ABDI (Hersi Barreh)	52
14.	DERIA ABDI (Hersi Barreh)	53
14.	GUROD ABDI 14. ADAN ABDI 14. ODOWA ABDI 14. ALI ABDI (ba Basla) (Hersi Barreh)	54
13.	AINANSHE HERSI	
14.	EGAL AINANSHE 14. OMR AINANSHE (baha Ainashe)	55
14.	ESA AINANSHE 14. SUBAN AINANSHE 14. GULED AINANSHE (ba Ibran) (baha Ainashe)	56
14.	AHMED AINANSHE 14. SAMALE AINANSHE (ba Egalo) (baha Ainashe)	57
14.	HERSI AINANSHE 14. ABDI AINANSHE (ba Basla) (baha Ainashe)	58
14.	FARAH AINANSHE (ba Basla) (baha Ainashe)	59
14.	LIBAN AINANSHE 14. WAAIS AINANSHE (ba Mun) (baha Ainashe)	60
14.	KOSHIN AINANSHE (ba Mun) (baha Ainashe)	61
14.	GUTALE AINANSHE (ba Mun) (baha Ainashe)	62
14.	SAMATER AINANSHE 14. WARFA AINANSHE (ba Jibrahil) {	63 64
14.	SEGULLEH AINANSHE (ba Jibrahil)	
15.	DUALEH SEGULLEH 15. MOHD. SEGULLEH 15. MAHAMUD SEGULLEH (ba Adan Madoba)	64
15.	AHMED SEGULLEH 15. WAAIS SEGULLEH 15. FARAH SEGULLEH 15. GELEH SEGULLEH (ba Elli)	1
15.	ROBLEH SEGULLEH (ba Awal)...	65
15.	DERIEH SEGULLEH (ba Awal)	
16.	HERSI DERIEH 16. ADAN DERIEH 16. ABDILLEH DERIEH 16. ALI DERIEH (ba Madedo)	
16.	YUSUF DERIEH 16. SAMATER DERIEH	
16.	ISMAIL DERIEH 16. ABOKR DERIEH 16. MAHAMUD DERIEH (ba Mardal)	
16.	EGAL DERIEH 16. NUR DERIEH 16. ALI DERIEH (ba Ebleh)	
16.	AWID DERIEH 16. GULED DERIEH 16. HASSAN DERIEH 16. AHMED DERIEH (ba Awraleh)	
16.	ISMAN DERIEH	
	(baha Derieh)	63
16.	JAMA DERIEH 16. AMAN DERIEH (ba Makahil)	66

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	HABR HABUSHED-HABR TOLJAALA	
1.	SH. ISAQ	
2.	AHMED SH. ISAQ (Toljaala) (Hargeisa)	1
2.	IBRAHIM SH. ISAQ (Sambur) (Burao and Erigavo)	2
2.	MOHD. SH. ISAQ (Ibran)	
3.	ESA MOHD.	3
3.	EGALE MOHD.	4
3.	ABDULLA MOHD.	
4.	YUNIS ABDULLA	
5.	ALI YUNIS	5
5.	KHAIR YUNIS	6
4.	HASSAN ABDULLA 4. BUTALEH ABDULLA 4. ADAN ABDULLA 4. HELDID ABDULLA }	6
2.	MUSA SH. ISAQ	
3.	MOHD. MUSA	7
3.	ABOKR MUSA	
4.	JIBRIL ABOKR	
5.	OMR JIBRIL	
6.	BEEDA OMR	8
6.	ISAHAQ OMR	
7.	AYUN ISAHAQ	9
7.	ALI ISAHAQ (Afweina)	10
7.	URURSUGEH ISAHAQ	8
5.	ABOKR JIBRIL	
6.	SAMANEH ABOKR	
7.	ABDULLA SAMANEH 7. MUSA SAMANEH }	11
7.	HERSI SAMANEH (with Ogaden)	
6.	MOHD. ABOKR	
7.	YESIF MOHD.	
8.	SAMANEH YESIF 8. ABDARAHMAN YESIF 8. HASSAN YESIF }	12
8.	ABREN YESIF	
9.	SAHEL ABREN	13
9.	ROBLEH ABREN	12
7.	ADAN MOHD. (Adan Madoba)	14
7.	NUH MOHD.	
8.	ABDULLA NUH	
9.	ABDILLEH ABDULLA	
10.	ABOKR ABDILLEH	15
10.	HASSAN ABDILLEH	16
10.	BARREH ABDILLEH 10. HUSSEIN ABDILLEH }	17
10.	ALAMAGAN ABDILLEH	18
10.	FARAH ABDILLEH	
11.	BELEH FARAH	19
11.	FAHIA FARAH	20
11.	AHMED FARAH	
12.	ROBLEH AHMED	19
12.	ABTIDON AHMED	21
12.	HILDID AHMED	22
12.	HAD AHMED	23
12.	ABOKR AHMED	24
12.	BENIN AHMED 12. SALAH AHMED }	20
12.	MOHD. AHMED	
13.	RAGEH MOHD.	19
13.	BADED MOHD. 13. OLLO MOHD. }	25
13.	BURALEH MOHAMED 13. JIBRIL MOHAMED }	26
11.	DAHIR FARAH	
12.	NUR DAHIR } (ba Gerhajis) 12. GULED DAHIR } (ba Gerhajis) 12. KALIL DAHIR } (ba Gahelo) 12. AHMED DAHIR } (ba Gahelo)	27

TABLE 21—*continued*

HABR HABUSHED-HABR TOLJAALA—*continued*

Generation number		*Dia-paying group number*
	12. BARREH DAHIR	28
	12. EGAL DAHIR	29
	12. HASSAN DAHIR	30
	12. OMR DAHIR	
	13. OLLO OMR, 13. KALIL OMR, 13. ALI OMR (ba Abdarahman)	28
	13. ABOKR OMR	18
	13. MOHD. OMR (ba Esa)	31
	13. GULED OMR (ba Esa)	32
	13. ISMAIL OMR	
	14. YUSUF ISMAIL	
	15. MUSA YUSUF, 15. JIBRIL YUSUF (ba Dolbahanta)	27
	15. HASSAN YUSUF (ba Dolbahanta)	33
	15. AHMED YUSUF (ba Dolbahanta)	34
	15. ABDI YUSUF (ba Dolbahanta)	35
	15. ADAN YUSUF, 15. SAMATER YUSUF, 15. WAAIS YUSUF (ba Awal)	36
	15. MOHD. YUSUF, 15. FARAH YUSUF, 15. ODOWA YUSUF (ba Omr)	37
6.	MUSA ABOKR	
7.	UDURUHMIN MUSA	38
7.	IDRIS MUSA	39
7.	ADARAHMAN MUSA	
8.	ISMAN ADARAHMAN, 8. ABDILLEH ADARAHMAN, 8. ISAQ ADARAHMAN (ba Majelo)	40
8.	YUNIS ADARAHMAN (ba Esa)	
9.	MOHD. YUNIS	39
9.	ISMAN YUNIS	
10.	BARREH ISMAN	41
10.	MOHD. ISMAN	
11.	ALI MOHD.	42
11.	WAAIS MOHD. (Baleh)	
12.	AFI BALEH	40
12.	ELMI BALEH, 12. MUSA BALEH, 12. SAMATER BALEH	43
8.	BARREH ADARAHMAN (ba Esa) (Be'eda)	
9.	ALI BARREH	44
9.	MOHD. BARREH	45
9.	YUNIS BARREH	
10.	BURALEH YUNIS	46
10.	BEEDO YUNIS	
11.	SAMATER BEEDO, 11. WADOH BEEDO (ba Sambur)	47
11.	IDLEH BEEDO (ba Jibrahil)	48
11.	FARAH BEEDO (ba Jibrahil)	
12.	OMR FARAH, 12. FAHIYA FARAH, 12. MUSA FARAH, 12. ROBSIGE FARAH, 12. GEDI FARAH, 12. WAAIS FARAH, 12. SAHEL FARAH (Boho)	49
12.	AHMED FARAH (ba Furuwiyo)	45
12.	ABDILLEH FARAR (ba Furuwiyo)	45
12.	ALI FARAH (ba Furuwiyo)	50
12.	IDLEH FARAH (ba Furuwiyo)	46
13.	ISMAN IDLEH	
13.	ABDI IDLEH	
13.	BELI IDLEH	
13.	ALI IDLEH	
13.	GULED IDLEH	
13.	MAHAMUD IDLEH	
13.	MOHD. IDLEH	
13.	FARAH IDLEH	
13.	HUSSEIN IDLEH	

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	DAROD	
1.	DAROD (Abdurahman Ismail) married a daughter of " Dir "	
2.	SUHURRE DAROD	
2.	ESA DAROD	
2.	YUSUF DAROD (Aurtobleh)	AURTOBLE
2.	TANADLEH DAROD	
3.	LELKASEH TANADLEH	LELKASEH
3.	KORSHE TANADLEH	
3.	MALASMUGE TANADLEH	
3.	FATAH TANADLEH	
3.	LEGOD TANADLEH	
3.	JUS TANADLEH	
3.	ALAYE TANADLEH	
2.	SEED DAROD	
3.	MAREHAN SEED	MAREHAN
3.	FAHIA SEED	
2.	MOHD. DAROD	
3.	KUMADE MOHD.	
4.	ABDI KUMADE (Gelimes)	
4.	ABSAME KUMADE	
5.	WETEN ABSAME	
5.	BALAD ABSAME	
5.	ABDEGALLA ABSAME	
5.	OGADEN ABSAME	OGADEN
5.	WAK ABSAME	
6.	TAGAL WAK	TAGALWAK
3.	KOMBE MOHD.	
4.	GARWEINE KOMBE	
4.	SALEBAN KOMBE	
4.	HAILE KOMBE	
4.	JIRAM KOMBE	
4.	JAMBEL KOMBE	
4.	GEH KOMBE	
4.	AMLALEH KOMBE	
5.	YABARAK AMLALEH	
5.	GHERRI AMLALEH	GHERRI
5.	HARTI AMLALEH	
6.	MOHAMED HARTI	MIJERTEIN
6.	MAHAMUD HARTI (Murasante)	
7.	HINJIYEH MURASANTE	HINJIYE
7.	MOHAMED MURASANTE	WARSANGELI
7.	INJIH MURASANTE	
7.	BAKANKE MURASANTE	
8.	GOBIAWOOD BAKANKE	
8.	AUTOMALE BAKANKE	
8.	OLMARARE BAKANKE	
6.	MURA ASSEH HARTI (Ahmed)	
7.	DESHISHE MURA ASSEH	DESHISHE
7.	KAPTANLEH MURA ASSEH	KAPTANLEH
7.	MAGANLABBE MURA ASSEH	MAGANLABBE
7.	TINLEH MURA ASSEH	TINLEH
6.	KASKAGABE HARTI	KASKAGABE
6.	LIBANGASHE HARTI	
6.	GESAGUL HARTI (Guled)	
6.	SEED HARTI (Dolbahanta) (Musa)... ...	DOLBAHANTA

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	DOLBAHANTA	
1.	DAROD	
2.	MOHD. DAROD	
3.	KOMBE MOHD.	
4.	AMLALEH KOMBE	
5.	HARTI AMLALEH	
6.	SEED HARTI (Dolbahanta)	
7.	YUNIS SEED	
7.	AHMED SEED (Hayag)	1
7.	MUSA SEED	
8.	MOHD. MUSA	
8.	ABOKR MUSA	
8.	BARRA MUSA	
8.	ABDULLA MUSA	
9.	YAHIA ABDULLA	2
9.	HABRWA ABDULLA	
10.	KHALID HABRWA	
11.	DUDUB KHALID	
12.	MOHD. DUDUB	3
12.	GULED DUDUB	
12.	MUSA DUDUB	
13.	ABDILLEH MUSA	3
13.	IBRAHIM MUSA	
13.	ABDI MUSA	4
13.	MOHD. MUSA	
10.	SHURSHURE HABRWA (or Gerad or Ughaz)	
11.	ALI GERAD	5
11.	HASSAN UGHAZ	6
11.	MOHD. UGHAZ	7
11.	HAMUD UGHAZ	8
11.	HUSSEIN UGHAZ	
11.	ABDI GERAD (Khayat)	
12.	OMR ABDI	
12.	KHAIR ABDI	
13.	ALI KHAIR	9
13.	ISMAN KHAIR	
13.	IBRAHIM KHAIR	
13.	WAIS KHAIR	
14.	ISMAN WAAIS	
15.	SUBAN ISMAN	10
15.	NUR ISMAN	9 (rer Samakab)
15.	AHMED ISMAN	
15.	AWER ISMAN	
15.	KHAIR ISMAN	
11.	FARAH GERAD	
12.	BARKAT GERAD	
13.	ALI BARKAT	11
13.	AMIR BARKAT	12
13.	MAHAMUD BARKAT	
14.	EGAL MAHAMUD	13
14.	ESA MAHAMUD	14
14.	WEGEL MAHAMUD	12
14.	ALI MAHAMUD	

TABLE 21—*continued*

DALBAHANTA—*continued*

Generation number		*Dia-paying group number*
	15. KOSHIN ALI	12
	15. GEDI ALI	12
	15. NALEYA ALI	
	16. SHIRWA NALEYA	
	17. MUSA SHIRWA 17. SUBAN SHIRWA }	14
	17. BEEDA SHIRWA 17. ALI SHIRWA }	12
12. MOHD. GERAD (ba Ararsama)		16
13. MAHAMUD MOHD.		
	14. AUDON MAHAMUD	
	14. WARFA MAHAMUD	
	14. HERSI MAHAMUD	
	14. SAMATER MAHAMUD	
	14. FARAH MAHAMUD	
	14. ALI MAHAMUD	
	15. ADUR ALI	
	15. SAMAKAB ALI	
	15. OMR ALI	
	15. MAHAMUD ALI	
	16. SAMATER MAHAMUD	
	16. FARAH MAHAMUD	
	16. MOHD. MAHAMUD	
	17. ALI MOHD. 17. BEDER MOHD. } (bih Idur) 17. YUSUF MOHD.	
	17. NALEYA MOHD. 17. NUR MOHD. } (ba Mijertein) 17. BASALEH MOHD.	
	17. HERSI MOHD. 17. ESA MOHD. } (ba Ogaden)	
12. AHMED GERAD		
13. ALIGHERI AHMED		
	14. SUBAN ALIGHERI 14. SHIRWA ALIGHERI } (ba Ogaden)	17
	14. HERSI ALIGHERI 14. ISMAIL ALIGHERI 14. GULED ALIGHERI } (ba Lag Madoba)	18
	14. WARFA ALIGHERI	
13. NALEYA AHMED		19
13. SAMAKAB AHMED 13. EGAL AHMED }		20
13. HASSAN AHMED		
13. WARFA AHMED		
13. ADAN AHMED		
	14. FARAH ADAN	
	14. MOHD. ADAN	
	15. ARALEH MOHD. (Araleh Mahad)	21
	14. WAAIS ADAN	
	15. WARFA WAAIS 15. HILDID WAAIS 15. DULUL WAAIS	22
	16. NUR DULUL	
	15. GULED WAAIS 15. NALAYE WAAIS 15. SHIRWA WAAIS	23

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	DOLBAHANTA—*continued*	
	14. HAGR ADAN	
	15. AMIR HAGR 15. ADAD HAGR 15. ELMI HAGR 15. GULED HAGR 15. GERDI HAGR 15. WARSAMA HAGR (ba Ogaden)	24
	15. AYAR HAGR 15. ADAN HAGR (bah Warsengeli)	25
	15. FATAH HAGR (bah Warsengeli) ... ... 15. FARAH HAGR	28
	16. OLLU FARAH 16. EGAL FARAH	
	17. ARALEH EGAL ... ... 17. HERSI EGAL ... ... 17. MOHD. EGAL ... ... 17. AHMED EGAL 17. NALEYA EGAL 17. ISMAIL EGAL 17. JAMA EGAL 17. MAHAMUD EGAL (ba Hawiya)	26 27 28 29
	11. MAHAMUD GERAD	
	12. NUR MAHAMUD 12. WAAIS MAHAMUD	
	13. OMR WAAIS	30
	12. HEGIS MAHAMUD 12. SIAD MAHAMUD	
	13. JAMA SIAD	
	14. MAHAMUD JAMA 14. AHMED JAMA ... ... 14. SAMAKAB JAMA ... ... 14. WARFA JAMA	 31 32
	15. NALEYA WARFA 15. FARAH WARFA	
	16. DERIEH FARAH 16. AFI FARAH ... ... 16. NUR FARAH	33
	16. KOSHIN FARAH 16. KHAIR FARAH 16. NALEYA FARAH 16. EGAL FARAH (ba Hayag) ... ... 16. ALI FARAH	34
	17. RAGEH ALI 17. HASSAN ALI 17. MOHD. ALI ... ... 17. MAHAMUD ALI ... ... 17. WARSAMA ALI	 35 36
	18. HUSSEIN WARSAMA 18. DERIEH WARSAMA 18. HASSAN WARSAMA 18. GULED WARSAMA 18. MOHD. WARSAMA	
	19. MUSA MOHD. (Eye Mohd). 19. LIBAN MOHD. 19. HUSSEIN MOHD. 19. HASSAN MOHD. 19. ABDI MOHD. 19. OMR MOHD. 19. ARALEH MOHD. 19. ALI MOHD. 19. ELMI MOHD. 19. AHMED MOHD.	37

DOLBAHANTA—*continued*

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	WARSANGELI	
1.	DAROD	
2.	MOHD. DAROD	
3.	KOMBE MOHD.	
4.	AMLALEH KOMBE	
5.	HARTI AMLALEH	
6.	MAHAMUD HARTI (Murasante)	
7.	HINJIYEH MURASANTE	1
7.	MOHD. MURASANTE (Warsangeli)	
8.	MUSA MOHD. (Warlabbe)	2
8.	MAHAMUD MOHD. (Warmaeke)	
9.	HASSAN MAHAMUD (Hamar Geleh)	
10.	YUSUF HASSAN (Dubeis)	3
11.	MAKAHIL YUSUF	
11.	MUSLIM YUSUF	
11.	MAHMUD YUSUF	
11.	JIDWAKURU YUSUF	
11.	IDRAIS YUSUF	
11.	ISMAN YUSUF	
11.	ISAQ YUSUF	
12.	HANIF ISAQ	
12.	HARUN ISAQ	
13.	OGADYAHAN HARUN	
13.	YUSUF HARUN	
10.	IBRAHIM HASSAN	
11.	ISMAN IBRAHIM	
11.	RIKEYE IBRAHIM	
11.	WADALMOGEH IBRAHIM	
11.	OMR IBRAHIM	
12.	NUH OMR	1
12.	AHMED OMR	4
12.	MAHAMUD OMR (with H.T. Ahmed Farah B)	5
12.	YASIF OMR	
12.	MAHAMUD OMR (Toljaala)	
13.	ABOKR MAHAMUD	4
13.	SEED MAHAMUD	
14.	ADAN SE'ED	6
13.	ESA MAHAMUD	
14.	HUSSEIN ESA	4
14.	SE'ED ESA	4
14.	YAKUB ESA	
15.	ADAN YAKUB	4
15.	SE'ED YAKUB	
16.	JIBRIL SE'ED	4
16.	NUH SE'ED	
16.	YUNIS SE'ED	
16.	YUSUF SE'ED	
17.	ISMAN YUSUF	4
17.	HASSAN YUSUF	7
17.	MOHD. YUSUF	4
17.	ESA YUSUF	
18.	ISMAN ESA	7
18.	OMR ESA	
18.	ALI ESA	
19.	ISMAIL ALI (rer Haji)	7
19.	LIBAN ALI	
20.	MOHD. LIBAN	4
20.	HASSAN LIBAN	
20.	AHMED LIBAN	
20.	YUSUF LIBAN	

TABLE 21—*continued*

Generation number		*Dia-paying group number*
	MIJERTEIN—*continued*	
14.	OGAD SALEBAN	OGAD SALEBAN
14.	ISMAIL SALEBAN	
14.	ADARAHIN SALEBAN	ADARAHIN
14.	ADAN SALEBAN	
14.	SEED SALEBAN	
14.	MAHAMUD SALEBAN	
15.	ISMAN MAHAMUD	ISMAN MAHAMUD
16.	LIBAN ISMAN	
16.	ADAN ISMAN	
16.	AHMED ISMAN	(ba Garen)
16.	IDRIS ISMAN	(ba Garen)
16.	HUSSEIN ISMAN	(ba Garen)
16.	YUSUF ISMAN	
17.	DINEH YUSUF	(ba Lelkasseh)
17.	DUDUB YUSUF	(ba Lelkasseh)
17.	ESA YUSUF	
17.	ABDI KARIM YUSUF	
17.	MOHD. YUSUF	
18.	AMIR MOHD.	
18.	ELMI MOHD.	
18.	MUSA MOHD.	
18.	ISMAIL MOHD.	
18.	OMR MOHD.	
19.	SAMATER OMR	
19.	GULED OMR	
19.	YUSUF OMR	
19.	ALI OMR	
20.	ISMAIL ALI	
20.	MOHD. ALI (Boho)	
20.	DALAL ALI	
20.	IDRIS ALI	
20.	YUSUF ALI	
20.	MUSA ALI (at B. Beila)	
20.	MOHD. ALI	
21.	YUSUF MOHD.	
22.	MUSA YUSUF	
22.	OGADYAHEN YUSUF	(Gharabsare)
22.	SAMATER YUSUF	(Gharabsare)
22.	NUR YUSUF	(Gharabsare)
22.	SHIRWA YUSUF	
22.	FARAH YUSUF	
22.	HASSAN YUSUF	(ba Dubeis)
22.	SEED YUSUF	(ba Dubeis)
22.	MAHAMUD YUSUF (ba Dir Robleh)	
23.	OGADYAHEN MAHAMUD	(ba Dolbahanta) (Gharabsare)
23.	LIBAN MAHAMUD	(ba Dolbahanta) (Gharabsare)
23.	EGALEH MAHAMUD	(ba Dolbahanta) (Gharabsare)
23.	HERSI MAHAMUD	(ba Dolbahanta) (Gharabsare)
23.	FAHIYA MAHAMUD	(ba Dolbahanta) (Gharabsare)
23.	SHIRWA MAHAMUD	(ba Yakub) (Gharabsare)
23.	OMR MAHAMUD	(ba Yakub) (Gharabsare)
23.	HASSAN MAHAMUD	(ba Yakub) (Gharabsare)
23.	NUH MAHAMUD	(ba Yakub) (Gharabsare)
23.	HUSSEIN MAHAMUD	(ba Yakub) (Gharabsare)
23.	WA'AIS MAHAMUD	(ba Yakub) (Gharabsare)
23.	SAMATER MAHAMUD	(ba Dir)
23.	WARFA MAHAMUD	(ba Dir)
23.	GULED MAHAMUD	(ba Dir)
23.	MOHD. MAHAMUD	(ba Dir)
15.	OMR MAHAMUD...	OMR MAHAMUD
16.	YUNIS OMR	
16.	IBRAHIM OMR	
17.	FIQI ELMI IBRAHIM	
16.	ALI OMR	
16.	NASIR OMR	
16.	MOHD. OMR	
17.	ABDI KARIM MOHD.	
17.	OMR MOHD.	

TABLE 21—*continued*

Generation number | *Dia-paying group number*

MIJERTEIN—*continued*

18. ISAHAQ OMR
18. MOHD. OMR
18. ABDI KARIM OMR
18. ALI GEDI OMR } (baha Dolbahanta)
18. AHMED OMR
18. HUSSEIN OMR } (ba Lelkasseh)
18. YUNIS OMR ?
18. ALI OMR ?
18. NASIR OMR ?
18. FIQI HASSAN OMR (ba Aurtobleh)

16. ISAHAQ OMR
17. MOHD. ISAHAQ
17. ESA ISAHAQ
18. ABDI ESA
19. HERSI ABDI
19. HILDID ABDI } (ba Aurtobleh or bih Ina Hersi)

17. ABDULLEH ISAHAQ
18. AHMED ABDULLEH
18. JIBRAHIL ABDULLEH
19. EGALEH JIBRAHIL
20. ADAN EGALEH
20. MOHD. EGALEH
20. LIBAN EGALEH
20. SHIRWA EGALEH
21. SHIRMARKE SHIRWA
21. FARAH SHIRWA
22. MOHD. FARAH (bih Ina Mohd.)
23. ALI MOHD.
23. MUSA MOHD.

22. HERSI FARAH (bih Ina Mohd.)
23. MAHAMUD HERSI
23. AHMED HERSI } (bih Ina Iman)
23. EGAL HERSI (ba Lelkasseh)
23. ELMI HERSI
23. ADAN HERSI
23. NUR HERSI } (bih Ina Sikawa)
23. YUSUF HERSI

22. GULED FARAH (ba Marehan)
22. KHALIF FARAH
22. ABDULLA FARAH
22. DALAL FARAH } (bih Ina Mahamud)
22. WARSAMA FARAH
22. IROBEH FARAH } (bih Ina Ali)
22. ALI FARAH
22. DAROD FARAH } (bih Ina Dalal)
22. (Ba Abasgul)
22. EGEH FARAH
22. MAHAT FARAH } (ba Dir)
23. WARSAMA MAHAT
23. MAGAN MAHAT
23. JAMA MAHAT
23. WARFA MAHAT } (bih Ina Ali)
23. KOSHIN MAHAT
23. NUR MAHAT
23. MOHD. MAHAT
23. ADAN MAHAT } (bih Ina Guled)
24. OMR ADAN
24. HERSI ADAN
24. FARAH ADAN
24. HASSAN ADAN
24. ALI ADAN } (bih Ina Nur)
24. MAHAMUD ADAN
24. GULED ADAN
24. JAMA ADAN
24. ABDI ADAN
24. WARSAMA ADAN } (bih Ina Shirmarke)

TABLE 21—*continued*

Generation number

Dia-paying group number

MIJERTEIN—*continued*

15. ESA MAHAMUD ... ... ESA MAHAMUD

16. MOHD. ESA (ba Marehan)
16. ABOKR ESA (ba Lelkasseh)

17. HASSAN ABOKR
17. ISMAN ABOKR
17. WARFA ABOKR
17. OGAD ABOKR

18. IDRIS OGAD

19. HASSAN IDRIS
19. YUNIS IDRIS

18. HASSAN OGAD

19. NUH HASSAN
19. BE'EDYAHEN HASSAN
19. WARSAMA HASSAN
19. ALI-NUR HASSAN
19. EGAL HASSAN

18. AHMED OGAD

19. (Ba Dir)
19. (Ba Lelkasseh)

18. MOHD. OGAD

19. SE'ED MOHD.

19. ABDI KARIM MOHD.

20. ALI ABDI KARIM
20. FARAH ABDI KARIM } (rer Farah)

19. HASSAN MOHD.

20. ALI HASSAN

21. YUNIS ALI (rer Yunis)

16. MUSA ESA (ba Lelkasseh)

17. YUNIS MUSA

17. NUH MUSA
17. MOHD. MUSA

18. HUSSEIN MOHD.
18. ALI MOHD.
18. AHMED MOHD.

19. SAMAKAB AHMED
19. ISAHAQ AHMED

20. SAMAKAB ISAHAQ
20. MUSA ISAHAQ

21. NALEYA MUSA
21. MOHD. MUSA (ba Aurtobleh)
21. BE'EDYAHEN MUSA

22. SAMATER BE'EDYAHEN
22. SHIRWA BE'EDYAHEN
22. JARAFLEH BE'EDYAHEN

NOTE ON MIJERTEIN.

I am of opinion that the Mijertein show Malayan influence, probably as a result of their extensive trade with South Arabia where there are colonies of Malays. The opinion is purely personal, first suggested by the facial features and headgear of Mijertein.

I do not know whether the Mijertein have well-defined dia-paying groups.

TABLE 21—*continued*

SUNDRY SMALL TRIBES AND SECTIONS

Generation number		*Group number*
AYUB SH. ISAHAQ	With H.A. Saad Musa, Hargeisa	1
WARAMIYO—HASSAN WARAKIYO—ALI IGU—?	AKISHU (with H.A. Ahmed Abdulla, Hargeisa)	1
HAWIYA rer Fiqashini	With Nogal Dolbahanta	1
RER DOD	With H.T. Mohd. Abokr, Burao	1
HINJINLEH	? Pre-Somali, with Dolb. bih Idrais, Erigavo.	
MAGADLEH	? Pre-Somali, with Dolb. bih Idrais, Erigavo.	
JIBRAHIL	? Pre-Somali, Erigavo ... ... (some also with rer Hersi Ainanshe, Burao, and in Ogaden)	1
GEHAILE	? Mijertein or pre-Somali, Erigavo	1
TURYER	Live with Dolb. and Musa Abokr, Erigavo	1
LO JIR	Pre-Somali and some Gurgurreh with Wars. Omr, Erigavo.	
BARTIRE ba Sheikhash	With H.Y. Musa Abdulla, Farah Mohd., Berbera.	
ABASGUL	Some with Dolb. ba Ararsama.	
MIDGAN	Musa Derieh and Madiban, hunters and leather workers, pre-Somalis, with all tribes.	
TOMAL	Blacksmiths, with all tribes, pre-Somali.	
YIBIR	Sorcerers, with all tribes, especially Mijertein: pre-Somali. ? Some with Turyer.	
ARABIAN	Arab Meherri with Mijertein, also many fishermen traders and wives, especially with coast tribes.	
ZEILAWI	Very mixed race of the ancient city of Zeila.	

B. The Somali Race

445. The Persians and later the Arabs, before the founding of the Moslem religion, invaded Zeila in pre-Somali times. The local inhabitants were then believed to have been Galla. For this reason, traces of more old pagan customs and folk-lore, and much useful knowledge of Asiatic agriculture still exist in the north-west of the Protectorate. The beginning of the Somali race as it exists to-day is bound up with the legend of the arriyal on the Somali coast (at Heis and Mait) of the " Cultural Heroes " Darod and Isaq. The cause of this migration of Arabs to the Somali coast, which is believed to have started in about A.D. 1200, was presumably due to some catastrophe or other upsetting of economic equilibrium in Arabia. The migration of Arabs continued, and to some extent still continues, and by intermarriage the Somali race has been formed. Vestiges of an older race are still seen amongst the older type of Midgan, who is usually short and dark, and of different facial features from the average Somali. But even the Midgans are now being absorbed and most of the younger Midgans are not distinguishable from Somalis.

446. *Darod* probably landed first at Heis about ten miles south-west of Mait. His great-great-grandson Harti with his family and followers lived in the Al Hills and in the Daror valley from Hubera to perhaps Meloden. After a time Harti's family became unwieldy and, just as Abraham separated from Lot, Harti sent his sons out to search for new grazing areas. *Mijertein* (Mohamed Harti) the eldest, went east, his descendants spreading southwards along what is now the Somalia Coast, many becoming seamen and traders, and intermarrying to some extent with Arabs, Malays, and Indians. *Murasante* and *Mura Asseh* (Warsengeli, etc.) stayed in the Al Hills, Upper Daror valley, and the Makhir coast, where they collected gums and kept cattle. *Dolbahanta* went south, and his people owned the Nogal. He was buried at Badwein at the eastern end of the Ain.

447. Other descendants of Darod including *Marehan* Seed and *Ogaden* Absame also went further south and west to found the tribes to which they gave their names.

448. The descendants of Isaq (later Isahaq) who landed probably a little later than Darod at Mait, presumably migrated in much the same way, driven by the overcrowding of the Makhir coast and Al Hill areas as the Somalis increased in numbers. A few Habr Yunis have always remained at Mait, and in the area south of this, but the bulk of the Isaq group migrated south and west, and formed the central core of the population of the Somaliland Protectorate.

449. Dir, the father-in-law of Darod, is said to be the uncle of Esa Madoba and brother of Hawiya Irrir, who founded the *Esa* tribe of Zeila and the *Hawiya* of Somalia respectively. Ram Nag, the great-grandfather of Dir, and Samarone the patriarch of the *Gadabursi*, are of unknown origin, but probably Arabians who landed at Zeila.

450. The Somalis were originally Sunni Mohammedans of the Kadirieh sect. The Ahmedia of 1870 became Anderawieh and later Shiekh Mohamed Salih founded the Saleher sect, now followed by many Somalis. Practically the whole Somali race is Moslem.

451. The following brief historical notes have been extracted in part from Jardine's "Mad Mullah of Somaliland" (Jardine 1923) :—

circa	1200	Isaq and Darod, patriarchs of the Somali race, landed on Makhir coast.
	1500	Turks at Zeila.
	1516	Zeila burnt by Portuguese (Prince of Senna, Sheriff of Mocha).
	1827	English ship wrecked: first English-Somali treaty.
	1839	British captured Aden.
	1840	British-Somali Trade Treaty.
	1842	Johnston visited Berbera.
	1854	Burton's Zeyla-Harar-Berbera trip.
	1855	Burton attacked at Berbera by Habr Awal.
	1870	Mohamed Abdalla Hassan born near Kirit (later known as the "Mad Mullah").
	1874–75	Egypt controlled Massawa, Bulhar and Berbera.
	1884	Egypt evacuated Somali Coast, British Garrison to Berbera from Bombay.
	1885	British treaties with Esa, Gadabursi, and Isaq tribes.
	1886	British treaty with Warsengeli.
	1895	Mohamed Abdalla Hassan's Saleher religious revival in Berbera failed.
	1898	Foreign Office took over administration of British Somaliland Protectorate from India Office. The Protectorate was then only self-supporting British dependency in eastern Africa.
	1899	First truculent letter from "Mullah" at Kirit to Protectorate Administration.
	1900	Abyssinians fought Mullah at Haradigit. Mullah took 2,000 Eidegalla camels.
Nov.	1900	Swayne's first expedition: engagements at Kirit, Samala, Welahed, Anahadigli, Kurgerad, Ferdidin.
Oct.	1901	Swayne's second expedition: Erago.
Oct.	1902	Manning: Third expedition: Hobbia, Gumburu.
April	1903	Daratoleh, Jeyd.
July	1903	Egerton: Fourth expedition.
Jan.	1904	Jidbali.
Mar.	1904	Jidali occupied: Bihen, Higligab, and Las Khoreh.
21st Mar.	1904	Illig (Eil).
Oct.	1904	Restalloza Peace.
April	1909	Wingate Mission.
Nov.	1909	British withdrawal to coast.
9th Aug.	1913	Dul Madoba (Corfield killed).
5th Sept.	1913	Mullah raided Burao.
12th Mar.	1914	Mullah raided Berbera. Somaliland Camel Corps started.
Nov.	1914	Shimbir Beris.

Oct.	1917	Endau.
Feb.	1919	Ok.
Nov.	1919	Fifth and " final " expedition.
Jan.	1920	Defeat of Mullah: Medishe, Jidali, Badan, Taleh, Galbaribur. 3,000 H.Y., H.T., and Dolbahanta attacked Mullah at Gorah near Shinileh. The year of aeroplanes (Daiurada).
Nov.	1920	Mullah died of influenza, or perhaps smallpox. Gerad Mahamud Ali Shirreh of Warsengeli deported to Seychelles for seven years for exerting his own form of " native authority."
	1922	District Commissioner, Burao, shot in riot over direct taxation. Habr Yunis punished by fine, and indirect substituted for direct taxation.
	1923	Mijertein insurrection at Buran.
	1928	German surveyor with Anglo-Egyptian boundary commission killed by Esa.
	1929	Anglo-Ethiopian boundary defined.
	1930	Anglo-Italian Boundary Commission.
	1934	Italians attacked Ethiopians with Boundary Commission at Walwal. Italo-Ethiopian war started.
	1937	Ethiopian refugees to Borama.
Aug.	1940	British evacuated Protectorate.
Mar.	1941	Italians evacuated Protectorate.
Aug.	1944	Somaliland Camel Corps mutinied and was disbanded.
June	1945	Locust riots Hargeisa, Burao, and Erigavo. Attempted assassination of District Commissioner, Burao.
Nov.	1947	Fighting in Hargeisa, November 26th to 28th, between Habr Awal and Habr Gerbajis.

452. Reference to the detailed Genealogies (Table 21, para. 444) shows that there are some 361 dia-paying groups recorded in the Protectorate. These groups, the male members of which pay or receive blood-money (dia) or other customary tribal payments together, are the social units of the Somaliland Protectorate. The laws of their custom usually take precedence over Moslem law—as local custom in most countries, when it conflicts with religion, tends to carry more weight. (In fact custom and religion do not usually conflict much as their origins are closely connected.) All males from birth till death have theoretically equal social rights. In some cases there are leaders of these dia-paying groups: rich merchants, leaders in battle, men wise in the organization of nomadic movements of stock, skilful public orators, and sometimes hereditary chiefs. But the true leaders do not always have direct contact with the Government Administration. The number of males in a dia-paying group varies from about 300 to 3,000. As females are believed to be approximately equal in number to males this means 600 to 6,000 persons, men, women and children, in each dia-paying group. The numbers of some groups are known fairly accurately, but much work remains to be done by administrative officers in this connection. Taking, however, an average of 900 males for each group, the total population based on the Somaliland Protectorate wells would be 649,800 persons. This agrees fairly well with the figure 640,000 (Table 18, para. 441) obtained by addition after enquiry about individual tribal groups. Any figure between 500,000 and 1,000,000 would be reasonable, but there are certainly more than half a million British-protected Somalis.

C. The Nomadic Stock-herder

453. True *nomadism* is the movement of interdependent man and his stock over a wide but limited pastoral area. There is equilibrium between the nomad and his environment which may be upset especially by any defacement of the plant covering of the soil (whether by destruction of trees, by ploughing, or by other means). When this equilibrium is upset the nomad must migrate or die, *migration* being a trend, drift, or sometimes drive to a new country. *Transhumance* is the regular seasonal alternation of pastures.

454. All these three types of movement occur in Somaliland, but the greater part of the people are nomadic stock-herders moving to grazing within certain limits according to the variable rainfall of different years, and other factors.

455. The factors limiting the area, and controlling the times of nomadic tribal movements, in order of importance, are as follows:—

(i) Grazing	Seasonally dependent on rainfall.
(ii) Water	Seasonally dependent on rainfall.
(iii) Salt grazing or licks	Regularly periodic.
(iv) Transport: availability of burden camels	Personal.
(v) Temperature	Seasonal (solar).
(vi) Inter-tribal friendships and feuds ...	Variable.
(vii) Natural barriers to migration	Usually permanent.
(viii) Stock diseases	Irregular.
(ix) Human diseases	Irregular.
(x) Administrative direction	Irregular.

In brief, famine and drought are considered more serious than pestilence or war, and the finding of water and good grazing is the first necessity of good administration.

456. (i) and (ii) *Grazing* depends largely upon the very sporadic *rainfall.* In drought years water is obtained for long periods from the permanent well areas, with a resultant overgrazing around the wells, whilst simultaneously the outlying grazing areas are dried up for lack of rain, and subject to increased wind erosion. Naturally a great deal of stock dies in such a drought year, and there is also therefore an increase in human mortality.

457. (iii) *Salt* is essential to stock. In the west it is obtained from the Jerer or Fafan valleys, or from the salt licks just north of the Main Watershed. In the east are great areas of salt grazing (Daran and the inferior Gulan) in addition to many salt wells, and the great camel-breeding tribes (Habr Yunis, Mohamed Abokr, and Dolbahanta) are based on the salt-grazing areas. Near the coast the salt-grazing Hadun and the brackish coast wells provide salt.

458. (iv) *Transport* is a controlling factor in that a village cannot move without burden camels, and though the camel herds can and do move without baggage, the women and children with the sheep and goats are entirely dependent on a minimum of burden camels to move with the flocks to new pastures or fetch water from the wells. This is a fact to be remembered in drought years, and when it is necessary to commandeer or confiscate stock. To take all the burden camels from the villages for any reason is a crime not excusable even on a plea of ignorance. The advent of the motor-lorry, which carries water to grazing areas, has introduced a new factor in transport.

459. (v) *Temperature* causes some annual migrations from the hot coastal plains (Heb) and lowlands (Guban) to the cooler mountains and Plateau (Ogo) each summer.

460. (vi) *Inter-tribal friendships and feuds* may seriously affect nomadic movements: e.g. in 1943 there were thousands of Ogaden camels watering peaceably not far from Hargeisa with friendly tribes of British Somalis. In 1948 (see para. 482, below) this would have been unthinkable. The retreat of the locally inferior tribe from good grazing after a tribal fight is frequent: but only if there is somewhere else to go with sufficiently good grazing within reach of water.

461. (vii) *Natural barriers.* These may be mental or physical. Unscalable cliffs, temporary or permanent waterless deserts, and distance are obvious barriers. Inertia of tribal custom, areas inhabited by hostile tribes, and limits imposed by administrative orders are less predictable in effect.

462. (viii) *Stock diseases* (e.g. prevalence of ticks or fly) may cause a tribe to vacate an area where stock mortality is high.

463. (ix) *Human diseases* are only a secondary consideration. Unless the stock is fed and watered the death of humans will result in any case.

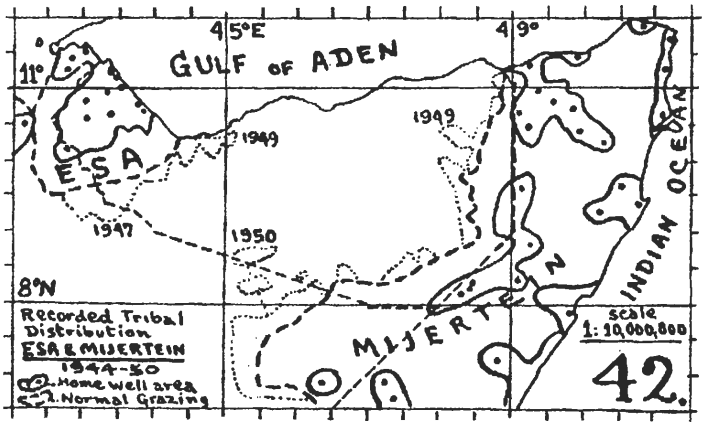
framed to fit these other factors. If they do not do so the penalty for obedience on the part of the tribesman may be death, and it is not to be wondered at that the Somali grazier sometimes appears to be unbiddable. Ideally administrative direction should always be framed so that it can be and will be obeyed. When the habit of obedience to the law has been formed as a result of wise administration, it is possible to enforce inconvenient laws in times of stress. It is presumed that this paragraph, with slight variations, might apply in any country for any administration.

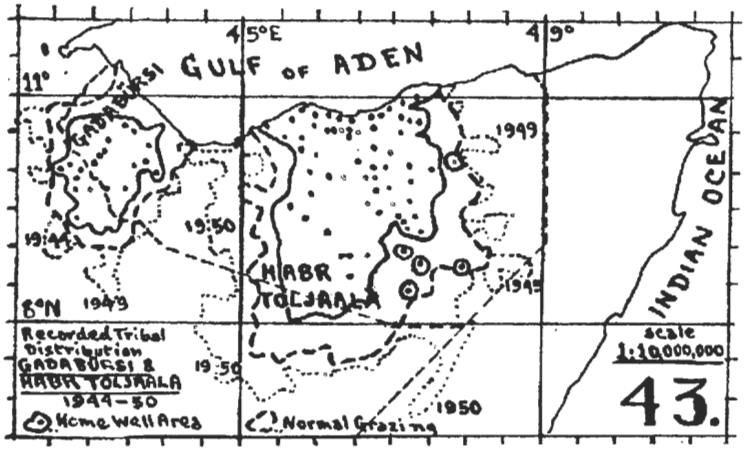
465. As a rule then, the people and their stock will be around their home well areas (illus. 41, in pocket) in January and February each year. When it rains further afield some will make forays to the new green grazing, coming back to the well area if no more widespread rain falls. When there are heavy widespread rains most of the people will move to new grazing areas. Scouts (Sehan) go out first to prospect, and lie scientifically to try to ensure that their own people get first to the best grazing. It is not then unusual for a whole village to move 100 miles in 60 hours. The knowledge required for judging when and where to move with stock, and when is the latest moment for a safe return to the home well areas, is an art calling for leadership. If later-expected rains fail, the women and children and the stock may become too weak for the homeward journey along the dried-up and overgrazed stock-routes, and weakening of both stock and people may result in death.

466. The nomadic movements of the people thus appear to be irregular from the point of view of solar dates, on the calendar, but they are in fact regular in accordance with the factors given in para. 455 above. A skilled stock-herder, given the data especially as regards rainfall, can foresee the approximate moves of people and stock in the tribal areas known to him. Unfortunately very few people have a knowledge of more than very limited areas of the Protectorate, and this lack of knowledge has therefore also been a limiting factor in the tracing and recording of actual movements by the General Survey.

467. The factors limiting the southward *migrational* tendency are: (i) political: the wells to the south being held by other tribes (Mijertein and Ogaden under Italian and Ethiopian rule respectively), and (ii) the fact that the hardy highlander of the Plateau areas, both of the Protectorate and of the Harar Plateau, seems to deteriorate in physique in the wetter lowlands to the south along the Webbi Shabeli, Juba, and Tana Rivers. There are more diseases of man and beast, and though the individual trader or raider may do well in the southern lowlands, the northern nomad and his herds seem to lose something of their hardiness and virility when they leave their healthy highland semi-desert. Migration from Arabia is believed to be still continuing, almost unnoticeably, especially along the coast from Karin to Onkhor, and the Makhir coast. The main pressure from within seems to come from the H.T. Musa Abokr and H.Y. Saad Yunis country, whence there always seem to be more fine young men than there is stock or grazing to support. Roughly speaking at present the Isaq tribes move within a circle of radius 155 miles centred on Burao, and the Ogaden and Mijertein *outside* a circle of 165 miles radius centred on Onkhor.

468–474. (*Illustrations* 42–48.)




45°E
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GULF OF ADEN
INDIAN OCEAN
GADABURSI
1949
1950
1944
HABR TOLJAALA
1945
8°N
1949
Recorded Tribal Distribution
GADABURSI & HABR TOLJAALA
1944-50
Home Well Area
1950
Normal Grazing
scale
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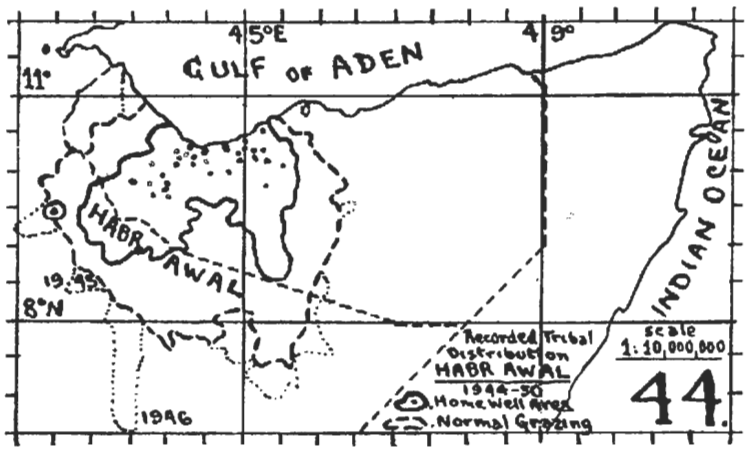
43.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INDIAN OCEAN
HABR AWAL
1949
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1946
Recorded Tribal Distribution
HABR AWAL
1944-50
Home Well Area
Normal Grazing
scale
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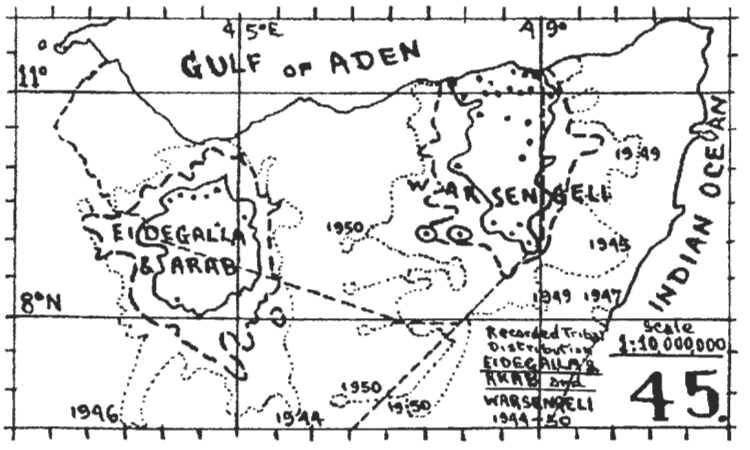
44.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GULF OF ADEN
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Recorded Tribal Distribution
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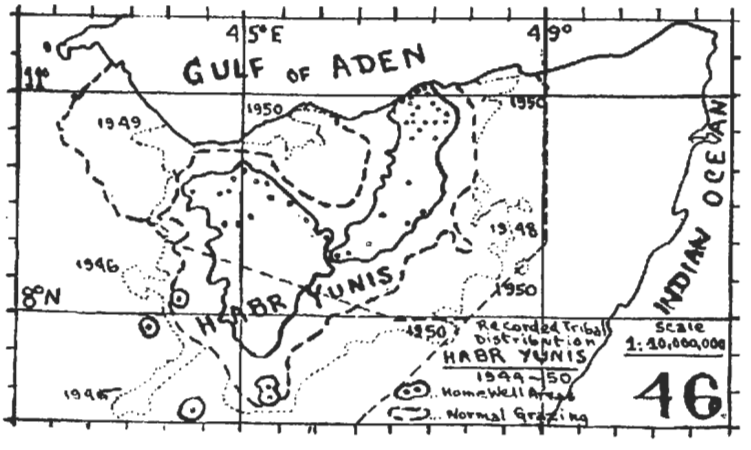
45°E
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GULF OF ADEN
INDIAN OCEAN
1950
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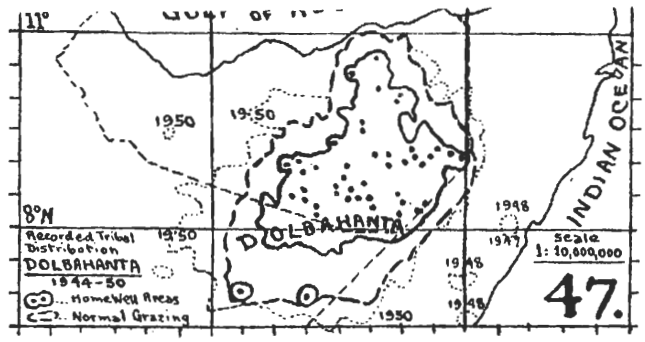
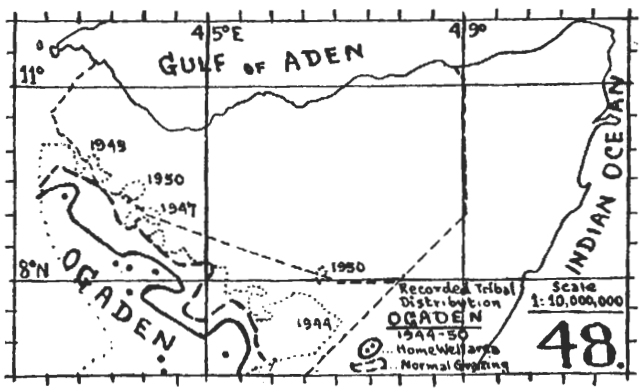
1948
1946
HABR YUNIS
1950
8°N
1950
1945
Recorded Tribal Distribution
HABR YUNIS
1944-50
Home Well Area
Normal Grazing
scale
1:10,000,000
46





D. Résumé of Tribal Movements 1944–50

475. The actual accounts of these nomadic movements of the stock-herders have been recorded annually in the Reports of the General Survey from 1944 to 1949, with annual maps showing the distribution of tribes. The following is a brief summary of these movements, as they have been recorded by the General Survey, in increasing detail as the efficiency of recording improved.

476. In **1944** most of the tribes were in their home well areas (illus. 41, pocket) by January or February. Southward migration to the Haud began again in March in the west, and in April and May in the east. There was some return to the home well areas in August, but most of the tribes were in the Haud again from October until December.

477. In **1945** the tribes lingered on late in the Haud as a result of the good rains in December 1944. In March the expected rains in the west and Watershed areas failed, and the tribes drew in towards the home wells. The main Gu rains were delayed until May, when major outward movement of tribes to grazing areas began, and in the west the rains were so good that the tribes which had watered on the Jerer and those which had watered at the home wells, had hardly met by June, there being ample grazing all over the western Haud, and no need to go far from the home wells. In the early part of the year, there were Jibril Abokr as far west as the Zeila Plain, Esa Musa south at Danot and Qodmis, Saad Yunis at Onkhor, and Warsengeli at Dangudban, Qodmo, and Meloden (in Daror).

478. In August there was a general return to home grazing areas. The latter part of the year had disappointing rains except around Sheikh, the Ain, and west and south-west of Haradigit. The Ain, which had been very crowded by Habr Toljaala and Dolbahanta because of the newly defined boundary of the Dolbahanta district through the Ain, was closed to grazing, and many of the Burao tribesmen therefore went south-west to Haradigit. Some of the Habr Yunis, with Eidegalla, Arab, and Habr Awal Saad Musa went on *beyond* Haradigit, when ordered to leave that area, and grazed in December as far afield as Turr (6° 27′ N. 43° 30′ E.) near the Webbi Shabelli. The attempted assassination of the District Commissioner at Burao disturbed tribal grazing movements as little as did the news of victories in Germany and Japan.

479. In **1946** the rains were excellent. The British-protected tribes returned from beyond the Fafan by the end of March, and apart from this the tribes as a whole stayed closer to the home well areas than usual. In fact so good was the grazing of the Protectorate as a whole that the neighbouring Mijertein and Ogaden tribes grazed further towards or into the Protectorate than in normal years.

480. In **1947** the rainfall was not very good, but there was still a reserve of grazing from the excellent rains of 1946. The tribes moved in their normal grazing areas until the end of the year, when they were affected by political unrest, possibly connected with the growing-pains of the various new nationalistic societies which were coming into existence. Riots were reported from Eil, Geroweh, and Mogadishu in Somalia during October. There were fights between Eidegalla and Ogaden near Awareh in November, and from November 26th to 28th there was serious fighting in Hargeisa township between the Habr Awal and Habr Gerhajis (i.e. Habr Yunis and Eidegalla). Unexpected good rains in a belt from Gudubi to Awareh, about 80 miles south of Hargeisa, probably helped to draw off the tribesmen from this battle on the 28th but the recorded distribution of these tribes in December showed a startlingly clear line separating these two groups, roughly north-west and south-east through Hargeisa, with many of the Arab tribes along the dividing line professing neutrality.

481. Dolbahanta and some Warsengeli went far south-east to the Nogal Estuary (Eil) also for political reasons, and there was fighting amongst the Hawiya at Obbia (Hobia) in December.

482. In **1948** rainfall was average as in 1945 and movements were normal. The Dolbahanta and Warsengeli returned from the Indian Ocean coast by the end of February, and in March there were widespread small rains which caused some unwise outward movements to grazing areas. Many of the Erigavo and Nogal tribes had concentrated in Haisamo and the southern Sawl in March, but there is plenty of permanent water in Haisamo. Burao tribes which moved into the Haud in March were marooned, as the big Gu rains did not start until late in April, and the splash in March had misled them. By the end of March the line between Habr Awal and Habr Gerhajis in the Hargeisa district had softened, but as the tribes moved out into the Haud there was fighting by Ogaden against Eidegalla and Arab. Eidegalla and Arab, however, stayed in the Haud until the pools dried up, when, at war with the Ogaden, they could not water in the south and had to retreat to their own home well areas.

483. Meanwhile administrative "looting" of stock of the Mijertein and Ogaden by the Mogadishu authorities had caused Mijertein of the Daror valley to move as far south as Adon, and the Ogaden Ibrahim from Warder to mingle with their Habr Yunis relatives north of Haro Hagar[illegible]

484. By December the Ogaden and Abasgul in the west were fighting against the Habr Awal as well as against Habr Yunis, Eidegalla, and Arab. There were the usual annual fights between the agriculturalists of the Habr Awal Jibil Abokr against Gadabürsi in the Qadau area at intervals. The Dolbahanta got tired of crowding the Ain to prove that there was no room for the Habr Toljaala there, and resumed their normal grazing movements. The Esa and Gadabürsi had poor rains and penetrated well into the Hargeisa district, as far as Wajaleh and Medr from June until October, and well into the Hargeisa coastal lowlands by the end of the year.

485. In **1949** rainfall was again average, though it differed from 1948 in having a poor second quarter when the best rains should have fallen, and a good last quarter, especially heavy rains falling in November and December. The Esa and Gadabürsi had penetrated east as far as Henweina (beneath Golis) by February, and stayed there till April. Some of the Gadabürsi went south to the Fafan in February, and the Esa to Jigjigga from June till September. The Eidegalla and Arab kept close to the home areas for most of the year, for fear of administrative looting of stock in connection with the Ogaden quarrel. Some went as far north as Bulhar and Laba Geri in the Berbera district. The Habr Awal and Ogaden were less constrained in their movements. Habr Yunis ranged far afield to Qabri Bahar in the west, and Do'mo and Kal Damijo in the east. Habr Toljaala ranged east to the Sawl Haud and south to Do'mo. Despite the average annual rainfall, the poor Gu (second quarter) thus caused variations from the normal tribal movements.

486. The general move from the lowlands (Guban) to the Plateau (Ogo) was in May, with a return to the lowlands in September. General movement from the Plateau south into the Haud occurred during the October rains. There was some returning from the Haud to the Plateau area, and from the Sawl Haud to the Nogal in November, but heavy rains in November [illegible] kept many of the tribes far south in the Haud up to the end of the year.

S.W. Monsoon being then at its height, the temperatures at their maximum, and the wind dry and dust laden.

488. In 1950 the rainfall was bad, both the second and the fourth quarters' rainfall failing in most areas. The late rains of November and December 1949 had provided enough grazing to prevent a major famine and drought, and there was a further useful splash of rain quite unexpectedly in January 1950, replenishing some of the Plateau wells.

489. In March, the Esa and Gadabürsi who had resisted anti-locust measures, moved from the coast to the hills. In April the Mijertein returned to the lower Nogal near the Protectorate boundary from the Indian Ocean coast. In May there was a general movement from the lowlands to the Plateau area, and from the Plateau to the Haud. Some Habr Toljaala and Saad Yunis went early in the year as far west as Bulhar and remained there all the year.

490. By June most of the tribes in the Haud had concentrated in the Haro Hagari (Danot) area, which was the only area where there had been good rains. Here Ogaden, Habr Awal, Eidegalla, Arab, Habr Yunis, Habr Toljaala, and Dolbahanta were collected with their stock. There were also many locusts amongst them.

491. In July there was the annual Mijertein-Hawiya clash. In August the camels came into the Plateau area for water and salt grazing, and some of these stayed on to graze the more or less deserted home well areas. The less mobile sheep and goats with the villages of women and children mostly stayed in the far Haud. In the west there were excellent third quarter rains in a small area of the south-west corner of the Hargeisa district, and the Habr Awal Saad Musa grazed there in force.

492. The worst drought was by now in the Erigavo district, and despite local good rainfalls, what new grass had come up was destroyed by locusts. Many of the Erigavo tribesmen moved south to the Las Anod area which had some good rain, but later in the year many of these visitors were destitute in Las Anod and the Ain.

493. The September rains in the west killed many of the drought-weakened camels, especially of the Eidegalla and Arab. The locusts, however, had nearly all flown to the south and south-east beyond the Protectorate.

494. In October the Esa returned from Ethiopian territory to their annual [illegible] and the Mijertein went back from the Nogal to the Indian Ocean and [illegible].

495. In November there were concentrations of tribes in the Danot and Las Anod Haud areas, and in the area west of Hargeisa. The drought and famine in the Erigavo [illegible] was serious. Some of the Ballehs (pools) in the Haud lasted till December when the last [illegible] dried up.

496. Rainfall in 1950 was definitely bad with the result that by [illegible] the year there was a quite serious widespread drought and in some areas famine. To merit the description of a major drought and famine, however, the 1951 rains would have had to have failed, and in the event early heavy widespread rains in March 1951 saved the situation. This heavy widespread rain, unusual in March, is expected to have killed off most of the weaker stock, and though this will cause hardship and individual destitution, it is the natural process of preventing overstocking of the country, and is known to occur at fairly regular intervals and to have a salutary effect, in that the healthy surviving stock breed rapidly, with ample grazing for the reduced stock-population. A record of known droughts is given in Table 9 (para. 143).

E. Tribal Movements in General

497. It is not possible to foretell in detail the exact areas where tribes and sections will graze in any specified month or year in advance. The home well map (illus. 41, pocket), and the note to Table 22 (para. 509), show the "loci" about which the tribes move according to the variable factors described in para. 455. It would take many months of work to analyse and codify the records of tribal movements which have been plotted during the General Survey (in detail as to tribal sub-sections for each month from 1944 to 1948 and as to tribes for each month for 1949 and 1950). Owing to the variability of the seasonal and other factors such a detailed account would be of only limited value.

498. It is therefore considered sufficient to describe the general trends of seasonal movement of the larger tribal sections, and to give a brief summary of the less usual nomadic movements which have taken place during the seven years of the General Survey.

499. By and large the *longer-distance movements* of the villages with sheep, goats, women, children, and houses occur only when there is a considerable period of rainfall expected to follow a widespread beginning of rain. This usually starts in April or May continuing till June, and in the areas over 4,000 feet in altitude (Harar Plateau and Main Watershed) sometimes in March. The tribes may continue to stay in the outer grazing areas through the third quarter of the year until the shorter rains of October and November fall.

500. As the rain pools dry up in the " waterless " Haud and Sawl Haud, the camels and men tend to come in closer to the tribal locus wells for water and salt grazing, and sometimes stay nearer the wells, if there is sufficient grazing, until the next rains fall in the grazing areas. The families and flocks do not travel so quickly, and if the grazing in the Haud is sufficient they will stay on there until forced by lack of feed and water to draw in closer. In a good year they may manage to stay in the further grazing areas right through from April or May till November or December, but are nearly always forced to come back by January (in some years as early as July or August, and often in November and December). But occasionally they can stay away, aided by modern motor vehicles to water people and pregnant ewes and goats, right through the dry season till the Gu rains of the next year fall. Again in other years the grazing is so good in the nearer areas that the tribes do not move out into the further Haud at all: this is a pity because it is in such good years that regeneration of the nearer grazing should be allowed to take place. In fact the use of the further grazing areas in those years in which there is widespread good rainfall would probably be sufficient to check the devastation of some of the areas nearer to the home wells.

501. The other type of *movement, over shorter distances,* is more regular, and depends not only on rainfall but on temperature and other factors. This in general is the southward movement of the home well area tribes whenever there are local rains (and these occur fairly regularly, even though sporadically Hogleh-Hogleh—in April or May, and in October and November), and the movement upon of the coastal lowland tribes to avoid the heat and dusty desiccating winds of the May to S[illegible] period of S.W. Monsoon.

502. This latter [illegible]nt causes almost continuous grazing around the home wells of the Platea[illegible] movement cannot be prevented, it could be encouraged—but to greater [illegible], by coaxing the lowland tribes to go even further south, beyond the well areas.

503. Other movements due to disease of man or beast or to political reasons are unpredictable, though the effects of such [illegible] movements on the crossing of physical barriers, or overcoming the inertia of tribal c[illegible] always liable to have permanent effects.

504. Movement of st[illegible] salt grazing or salt licks is fairly regular, but only affects larger scale tribal movements [illegible] that it may be a contributory factor in hastening movements that might otherwise have been delayed a little longer.

505. For the purposes of this general account of regular tribal movements therefore, the two main types of movement are:—

(i) Major movements to areas of widespread heavy rains.

(ii) Minor movements to areas of lesser rains, or on account of temperature and other normally less important factors.

506. As far as possible these are described in the following section (F. Normal Grazing Areas, para. 510) using only the place names given on Illustration 8 (para. 77). Records in more detail have been kept, but the importance of place-names in the grazing areas varies from year to year except for a few of the larger well-known rainpool areas. Temporary centres may spring up one year in one place, and then cease to be important centres for many years (e.g. Qodmis-Kurmis was an important centre earlier in the century. Recently people have spoken more of Marqanweina about 25 miles south-east of Qodmis.)

507. Although therefore the Illustration No. 8, Somaliland Place-names, gives only a few names, it is considered that these are sufficient to give a general idea of the areas grazed by the various tribal sections, though for lack of detail the areas defined have had to be only

Areas," it should be easy to make a good guess at the areas where tribal sections are likely to graze in times of widespread drought or sporadic local rainfall, and how far in one of several directions they are likely to go when there are widespread rains. It is of course necessary to have constant meteorological information, and information as to the other nine factors affecting tribal movements (para. 455) is also advisable. Apart from a few Government posts with radio-telephone lately installed, and occasional travellers, the only obvious means of obtaining the necessary information for forecasting grazing movements is to converse with the actual graziers in their own language, after having acquired a knowledge of the geography of the country and of the tribes and their sections. This can be done not only by experienced European officers but by a few Somalis who have a wide knowledge of the country and experience in obtaining accurate information.

509. (*Table* 22.)

TABLE 22

SUMMARY OF TRIBES OF SOMALILAND PROTECTORATE WITH NOTES ON WELLS AND GRAZING

ESA.

	Group	*No. of D.P. Groups*	*Some noted sections*
ES.	1. Walaldun	8	
	2. Forlabbe	6	
	3. Mamasan	19	Ba Forlabbe. Ba Harla. Ba Gurgura.
	4. Saad Musa	14	Yaruni ; the rest are " Black Esa " to the west and south
	5. Yunis Musa	23	Maalin (12); Galan, Ali Guran, Gedi (5); Kul (5).
	(Urweina)	8	All " Black Esa " to west.
	(Wardikh)	—	All " Black Esa " to west.
	Horone.		

Five groups, excluding " Black Esa," of 1,000 to 20,000 each.

Total about 55,000 persons, including women.

Esa are all Zeila/Borama District, except those living in Ethiopia or French Somaliland (mostly " Black Esa ").

HOME WELLS of Esa (British Protected) used by them in a normal dry season :

1.	WALALDUN	A few at Fadwein. Most at Hensa, Fula and beyond.
2.	FORLABBE	Adagalla, Gagule, Obane, Oda Ali, beyond Jibuti, Dehh Gudban. Few at Hangagare.
3.	MAMASAN	Silil (Afas is now salty), Lug-haya.
	(*a*) Ba Forlabbe	Bul, Hared, Kalada'.
	(*b*) Ba Harla	Bul Ado, Hangagare.
	(*c*) Ba Gurgura	Geriso.
4.	SAAD MUSA	
	(*a*) (Yaruni only)	Fadwein, Warabod.
	(*b*) Black Esa (not British Protected)	Beyond Adagalla.
5.	YUNIS MUSA	
	(*a*) Rer Maalin	Oda Ali, Adagalla and beyond.
	(*b*) Rer Galan	Saba As, Hangagare.
	(*c*) Rer Gedi...	Gokti.
	(*d*) Rer Kul	Jideh, Geriso, Silil, Lug-haya.
6.	URWEINA ... ... (not British Protected)	Ugul above Jibuti.
7.	WARDIKH ... ... (not British Protected)	Mile above Adagalla towards Harawa.
8.	HORONE	Jibuti to Zeila.

TABLE 22—*continued*

GADABÜRSI (= Samarone)

		Group	*No. of D.P. Groups*	*Some noted sections*
G.	1.	(Habr Affan)... ... ... (Suber Samarone)	12	Rer Hamud, Degaweina, Hassan Saad, Musa Fin, Farole. Also Hebjireh, Jibrain and Ali Ganun.
	2.	(Makahil Dera) (Afgudud) (Adan Yunis)	6	
	3.	Jibril Yunis	7	Rer Dudub (Osman), rer Ahmed (Yunis), and other sons of Yunis Osman.
	4.	Nur Yunis	11	Rer Mohd Nur, rer Farah Nur, Gedi, Helas, rer Galal, Nebidore. Also Elli Hassan and Abdalla Makahil (=ba Habr Abdalla).
	5.	Mahad Asseh	5	Ba Habr Musa, Abren, ba Habr Adan, ba Habr Elli.

Five groups of 5,000 to 20,000 each.
Total about 45,000 persons including women.
Gadabürsi are all Borama/Zeila District except some living permanently in Ethiopia and a few in French Somaliland.

HOME WELLS of Gadabürsi, used by them in a normal dry season :

1.	HABR AFFAN	Nadi, Dibrawein (E), Dara-'As, Durdur Ad, Abasa, Damuk.
2.	MAKAHIL DERA	Shabelle, Rucheisa.
	(*b*) Afgudud	With Ahmed Yunis.
	(*c*) Adan Yunis	Au Barreh.
3.	JIBRIL YUNIS	
	(*a*) Rer Dudub (Osman)	Rucheisa, Walaldun, Au Bube, Biyo Ado.
	(*b*) Rer Ahmed (Yunis)	Halemale, Afdoh, Nadi, Satawa, Daba-Dilla, Rafaq, Damuk.
	(*c*) Other Elmi Yunis Osman ...	Bulgih, Jenagaban.
	(Farah Yunis, Ali Yunis) ...	Beyond Harawa.
4.	NUR YUNIS	Au Barreh, Adad (in Jarahorato).
	(*b*) Elli Hassan	Shabelle (south of boundary).
	(*c*) Abdalla Makahil	Rucheisa, Arabi.
5.	MAHAD ASSEH	
	(*a*) Ba Habr Musa and Abren ...	Bukgigo, Qabri-Bahar, Ailo, Hog.
	(*b*) Ba Habr Elli	With Ahmed Yunis.

HABR AWAL (=Awal Sh. Isaq)

		Group	*No. of D.P. Groups*	*Some noted sections*
H.A.	1.	Saad Musa unspecified ...	9	Abdalla Saad (1). Ogad Abokr (1). Logeh (2). Ba Gobo (3).
	2.	Abdalla Seed	8	Abaneh Abdalla (1). Ahmed Abdalla (2). Samater Abdalla (5).
	3.	Ahmed Nuh	7	Rer Ahmed.
	4.	Yunis Nuh	7	Shirdon, Hosh, Gedid.
	5.	Jibril Abokr	12	Ali Jibril (6). Dalal. Barreh Ismail. Hared. Samater Ismail. Deriahan. Elma Omr Ali. Ba Habr Adan (1). Hassan Jibril. Adan Jibril. Omr Jibril. Also " Deriahan." Yunis Jibril (5) Aliyoh.
	6.	(Makahil) ... ... (Abaneh Ahmed (Yesif))	6	Musa Yesif = rer Liban.

	Group	No. of D.P. Groups	Some noted sections
7.	Adan Esa	8	Mahamud Jibril (1). (Rer Mahamud). Danwadageh (3). (Hassan Jibril, Fiqi, Guroh). Jibril Abdalla (4). (Idleh, Farah, Adawa).
8.	Mohd Esa	7	Omr Jibril (1). Abokr Jibril (3). (Baleh, Waais, Abaneh, Sahal, Had.) Also Yunis Jibril = Fedan. Musa Jibril (3). Adarahman Musa. Dogorreh (Ahmed Hassan). Deriahan Hassan. Abdalla Abdulleh.

Eight groups of 12,000 to 24,000.
Total about 130,000 persons, male and female.
Adan Esa and Mohd. Esa are Berbera district : the remainder Hargeisa district.

HOME WELLS of Habr Awal, used by them in a normal dry season :

1.	SAAD MUSA unspecified	
	(*a*) Abdalla Saad	Haraf to Horohedleh.
	(*b*) Ogad Abokr	Arabsiyo.
	(*c*) Rer Logeh	Elmis, Gara-Ato.
	(*d*) Ba Gobo	Arabsiyo.
2.	ABDALLA SE'ED	
	(*a*) Abaneh Abdalla	Dabolaq to Arabsiyo.
	(*b*) Ahmed Abdalla	
	(*c*) Samater Abdalla	Haraf to Hargeisa.
3.	AHMED NUH	Selei, Duwi, Gorfo (above Biji) Arabsiyo.
4.	YUNIS NUH	Arabsiyo.
5.	JIBRIL ABOKR	Gebile, Arabsiyo, Qabri-Bahar, Biji, Biyo Dader, El-Hadi, El Birdale.
6.	MAKAHIL	
	(*a*) Abokr Makahil	Gebile, Arabsiyo.
	(*b*) Hassan Makahil	Bulhar, Qoda'a, Duwi.
	(*c*) Abaneh Ahmed (Yesif) ...	Haraf to Hargeisa.
	(*d*) Musa Yesif	
7.	ADAN ESA	Laba-Gherri, Duwi, Da'ar-buduq, Henweina, Lafarug, Hamas, Daragodleh.
8.	MOHAMED ESA	Nasiye, El-Girdi, Ferrio, Gedeis, Sheikh, Ala'ule, Loya, Wadan, Garbadir to Daban and Haile.

ARAB (=Arab Sh. Isaq)

		Group	No. of D.P. Groups	Some noted sections
A.	1.	Abdalla Abokr	3	Samaneh (2) ; Guleni (1). Also Idman Arab.
	2.	Hashim Abokr	4	Saleban (1) ; rer Ali (1) ; rer Adan (1) ; Ahmed Abdalla (1).
	3.	Musa Abokr	3	Afyera (1) ; Gelqonof and Mahad Fanah (1). Also Suber Elli (1).

Three groups of 5,000 to 12,000 each, including women.
Total about 30,000 persons.
Rer Ali are Burao district and Abdalla Arab are Berbera district. The rest belong to Hargeisa district.

HOME WELLS of Arab, used by them in a normal dry season :

1.	ABDALLA ABOKR (and Idman Arab)	Dabolaq to Hargeisa.
2.	HASHIM ABOKR	
	(*a*) Saleban	Dabolaq to Hargeisa.
	(*b*) Rer Ali	Berato, Odweina, El-Huma, Burao.
	(*c*) Rer Adan	Hargeisa to Adadleh, Guled Haji, Odweina.
	(*d*) Ahmed Abdalla	

TABLE 22—*continued*

EIDEGALLA (=Daud Gerhajis Sh. Isaq)

	Group	*No. of D.P. Groups*	*Some noted sections*
Ei. 1.	Eidegalla (unspecified) ...	10	Esa Daud (1). Mohd. Daud=Guyobi (2). Abokr Musa (2). Yunis (2). Ba Delo (1).
2.	Hussein Abokr	9	Gashanbur (2). Robleh Matan (1). Hamud Matan (1). Gubdon Damal, Bilal Daud ... (1). Damal Yeryer (1). Liban Esa ... Hassan Esa ... Guled Esa ... (1). Abdi Barreh = Abdi Esa (3).

Two groups of about 20,000 each. Total about 40,000 persons, including women.
All Hargeisa district.

HOME WELLS of Eidegalla, used by them in a normal dry season .

1. EIDEGALLA (unspecified)	
(*a*) Esa Daud	Hargeisa to Au-Bakhadleh.
(*b*) Guyobi	Hargeisa, Debis, Au-Bakhadleh, Adadleh, Odeina, Guled Haji.
(*c*) Abokr Musa	Hargeisa.
(*d*) Yunis	Dubato, Debis, Au-Bakhadleh.
(*e*) Ba Delo	
2. HUSSEIN ABOKR	
(*a*) Gashanbur, Robleh Matan ... Hamud Matan	Hargeisa, Au-Bakhadleh, Dubato.
(*b*) Gubdon Damal, Bilal Daud, Liban Esa, Hassan Esa ... Guled Esa	Hargeisa.
(*c*) Damal Yeryer	Hargeisa, few in Awareh.
(*d*) Abdi Barreh	Hargeisa, Au-Bakhadleh, Sik, Adadleh, Dubato, Guled Haji, Odweina, few in Awareh.

HABR YUNIS (=Seed Gerhajis Sh. Isaq)

	Group	*No. of D.P. Groups*	*Some noted sections*
H.Y. 1.	Elli Seed	6	And Ainanshe, ba Elli.
2.	Isahaq Arreh	10	Kalil Isahaq (1). Kasin Isahaq (4). Abdalla Isahaq (5).
3.	Musa Arreh	6	
4.	Musa Ismail Arreh	11	Jibril Turwa (1). Musa Turwa (1). Hamud Isman (2). Saad Yunis (2). 'Aul Isman (5).
	(*Abdalla Ismail Arreh*)		
5.	Habr Yunis (unspecified) ...	14	Musa Abdalla (2). Ogad Omr (4). Baha-Ismail (1). Hussein (1). Gumbur (1). Momin (1). Ba Dolb (3). Elmi Adan (1).
6.	Hersi Barreh	7	Hildid Hersi (1). Fahia Hersi (1). Weid (1). Waraba (1). Abdi Hersi (3).
7.	Ainashe	12	Baha Ainashe (5). Ba Mun (3). Ba Jibrahil ... Ba Adan Madoba (1). Ba Awal (1). Baha Derieh ... Samater Ainashe (1). Ba-Makahil (1).

Seven groups of 10,000 to 20,000. Total about 130,000 persons including women.
Isahaq Arreh are Hargeisa district. Part of the Jibril Adan of Musa Arreh and all the Musa Ismail apt the rer Aul Isman are Erigavo district. The Musa Abdalla are Berbera district. The rest of

HOME WELLS of Habr Yunis, used by them in a normal dry season

1.	ELLI SEED ... ... (and Rer Ainashe ba Elli)	Berato, Odweina, El-Huma.
2.	ISAHAQ ARREH	Hargeisa to Adadleh.
3.	MUSA ARREH	Berato, Odweina, El-Huma, Burao, Qoriale, Ainabo, Wadamago. Few Walwal and Warder, some Mait to Ruge.
4.	MUSA ISMAIL	
	(*a*) Jibril Turwa	Mait to Humbais, Ruge, 'Arar, Hedid.
	(*b*) Musa Turwa	Afaf, Da Agag, Dabgadot to Arar.
	(*c*) Abdi Hamud	Medishe, Hamas, Yoob to Humbais to Hashau.
	(*d*) Abdalla Hamud...	Heman Garen, Erigavo, Shid, Holhol, Yufleh, Afaf.
	(*e*) Yunis Musa, Mohd. Musa ...	Dablehe, Birhamr, Jidale to Waqderia.
	(*f*) Saad Yunis	Dogobleh, Bohol, El-Lahelei, El-Afwein, Garadag, some Ainabo, Eldab, Badwein.
	(*g*) Aul Isman	Ainabo, Wadamago, Qoriale, Ber, Burao.
5.	HABR YUNIS (unspecified)	
	(*a*) Musa Abdalla	El Huma, Odweina, Burao, Wadan, Shamahale, Ala Ule, Dubur, Marso, Saban Sabdo, Henweina.
	(*b*) Ogad Omr, Gumbur, and Ba Dolbahanta	Debis, Adadleh, Odweina, Guled Haji, Berato.
	(*c*) Baha Ismail	Odweina, Hahe, Berato.
	(*d*) Rer Husein	Wadan, Burao.
	(*e*) Rer Momin	El Huma, Burao.
	(*f*) Elmi Adan	Odweina, Berato.
6.	HERSI BARREH	
	(*a*) Hildid Hersi, Fahiya Hersi ...	Berato, El Huma, Burao.
	(*b*) Rer Weid, Rer Waraba, Rer Abdi Hersi	El Huma, Burao.
7.	RER AINASHE	
	(*a*) Baha Ainashe and Ba Mun ...	Berato, El Huma, Burao, few Walwal, Gorahai.
	(*b*) Ba Jibrahil and Ba Adan Madoba	Berato, Odweina, El Huma, few Awareh, Gorahai.
	(*c*) Ba Awal	Berato, Odweina, few Gorahai.
	(*d*) Baha Derieh and Samater Ainashe	Berato, Odweina, Bulale, Gorahai, few Awareh.
	(*e*) Ba Makahil	Berato, Odweina, Walwal, Gorahai, few Awareh.

HABR TOLJAALA (Ibrahim, Mohd. and Musa Sh. Isaq).

		Group	*No. of D.P. Groups*	*Some noted sections*
H.T.	1.	Ibran ... ... =Mohd. Sh. Isaq	4	
	2.	Omr Jibril, Adarahman Musa	8	=Omr (3). =Yunis (5).
	3.	Habr Toljaala (unspecified)	8	Samaneh (1). Yesif (2). Adan Madobeh (1). Solemadu (4). (Abokr Abdilleh, Hassan Abdilleh, Barreh Abdilleh, etc.)
	4.	Ahmed Farah	8	Including Beleh Farah and Fahiya Farah.
	5.	Dahir Farah	11	
	6.	Uduruhmin and Barreh-Adarahman	9	Ali Barreh (1). Mohd. Barreh (1). Ba Sambur (1). Idleh Beeda (1). Boho (1). Ahmed Farah Beeda (1). Ali Farah (1). Idleh Farah (1).

Six groups of 15,000 to 20,000. Total about 100,000 persons, including women.

The Uduruhmin and Barreh Adarahman are Erigavo district. The rest of the Habr Toljaala belong to Burao district, the Omr and Yunis having changed from Erigavo to Burao in 1944.

The Toljaala (Ahmed Sh. Isahaq) is a separate small tribe living in Hargeisa district with Habr Awal.

The Sambur (Ibrahim Sh. Isahaq) live partly in Erigavo and partly in Burao district.

Groups 2 to 6 above are the descendants of Musa Sh. Isahaq.

TABLE 22—*continued*

HOME WELLS of Habr Toljaala, used by them in a normal dry season :

1. IBRAN	Ainabo, Qaborale (Duberin), El Dere, Ber, El Dab.
2. OMR JIBRIL AND ADARAHMAN MUSA (Omr and Yunis)	Ok, Duberin, Elambidole, Las Musa, Ambal, Tar, Gamba Ho, Emr, Gal, Hur, Dorer, Gal Dubleh, Jilbanis, Eoe, Las Idleh, Yeis, Bailamale, Badwein, Danano, Adad, Elal, Sobaqub, Hanig.
3. HABR TOLJAALA (unspecified)	
(*a*) Samaneh...	Ainabo, El Dab, Aga Id, Badwein, Ber.
(*b*) Yesif	Karin, Siyara, Ambal, Tar, Ber, Ainabo, El Dab, Badwein.
(*c*) Adan Madoba	Ainabo, El Dab, Badwein, Aga Id, Wadamago, few Las Anod.
(*d*) Solemadu	Wadamago, Ainabo, El Dab, Badwein, Aga Id, Horufadi.
4. AHMED FARAH	
(*a*) Rer Abtidon and rer Hildid ...	Ainabo, Qoriale, El Dab.
(*b*) Rer Benin and Abokr Ahmed...	Burao, Ber, El Dere, Qoriale, Dankhare.
(*c*) Mohd. Ahmed	Las Idleh, Hagal, Biyo Dader, Bihen Gaha, Gal Hedigale, Huguf, Dankhare (Dongoreh), Karin, Siyara, Ambal, Tar.
5. DAHIR FARAH	Burao, Qoriale, Wadamago, Ainabo to Badwein.
(*b*) Hassan Dahir and part Abokr Omr	With Mohd. Ahmed.
6. UDURUHMIN	Heis to Bokh and Ruge.
BARREH ADARAHMAN	
(*a*) Ali Barreh	(With Dolbahanta) Hudun, Bohol (Karaman), Jidbaleh, Tursubukh, Dohun.
(*b*) Basambur and Idleh Beeda ...	Kalsheikh, Shalau to Heis, Erigavo, Afaf, Ilud, Sufdero, Yanqare, Dudub-Qoriad.
(*c*) Boho	Bohol (Karaman), Danan, Ilad, Kal-Darableh, Dabano, Lahelei, Sigader, Garadag.
(*d*) Ahmed Farah Beeda and Mohd. Barreh	Las-Musa to Raguda, Yeis, Dur-Elan, Las-Adei, Qaab, Rijimo, El Afwein.
(*e*) Ali Farah and Idleh Barreh ...	Rijimo, San, Bailamale, Sobaqub, Bohol (Karaman), Dogobleh, Hudun, Bihen, Garadag, El Afwein.

DOLBAHANTA (=Seed Harti)

	Group	*No. of D.P. Groups*	*Some noted sections*
D. 1.	Dolbahanta (unspecified) ...	10	Hayag (1). Yahia (1). Khalid (2). Ughaz (4). Khayat (2).
2.	Farah Gerad	5	Barkat (4). Ba Ararsama (1).
3.	Ahmed Gerad	13	Aligheri (2). Waais Adan (2). Hagr Adan (6). Samakab Ahmed (1). Araleh Mahad (1).
	(Mahamud Gerad)		Naleya Ahmed Gerad = (Egal Naleya) (1).
4.	Jama Siad (8) Omr Waais (1)	9	
5.	Ogadyahan Siad	10	Waais Abdilleh (1). Nur Ahmed (2). Mahamud Ogadyahan (1). Naleya Ahmed Abdilleh (plus Hinjinleh) (6).

Five groups of 10,000 to 26,000. Total about 100,000 persons, including women.

All the Dolbahanta have been Las Anod district since 1944, except for the Naleya Ahmed of the Ogadyahan Siad, of whom only the rer Elmi and part of the rer Jibril are now Las Anod, the rest remaining in Erigavo district.

TABLE 22—*continued*

HOME WELLS of Dolbahanta, used by them in a normal dry season :

1. DOLBAHANTA (unspecified)
   - (*a*) Hayag ... ... — El Dab, Ainabo, Wüdwüd.
   - (*b*) Yahia ... ... — El Dab, Ainabo, Horufadi, Gorilugud.
   - (*c*) Khalid ... ... — Kirit, Wadamago.
   - (*d*) Ughaz ... ... — Las Dureh, Bihen.
   - (*e*) Khayat ... ... — Yahelwein to Bokh Shanleh, few at Galadi.
2. FARAH GERAD
   - (*a*) Barkhat ... ... — Higloleh, Aga Id.
   - (*b*) Ba Ararsama ... ... — Yahelwein to Bokh Shanleh and Beretableh, Hilma Ado.
3. AHMED GERAD (and Mahamud Ughaz)
   - (*a*) Aligherri ... ... — El Dab, Ainabo, Horufadi, Lasada, Wüdwüd.
   - (*b*) Waais Adan ... ... — Gabo, Ainabo.
   - (*c*) Hagr Adan ... ... — Horufadi, Wadamago, Ainabo, Wüdwüd, Qararo.
   - (*d*) Araleh Mahad ... ... — Horufadi, Ainabo.
4. JAMA SIAD ... ... — Tursubukh, Dohun, Adi Adeye, Dirigobo, El Dab, Ainabo.
   - (*b*) Rer Ahmed Jama ... ... — Buradleh, Dindaya.
   - (*c*) Rer Samakab Jama ... ... — Hudun, Gorofleh, Holhol.
   - (*d*) Rer Ali Mahamud ... ... — Bohol-Waraba, Baraha.
   - OMR WAAIS ... ... — Las Warwar to Halin.
5. OGADYAHEN SIAD
   - (*a*) Waais Abdilleh ... ... — Holhol, Gaolo, Taleh.
   - (*b*) Nur Ahmed ... ... — Gori Kuhar to Las Warwar.
   - (*c*) Mahamud Ogadyahan ... ... — Hudun to Taleh.
   - (*d*) Naleya Ahmed
     - (i) Rer Adan ... ... — Hudun, Karaman.
     - (ii) Ba Abdalla and part rer Jibril ... ... — Yufleh, Shidalehe.
     - (iii) Ba Ina Araleh, ba Ina Samater, part rer Adan, part Bih Idrais and Hinjinleh ... ... — Ilad, Danan.
     - (iv) Beh Ina Farah, Ba Rikheye — Medishe, Jidali, Heman-Garen.
     - (v) Rer Elmi, part rer Jibril ... — Asura, Jidbali, Tursubukh.
     - (vi) Part Bih Idrais (and Hinjinleh) ... ... — Hudun, Karaman, Gaolo.

WARSENGELI (= Mohd. Murasante = Mohd. Mahamud Harti)

	Group	*No. of D.P. Groups*	*Some noted sections*
W. 1.	Warsengeli (unspecified) ...	7	Warlabbe (1). Adan Seed (1). Rer Haji (1). Ughaslabbe (1). Rer Salah (1). Nuh Omr (1). Plus Hinjiyeh Murasante, Mahumed Omr (1).
2.	Dubeis	1	Yusuf Harun. Ogadyahan Harun.
3.	Rer Gerad group	2	Adan Yakub. Ba Ughaslabbe. Bih Idur. Ba Mijertein. Rer Fatah (1). (Lohhjirreh). (Gurgurreh).

Three groups of 5,000 to 10,000. Total about 20,000, including women.
All of Erigavo district. Mahumed (Omr) live with Ahmed Farah Beeda of H.T. Musa Abokr.

TABLE 22—*continued*

HOME WELLS of Warsengeli, used by them in a normal dry season :

1. WARSENGELI (unspecified)	
(*a*) Warlabbe, Adan Seed, Rer Haji, Rer Salah	Hauratiroh to Inda Ad. Some Adan Seed at Las Khoreh, some rer Haji and rer Salah in Ma'ag and Buran.
(*b*) Nuh Omr, Hinjiyeh	Mido Yeryero to Waqderia, Gelweten, Haded (Guban) Birbamr. Few at Jidali.
(*c*) Mahamud Omr	With H.T. Ahmed Farah Beeda (A.F.B.).
2. DUBEIS	Elayu to Gau (Bendr Ziada), Hauratiroh to Karin (Bosaso), Ausaneh, Buran, Halin, Las-Warwar, Ga'al Guleh, Dahan (Hedidera).
3. RER GERAD group and UGHASLABBE	
(*a*) Adan Yakub	Karaman, Hudun, Gorikuhar.
(*b*) Ba Ughaslabbe, Bih Idur and some rer Salah	Ilad, Danan, Taleh, Haradleh.
(*c*) Ba Mijertein (rer Garad) and Ughaslabbe	Las Khoreh, Sabe, Mawn, Mash-Aled, El Ad to Bihen (Badan).

NOTE.—From the above lists of home wells, and from the Illustration 41 HOME WELLS, it will be seen that the greatest concentration of tribesmen is at the wells bordering the waterless areas : e.g. the line of wells from Hargeisa through Odweina to Burao and the Ain.

In well-watered areas such as the Guban and Nogal, the subtribes tend to be more scattered in their home wells.

F. Normal Grazing Areas (see Table 22, para. 509, and Illustrations 42–48, paras. 468–474)

510. As can be seen from the route map (illus. 2, para. 52) comparatively little is known by the writer of the western corner of the Protectorate (Esa, Gadabürsi and Habr Awal Saad Musa). It is necessary to travel on foot to learn much of the tribesmen amongst whom one walks. Cox (1894) has described the grazing areas of the Esa and Gadabürsi in detail. Abnormal movements have been recorded in annual reports and summarized in Section D, para. 475 above. It is stressed that the size of the area grazed by a given tribe does not denote the size of the tribe or density of population.

511. ESA graze partly in French Somaliland and Ethiopia, some sections (mostly " Black Esa ") not entering the Protectorate at all. In 1949 Esa grazed as far east as Henweina between Assa and Golis.

E.S. 1. *Walaldun*. Zeila Plain and French Somaliland.
E.S. 2. *Forlabbe*. Zeila Plain as far east as Lughaya, and up through the Hogh valley to Bur Madu and Libahele.
E.S. 3. *Mamasan* graze in the same area as Forlabbe, but slightly further west to Sawer, and fewer in Bur Madu. In 1947 and 1948 some of the ba Gurgura went as far south as Medr. South-west of Libahele they graze into the lower Harawa valley.
E.S. 4. *Saad Musa* (Yaruni) graze on the Zeila Plain and west of Sawer into Ethiopia and French Somaliland.
E.S. 5. *Yunis Musa* graze on the Zeila Plain to Lughaya, and through Libaheli to Harawa, tending to keep west of the Bur Madu.
E.S. 6. *Urweina* are mostly in French Somaliland, but do graze sometimes on the Zeila Plain.
E.S. 7. *Wardikh* graze in French Somaliland and Ethiopia.
E.S. 8. *Horone* graze on Zeila Plain and west to French Somaliland and Ethiopia.

512. GADABÜRSI graze from the Zeila coast to the Jerer valley in Ethiopia, partly to the south-west and south-east of the Esa area, through Hogh, Bur Madu, to Jigjigga, Qadau and Medr. In 1949 they went as far south as the Fafan River and east to Bulhar.

G. 1. *Habr Affan* (*Suber Samarone*) graze from Hogh to Qadau, Bur Madu, Libaheli, and Harawa to Jigjigga. The Hebjirreh graze also on the Zeila Plain, and the Jibrain section in Medr.
G. 2. *Makahil Dera*, *Afgudud* and *Adan Yunis* graze from Bur Madu to Harawa.
G. 3. *Jibril Yunis* graze from Bur Madu to Harawa, but also more in Libaheli and on the Zeila Plain.
G. 4. *Nur Yunis* graze in Harawa, the western parts of Qadau and Medr, and sometimes in the Zeila Plain.
G. 5. *Mahad Asseh* graze from Hogh (especially ba Habr Musa) to Libaheli, sometimes to Medr, the Abren to Zeila Plain and ba Habr Elli to Libaheli.

Abdalla Saad graze from Hogh to Wahen, Damal and Medr.
Ogad Abokr in Qadau and Medr.
Logeh and *ba Gobo* from Hogh to Wahen to Damal.

H.A. 2. *Abdalla Seed* graze mostly in Qadau and Medr ranging to Jigjigga, the Jerer, Awareh, Garodi, Dutka and down to Bulhar. In 1946 they reached the Webbi Shabelli (Turr).

H.A. 3. *Ahmed Nuh* (rer Ahmed) graze from Bulhar to Damal to Jigjigga to Jerer, and sometimes south-east to Awareh, and east to Berbera, their old capital.

H.A. 4. *Yunis Nuh* graze from Lughaya to Medr, and sometimes to Awareh.

H.A. 5. *Jibril Abokr*, and associated small tribes, graze from Bulhar to Hogh, Jigjigga, Medr and Damal. They are mostly north-west of the rest of the Habr Awal overlapping with the Mahad Asseh of the Gadabürsi.

H.A. 6. *Makahil, Yesif* and *rer Liban* graze from Bulhar to Damal and Jerer, and sometimes range to Harawa, Dutka, Dagahbur, and in 1946 to the Webbi Shabelli.

H.A. 7. *Adan Esa* graze from Berbera to Bulhar, Dutka and Tuyo. In 1948 they ranged to Bur Madu and Harawa in the west.

H.A. 8. *Mohamed Esa* graze from Bulhar to Berbera, Negegr and Golis, and south on Arori and down to Banano, or even Haro Hagari.

514. ARAB

A. 1. *Abdalla Abokr* graze from Hargeisa to Haradigit and sometimes Jerer, and west to Banka Aror. In 1946 they ranged to Turr near the Webbi Shabelli.

A. 2. *Hashim Abokr*

(i) *rer Adan* and *Ahmed Abdalla* graze from Haradigit to Odweina to Golis to Hargeisa.

(ii) *Saleban* graze partly with the rer Adan and Ahmed Abdalla, and partly with the Abdalla Abokr.

(iii) *rer Ali* graze with the Habr Yunis between Burao, Degois and Danot (Haro Hagari).

A. 3. *Musa Abokr* graze, like A. 1, from Hargeisa to Haradigit, Jerer and Banka Aror.

515. EIDEGALLA

Ei. 1. *Eidegalla unspecified*

(i) *Guyobi* graze from Golis to Assa, Damal, Haradigit, and as far south-east as Haro Hagari or beyond.

(ii) *Yunis* and *ba Delo* graze slightly further west than Guyobi from Assa to Degois, Haro Gardur, Haradigit and Damal.

(iii) *Esa Daud* and *Abokr Musa* graze with Ei. 2, Hussein Abokr.

Ei. 2. *Hussein Abokr* graze from Hargeisa to Assa, Degois, Haro Gardur, Haradigit and Jerer. In 1946 the Abdi Barreh, Guled Esa, and Damal Yeryer ranged to the Webbi Shabelli.

516. HABR YUNIS. This is the greatest of the southern Haud stock-grazing tribes, a large part of the equally important Habr Awal being in the agricultural areas of the west and in the lowlands with more agricultural and trading interests, though Habr Awal as stock-herders in the western Haud are also very important. In Illustration 46 (para. 472) the north-east area covered by Habr Yunis represents a comparatively small part of the tribe living in an area amongst Habr Toljaala and some Dolbahanta. The bulk of the Habr Yunis tribe is in the south central part of the country.

H.Y. 1. *Elli Seed* graze from Assa to Tuyo, Degois, Banano, Haro Hagari and Haro Gardur.

H.Y. 2. *Isahaq Arreh :* the *Kalil Isahaq* graze around Assa and Tuyo, *Kasin Isahaq* from Assa to Degois, Haro Gardur, and sometimes Dutka, and *Abdalla Isahaq* from Assa to Dutka, Haro Gardur, sometimes Haradigit and Haro Hagari, and in 1949 north-west to Qabri Bahar.

H.Y. 3. *Musa Arreh :* part of the *Jibil Adan* graze around Surud and Sur near Erigavo. Most of the *Musa Arreh* graze from Arori to Tuyo, Haro Hagari, El Dader, Balleh Wein and Ain.

H.Y. 4. *Musa Ismail*
- (i) *rer Aul* graze from Arori to El Dader, Ain and Qolashe.
- (ii) *Jibril Turwa* and *Musa Turwa* around Surad and the coast below, to Sur, Faro, and sometimes Karaman.
- (iii) *Hamud Isman* from Surud and western Al Madu and the coast below to Asas, Karaman, and Haded.
- (iv) *Saad Yunis* graze from Madarhe to Haded, Karaman, Ban Ade, Bur Dab and Wireg, ranging, sometimes with other Musa Ismail, to Maag, south-east of Haisamo, Senag, Id Naas, Balleh Wein, Negegr, Sarar and Karin, and even Wahen, Haro Hagari, and Mudug (e.g. 1950). They usually accompany Habr Toljaala Musa Abokr in these wider rangings of growing tribal sections.

H.Y. 5. *Habr Yunis unspecified*
- (i) *Musa Abdalla* graze from Bulhar to Berbera, Golis and Arori, and some villages go all over the Haud as far as Haradigit and El Dader. In 1946 some villages went with rer Ainashe as far as Turr near the Webbi Shabelli.
- (ii) *Ogad Omr* graze from Assa to Banano and Haro Gardur, and also down into the Bulhar Berbera lowlands to Baba.
- (iii) *Baha Ismail, Gumbur, ba Dolbahanta* and *Elmi Adan* graze from Assa to Haro Gardur and Banano.
- (iv) *rer Hussein* graze from Golis and Negegr, to Balleh Wein and Haro Hagari.
- (v) *rer Momin* graze from Tuyo to Haro Gardur to Balleh Wein and sometimes Ain.

H.Y. 6. *Hersi Barreh* graze from Arori to Balleh Wein and Haro Hagari to Dabin.

H.Y. 7. *rer Ainashe* graze from Arori to Balleh Wein, Haro Hagari, El Dader, Fafan, Jerer, Degois, Tuyo, and a few to Assa and Golis. Most are centred between Tuyo and Haro Hagari. Some (ba Adan Madoba, Baha Derieh, and ba Makahil) went to Turr on the Webbi Shabelli in 1946.

517. HABR TOLJAALA graze from just east of Berbera, eastwards to Heis along the coast and inland from Negegr to Arori, Banano, Yahel, Haisamo, and Haded to Surud. They are territorially the central tribe of the Protectorate, seldom grazing in areas overlapped by extra-Protectorate tribes. Furthermore, few other tribes ever penetrate to the centre of this area, the outlying mountains of Guveneh and the Onkhor coastal belt.

H.T. 1. *Ibran* graze from Negegr and Ashararet through Sarar, Qolashe, Ain, Gubadoin, and Balleh Wein.

H.T. 2. *Omr* and *Yunis* graze around Onkhor, Guveneh to Ashararet, Sarar, Ain, and range to Balleh Wein and sometimes Haro Hagari.

H.T. 3. *Habr Toljaala unspecified*
- (i) *Samaneh* graze from Qolashe to Ain and Sarar.
- (ii) *Yesif* graze from Karin and Senag to Negegr, Sarar, Ain, Yaguri, Balleh Wein, and sometimes Haro Hagari.
- (iii) *Adan Madoba* graze from Sarar to Ain, Balleh Wein, Banano, and Yaguri, Yaheli, and sometimes Tomo.
- (iv) *Solemadu* graze in the same area as Adan Madoba, but sometimes to Haro Hagari.

H.T. 4. *Ahmed Farah* (*Nuh*) graze from Karin and Senag (especially Mohd. Ahmed), Ashararet, Sarar, Arori, Bur Dab, Ain, Balleh Wein, Gubadoin, and Dabin to Banano.

H.T. 5. *Dahir Farah* graze from Karin and Senag nearly to Berbera (part of Hassan Dahir), Negegr, Gubadoin, Bur Dab, Ain, Balleh Wein, and Dabin to Banano and sometimes Haro Hagari.

H.T. 6. *Uduruhmin* and *Barreh Adarahman*
- (i) *Uduruhmin* graze from Heis to Surud and Madarhe.
- (ii) *Ali Barreh* graze from Sarar to Ain, Banade and Nogal.
- (iii) *Basambur* and *Idleh Beeda* graze from the coast (Shalau) to Yanqara, Wireg, Madarhe and the hills (Siradleh) to Surud.
- (iv) *Boho* and *Ali Farah* graze furthest north-east from Wireg and Hanig through Sur and Asas to Karaman, Faro, Haded, and Madarhe.
- (v) *Ahmed Farah Be'eda* (A.F.B.) graze from Onkhor to Yanqara and Wireg, Hanig, Karaman and Haisamo.
- (vi) *Idleh Farah* (*rer Idleh*) graze from Guveneh to Ashararet, Yanqara, Wireg, Hanig, Haded, Haisamo, Karaman, Banade, Sarar and sometimes Balleh Wein, Yaguri, and Yaheli.

H.T. 7. *Sambur* graze in part between Onkhor and Yanqara, and part in Ain, Qolashe, and sometimes Haro Hagari.

(Toljaala are a separate tribe and graze with the Habr Awai Jibrail Abokr around Qadar. They are not Habr Toljaala.)

D. 1. *Dolbahanta unspecified*

(i) *Hayag* and *Khalid* graze from Ain to Balleh Wein, Tomo, and Banano, ranging to Id Naas and El Dader.

(ii) *Yahia* graze from Tomo to Yahel, Yaguri, Adur, Banade and Sur.

(iii) *Hassan Ughaz* graze the east Nogal, Dangudban, Tomo, and Senag. *Mohd.* and *Hamud Ughaz* a little further west to Erago and Adur.

(iv) *Khayat* graze from Yahel to Erago, Tomo, Id Naas, and Senag, ranging to Mudug.

D. 2. *Farah Gerad*

(i) *Barkhat* graze from Ain to Adur, Erago and Tomo, ranging to Haro Hagari.

(ii) *Ba Ararsama* graze from Ain to Adur, Erago, Dan Gudban and Tomo, ranging through Senag to Iah and the Nogal Estuary.

D. 3. *Ahmed Gerad*

(i) *Aligherri* graze from Ain to Yaguri, Yahel, Erago, Tomo, and Haro Hagari, ranging to El Dader and Mudug.

(ii) *Wa'ais Adan* graze from Ain to Balleh Wein and Tomo, ranging to El Dader and Mudug.

(iii) *Hagr Adan* graze from Ain to Erago, Id Naas, Balleh Wein, Banano and El Dader, ranging to Mudug, and rarely Fafan.

(iv) *Egal Naleya* graze from Ain to Balleh Wein, and Tomo to Banano, and range to El Dader.

D. 4. *Jama Siad* and *Omr Wa'ais*

(i) *Jama Siad* graze from Ain to Yaguri, and Yahel, Adur, Nogal, Haisamo, Tomo, Erago and Banade, and range to Id Naas, Dan Gudban, Sarar and Haro Hagari.

(ii) *Omr Wa'ais* graze in Adur, Nogal, and Haisamo to southern Sawl Haud.

D. 5. *Ogadyahen Siad*

(i) *Wa'ais Abdilleh* graze Adur, Nogal, Haisamo, and southern Sawl.

(ii) *Mahamud Ogadyahen* graze Adur, Nogal, Haisamo and southern Sawl.

(iii) *Nur Ahmed* graze lower Nogal, Haisamo, and southern Sawl, ranging to Dan Gudban, Senag, Yahel, Karaman, and occasionally Ain.

(iv) *rer Elmi* and part of *rer Jibril* graze Yaguri, Yahel, Adur and Haisamo.

(v) *Naleya Ahmed* (balance), graze western Al Madu, Madarhe, Haded, Asas, Heman, southern Sawl, Haisamo, Nogal, Banade, Karaman and Faro.

519. WARSENGELI graze along the eastern boundary of the Protectorate from the Maag on the coast to Karkar, Sawl, Haisamo, Haded and Al Madu to the coast, ranging into the Nogal and further north into Somalia Italiana, Daror, Qodmo, Iah, and lower Nogal.

W. 1. *Warsengeli unspecified*

(i) *Warlabbe* and *Adan Seed* graze Maag, Al Madu, and Hadaftimo to Heman.

(ii) *rer Haji* and *rer Salah* graze Maag, Al Madu, Hadaftimo, Karkar, Sawl, Heman, and the rer Salah as far as Haded and Haisamo.

(iii) *Ughaslabbe* graze Maag, Al Madu, Hadaftimo, Sawl Haud.

(iv) *Nuh Omr* and *Hinjiye* graze western Al Madu to coast and to Hadaftimo.

(v) *Mahumed* (*Omr*), live with H.T. Musa Abokr and graze in Madarhe, Yanqara, Wireg, and Sur.

W. 2. *Dubeis* graze in Maag, eastern Al Madu, Rain, Ausaneh, Karkar, Sawl, Haisamo, and range to Daror, Qodmo, Iah, Nogal Estuary and Dan Gudban.

W. 3. *rer Gerad*

(i) *Adan Yakub* graze in Haisamo and Sawl.

(ii) *Ba Ughaslabbe* graze Maas, Al Madu, Hadaftimo, Haded, Heman to Haisamo.

(iii) *Bih Idu:* graze Daror, Sawl, Haded and Haisamo.

(iv) *Ba Mijertein* (including *rer Fatah*) graze coast Al Madu, Hadaftimo, Haded and Sawl.

(v) *Lohjirreh and Gurgurreh* graze in Al Madu.

520. NEIGHBOURING TRIBES where these overlap British-protected tribes' grazing areas.
MIJERTEIN

M. 1. *Deshishe* (associated). Bosaso to Al Maskat, Daror, Karkar, Sawl.

M. 2. *Ali Jibrahil.* Al Maskat, Daror, Karkar, Sawl.

M. 3. *Ogad* and *Ali Saleban.* Daror, Karkar, Gono, Qodmo.

M. 4. *Isman Mahamud* and *Adarahin.* Al Maskat, Daror, Karkar, Sawl, Qodmo, Iah (ba Dubeis in lower Nogal).

M. 5. *Esa Mahamud.* Haisamo, Iah, Nogal, Jeriban, Senag.

M. 6. *Omr Mahamud.* Jeriban, Senag, Mudug, Id Naas, Tomo, Haro Hagari.

M. 7. *Beedyahen.* Bananwein, Id Naas.

521. HAWIYA

H. 1. *Hawiya Fiqashini* live with Dolbahanta from Banade through Nogal to Yahel and Erago.

H. 2. *Hawiya.* Jeriban, Adun, Qolal.

522. OGADEN. Ogaden Ibrahim graze furthest north from El Dader, the north-east home wells of the Ogaden. They graze to Haro Hagari, ranging to Banano. Ogaden rer Ali and rer Harun graze from Haradigit to Qarida Jerer and Harofafan, and south of this.

523. GHERRI graze in Ethiopia west of Qadau.

524. ABASGUL and SHEIKHASH are in Jigjigga area (Upper Jerer) but about 200 Abasgul live with the Dolbahanta ba Ararsama (Yahel, Erago, Dan Gudban), and a few Sheikhash live with HY. Musa Abdalla around Sheikh (Golis).

G. Domestic Stock

525. Estimates of stock numbers are given in Tables 18 and 19 (paras. 441 and 442). In Table 20 (para. 443) the recorded exports are shown for comparison. It should be noted that the exports are not only from the Protectorate, but also through the Protectorate, considerable numbers of sheep and goat skins regularly being brought in from Somalia and Ethiopia (especially Galkayu and Jigjigga) for export through Berbera (often in exchange for cloth, petrol and sugar). There has been some controversy about the numbers of stock, and this has been fully discussed by Brigadier G. T. Fisher (now Sir Gerald Fisher, K.B.E., C.S.I., C.I.E.), then Military Governor, in his "Pastures of British Somaliland" (Fisher 1947).

526. No actual count of all the stock has been possible, and the writer therefore gives (in Tables 18 and 19, paras. 441 and 442) his own estimate, with Glover's and Fisher's estimates for comparison.

527. The writer's figures were arrived at largely by cross-questioning and constructively arguing with well-informed Somalis of many tribes. Information was particularly sought as to the proportions of different types of stock: e.g. sheep: goats, sheep and goats: camels, camels: cattle, cattle: donkeys, men: camels, etc., for various tribes and sections, and for coastal lowlands as distinct from the Plateau peoples, and the agriculturalists compared with the purely stock-herding sections.

528. It was decided that in the Plateau and Haud there are approximately three sheep to one goat, and in the coastal lowlands three goats to one sheep. Cattle are owned only by certain sections and usually replace camels in part or in whole. There is usually a proportion of donkeys kept with cattle. Horses are no longer common and individual herds were estimated.

529. The approximate proportions of different types of domestic stock having been decided upon, the average number of each kind per man or per family in different sections was discussed. As the writer had actually counted large numbers of stock recovered from Mijertein bandits for Erigavo tribesmen in 1941 (over 4,000 camels, 15,000 sheep and goats and 500 cattle), and personally re-distributed these mostly to Erigavo, and to some Nogal tribal sections, he had some figures upon which to base his estimates in the Erigavo district and part of the Nogal area. Other knowledge was obtained in the hearing of political cases and awarding of compensation in stock, or return of stock, collection of fines in stock, etc., as a District Commissioner.

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535. Figures for camels watering at Ainabo recorded by the police there in 1946 are as follows:—

	H.T.	Dolb.	H.Y.
March 21st–31st, 1946	7,720	5,855	—
August 1946	17,292	16,447	14,030
September 1st–13th, 1946 ...	10,338	9,456	2,916

536. It had been hoped that if a severe drought occurred during the seven-year Survey, the observers would be trained in time to cover at least a large part of the country for stock counts at wells during the severe dry period. Such a dry period was in fact expected in 1950 as a possibility. The writer, however, had expected to make the counts in 1950, whereas in fact the end of the drought was actually in March 1951, and the counts should have been made in February and March 1951. The trained observers had all had to be paid off in January 1951, and the experiment was therefore not carried out.

537. *Camels*. These are the most important of the domestic animals in the internal economy of the country. They provide the large quantities of meat and milk consumed locally, hides mostly used for local shoes, and transport. Trained burden camels are absolutely essential for moving the villages of women and children with baggage and sheep and goats in many parts of the country, but the advent of the motor vehicle now modifies this position for as long as the country can afford to pay for motor vehicles and fuel. In the hills and broken country which make up at least a third of the Protectorate, though there are various motorable tracks through the hills, it would not be possible to graze the country effectively without pack animals. The camel is also essential in this area for fetching water to the villages when they have been erected. It has been stated in recent years that the modern motor vehicle can get anywhere. This is not true, and no detailed exploration of the Main Watershed and lowlands (especially the potential mineral belt, illus. 34, para. 238) can be carried out without burden camels (or other pack animals) except at second hand by using the reports of other explorers who have travelled on foot to cover the inaccessible areas. As regards the hides, some are exported as shown in Table 20 (para. 443) but, calculating that one hide (camel or cattle) makes six pairs of shoes, and that half the population gets a new pair of shoes every nine months, some 71,000 hides a year would be used internally for shoe-making alone. Accepting the average life of a camel as 15 years (including accidental deaths and slaughtering for meat), this suggests a total number of 1,065,000 camels, an interesting comparison with the figure 1,200,000 reached by addition of tribal and sectional estimates in Table 18 (para. 441).

538. The milk of the camel is excellent, though lacking in butter fat. It is drunk fresh, curdled, or slightly fermented. The meat is also much prized, and though a good deal of inferior camel-meat is eaten, special gelded camels (Gāwl) are fattened for slaughtering. Unfortunately the herds are often away from the villages for the sake of grazing, going far afield with the young men away from the less mobile villages and flocks. There is therefore some wastage of camels' milk, which should be made into cheese. At present cheese is not made.

539. A rich man may own as many as 1,000 camels, though there are not many so rich. In fact if he has the virility necessary to keep the ownership of such vast herds, he remains rich and a powerful leader, but it must be remembered that the herd supports a host of relations and followers. Crown property does not only support the King. The normal rich camel owner has perhaps 100 camels, and 10 to 20 is a comfortable number for the average well-to-do family.

540. The value of the herd, however, is not only to the owner and his immediate dependants, but to the tribe and the country as a whole. In time of drought the camel survives when other stock dies off, and is a last reserve to feed the people. From the ranging camel herds too, individual milch camels are sent in to the villages to provide milk, burden camels are sent to move the villages to fresh grazing and to fetch water, and the lowland burden camels are replenished from the great breeding herds of the Haud and Nogal. In fact the rich camel owner is a wealthy capitalist nominally owning what is in effect a communal herd.

541. Camels with green grazing will do without water for two or three months, the herdsmen also often subsisting on camels' milk only with no water or other food for the same period. When the grazing is dry camels are watered every 14 days (11 to 18 days), though if they are grazing salt-bush (Daran, Hadun, Ādē, etc.) they must be watered daily. Some small herds in the Nogal, and along the coastal strip (H'eb) of the Zeila Plain do for long periods graze largely on salt-bush, and water daily. There is usually an average of one camel fetching water (Dan camel) to every kadin (average, 70 head) of camels in the grazing area. Camels are milked by men.

butter (clarified to ghee), and also plough-oxen in the agricultural areas. They are not, however, used as beasts of burden (as with some of the Ogaden on the Tana River), but there are usually about two donkeys to every hundred head of cattle for transport purposes, though usually the owner of cattle has some camels and uses burden camels too. Roughly speaking the cow of the agriculturalist may be taken as the equivalent of the nomadic stock-herder's milch camel. Two donkeys are the equivalent of one burden camel. There are also herds of cattle which range from the Nogal and other places away from the main agricultural areas, and some which live in the higher mountains. Cattle can go two to four days without water, but in the ranging herds most of the cattle die in a drought (e.g. Nogal 1950), whereas agriculture provides some fodder near permanent water in the settled areas. A family can live comfortably on about 20 head of cattle, but often manages on less. Cows are usually milked by men.

543. *Sheep and goats* (flocks). The black-headed, fat-tailed Berbera sheep provides a skin famous throughout the world, and together with goat skins, this is the main export of the country (Table 20, para. 443). The wool is not worth shearing, and in fact the skins are so valuable, that the importation of long-haired Arabian goats is discouraged, lest the quality of the skins should be impaired.

544. Sheep and goats both provide milk, butter (ghee) and meat, the bulk of the ghee of the country being derived from this source, and probably the greater part of the meat. The flocks are the special care of the women and children, who live on them in the interior. A family of mother and three children can exist on as few as 50 sheep and goats and live reasonably with meals every day on 100. Probably 250 sheep and goats are the optimum number for the average family, being all that a woman with three small children can handle effectively. Larger numbers than this in a family usually mean that either the family must be large or help must be hired. Ideally a man should own about 20 camels, leaving a milch camel and two burden camels together with 250 sheep and goats with each wife in the interior amongst the nomadic stock-herders.

545. With green grazing the sheep and goats (except those pregnant) can manage two or three months without watering: in the dry season four to eight days. This, together with the cares of the family, ties the women folk to the villages, which cannot make unpremeditated forays to areas of new rainfall and better grazing as the camel herds do. For a major move, however, the women quickly pack up the houses and march long distances with the sheep and goats and children, to re-erect the houses in a new village near better grazing. Only women can erect a house or milk a sheep. Men or women milk goats.

546. Some sheep and goats are exported on the hoof as meat for the Red Sea and Gulf of Aden area. They are usually remarkably fat and healthy in areas where to the foreign observer there is practically no grazing at all. The average life of the sheep or goat (including a large proportion slaughtered for meat) is believed to be about five years. Three- and four-year-old rams make the best meat (really good mutton) with plenty of fat in addition to the tail fat. In the internal economy of the country the sheep and goat are only second to the camel in importance, because they are more liable to decimation in times of drought, and cannot carry loads. In the external economy they are far and away the most important product of the country at present.

547. *Donkeys*, like cattle, need water every two to four days, and most are kept by the cattle owners as beasts of burden. They are also used considerably in townships and small permanent settlements for carrying stone, firewood, water, etc., and in the difficult hill country where they can carry loads in places inaccessible to loaded camels. Abyssinian mules are also used for the same purposes or for riding (since they can do without water for two to four days), but they are purchased from Ethiopia and not deliberately bred in the Protectorate.

548. *Horses*. The Somali pony is well known as a polo pony, and when a company of the Somaliland Camel Corps was mounted on ponies there were considerable herds of horses in the country. With the increase of motor transport, and the losses from horse-sickness, the herds have been allowed to dwindle, and apart from a few sales to Government officials, the herds are now kept largely as a luxury by the richer Somalis. As the horse needs water every day or every second day, its use is limited to small areas except in rainy seasons, though the skilled stock-herder who knows his country can travel amazing distances on his pony.

549. The main herds are now with the Warsengeli, based on Hadaftimo and the Daror Valley, with the Dolbahanta in the southern Nogal, and the Dolbahanta and Habr Toljaala based on the Ain. There are also small herds with the Habr Yunis based on Odweina, some with Eidegalla, Arab, and Saad Musa in the Hargeisa and Qadau area, and some with the Gadabursi.

H. The Somali Family

550. The Somalis are Moslems, permitted to marry up to four wives at a time. To have five wives would be as serious a crime as bigamy in countries practising monogamy. In actual fact very few men have more than one or sometimes two wives, since limits are imposed, as in all countries, by economic sanctions.

551. The nomadic stock-herder needs a large family to handle the family stock, and one wife is seldom able to bring up a sufficiently large family to maturity. Polygamy is therefore a natural custom in a thriving community of nomadic stock-herders. Theoretically the women obey their men folk in accordance with religious law (as in Christian communities). In fact the woman's position is one of considerable power as long as she carries out the duties imposed on her by the nomadic life. If she successfully tends the flocks, makes and erects the movable houses, fetches firewood and water, butchers, cooks, bears children, and in her spare time weaves mats, makes ropes, and gathers wild berries, etc., she is a queen in her own household.

552. The man's work in nomadic stock-herding is not always so obvious to the alien observer. The man is seen driving camels, and watering them occasionally. His work of prospecting for new grazing and looking for lost stock is not so frequently noticed. Such work may entail several days walking, often without food or water, perhaps alone in the bush armed only with a club or spear, or even a knife or a stick sharpened at both ends (Garmagati), as protection against lions or enemies. Such feats of endurance, and suffering of hunger and thirst, are frequent in the life of the nomad stockman, and when he is seen sitting down in a " coffee shop " to drink a cup of tea and listen to the news in other people's conversation, it must not be inferred that he spends his life in idle chatter, whilst his wife carries wood and water, and goes about her business in the village.

553. There is no doubt that the nomadic life depends on a very delicate state of balance between the stock and the vegetational cover of the country, often resulting in famine in bad years. The Somali nomad must expect lean periods of famine and drought, and only a very few attain plenty for more than short periods in the best months of years of good rainfall. It is therefore obvious that, living with the prospect of semi-starvation at intervals, he works extremely hard to live at all. Whether the nomadic way of life can be improved by combined organization of the nomadic tribes of the area, and improved co-operation with the agricultural and township communities, remains to be seen.

554. The Somali family seems to average about five persons: father, mother, and three children. There is an extremely high percentage of deaths of children, particularly at birth and during weaning, but it is believed that about three children on an average reach maturity, though families of 24 or more are not infrequently brought up by one father.

555. The value of a male life, as assessed by tribal custom, is one hundred camels, and that of a female fifty camels. Customary law varies between tribes and groups of tribes, and though individuals know the customs of some tribes, it is doubtful whether any know the detailed customs of the whole Protectorate, a subject worthy of patient research and published codification.

RECOMMENDATIONS

A. Topography

556. There is no Topographical Survey Department in the Protectorate, although a good deal of topographical and cadastral survey is done at intervals. Most of such departmental survey work is largely in the nature of sketch mapping, not up to the standards of the Colonial Survey Department. Even amateur mapping, however, is valuable, especially in view of the general information obtained by the amateur surveyor whilst mapping. It is suggested that such amateur work should be carefully filed at Government Headquarters, to prevent further losses of this valuable type of work, believed frequently to have occurred throughout the Colonial Empire. Either this should be done by a (*Topographical*) *Survey Department*, or by a *Development Secretary* (see para. 575 below).

B. Meteorology

557. *Meteorological recording should be continued*, and should be a duty of all Government officials, as necessary. Filing and correlation of records should be done in the office of the Commissioner for Native Affairs or Development Secretary.

C. Geology

558.
(i) *A Geological Survey of the Potential Mineral Belt* (illus. 34, para. 238) is still needed to prove the value of the Protectorate. Fortunately development in the Potential Mineral Belt would not affect the great stock-herding areas of the south.

(ii) *The Water drilling programme in the Haud and Sawl Haud should be continued* when funds, equipment and driller are available, preferably under supervision of the Public Works Department with a geologist to advise.
The aerial photo-map asked for in connection with the 1946–48 Water Survey is still to be completed by the Colonial Survey Directorate.

(iii) When a driller and suitable rig are available in the country a *corehole should be drilled in the Nogal and the samples examined by a chemist for "evaporites."*

(iv) Though the oil companies do not appear interested, a trial borehole at Dagah Shabel might open up a minor oil industry.

(v) *A soil expert should be included in the staff* of the Veterinary Agricultural (and Fisheries) Department, at least for a reconnaissance survey of the country.

D. Flora and Fauna

559. This heading includes not only big game and wild flowers, but the domestic stock and the parasites and pests of man, stock, and of the vegetation. Research should be continued by the Agricultural, Veterinary, Fisheries and Medical Departments.

560. It is suggested that the Agricultural and Veterinary Department should take over the *collection of game records* from licensed sportsmen, who can contribute so much to zoological research.

561. The development of the fish-canning industry has been begun (during the course of the General Survey). *Further attention should be paid to the dried fish industry.* Dried fish is a basic food of many millions of people in the Far East.

562. A date scheme, which promises to become probably the most important of post-war developments in the Protectorate, is already in progress, directed by Mr. V. H. Dowson.

563. Agricultural teaching and improvement is being carried out by the Agricultural and Veterinary Department. It is suggested that further efforts should be made to *encourage the making of cheese* (especially from camels' milk) both locally for domestic consumption, and in a factory for export, to absorb the summer surpluses of milk from the herds too far from townships for dairy-milk distribution. Cheese is a very important article of diet in other Moslem countries, e.g. Egypt and Arabia.

564. *The production of coffee and tobacco should be attempted.*

565. The study of grazing control is being organized by the Agricultural and Veterinary Department. It has been agreed by an advisory committee that grazing control can only be carried out willingly by the graziers concerned, under the supervision of the Administration (at first District Commissioners and later Native Local Authorities). In this the people will have the advice of Grazing Control Officers, the Director of Agriculture and Veterinary Services, and the Commissioner for Native Affairs.

566. The selfish minority of graziers who will not co-operate in closing pasture areas for rejuvenation of grazing, after the majority concerned have agreed, would have to be fined in stock until they conformed. The stock-herding industry is so important to the Protectorate that *every effort must be made to organize grazing so that the production and marketing of stock can be increased without destroying the grazing*. The Somali graziers are well aware of this, and have very much more *local* knowledge of the subject than any of the advisers from other countries. The weak point in their use of the grazing areas lies in their inability to co-operate amongst themselves in the matter of rest periods for over-grazed areas. In the attempt to obtain more than their share of the common grazing, they not only themselves over-graze areas in order to forestall others, but even lie about the state of the grazing, thereby giving the impression that they do not know as much as the Advisory Grazing Officers.

567. Owing to the constantly varying factors connected with grazing control, any control scheme must be flexible, and periods of closure would vary from year to year, particularly depending upon rainfall.

568. Illustration 49 (in pocket) shows a tentative scheme for the closure of about one-fifth of the Protectorate (not including the Grazing Areas in Ethiopian Territory, which are essential to the economy of the Protectorate).

570. Such a scheme must be subject to discussion and variation, and the map is given here merely as a basis for such discussion. The major features of the scheme are:—

(i) The tribes which would graze the areas when rejuvenated are clearly marked on the map.

(ii) Roads or furrows either already demarcate these areas (and the areas between many of them) or could fairly easily be made to define clear boundaries.

(iii) As far as possible the areas are triangular so that stock passing them could be driven in over wide open tracts, converging to the well centres which they must visit in transit, and diverging rapidly away from the well centres again.

(iv) Alternate triangles could be considered later, if the first triangles were successfully rejuvenated.

571. The direction of any Protectorate-wide grazing control scheme is an extremely difficult task even for an experienced man. The director is liable to be responsible for large-scale famine, and expensive famine-relief, but in fact the stock-herders themselves would probably prevent the carrying out of any unsound scheme, by wholesale refusal to co-operate.

572. *The conservation of rainwater in the "waterless areas"* is being improved under the direction of the Agricultural and Veterinary Department. The red Haud soil, when not underlain by surface secondary limestones, can be dug fairly easily and puddled by stock after the first rains. The presence of large (15 feet and over) Bil'il trees (*Acacia mellifera*) in the Haud and Sawl Haud often indicates likely sites for such reservoirs (Ballehs).

573. The provision of water for stock over wide areas is a necessity for the proper distribution of grazing stock, since without it overgrazing near the permanent water areas in the dry season is unavoidable. The writer's personal opinion is that the country is not overstocked, but that the stock is often badly distributed, and that the nomadic grazing movements need organization.

574. At present the only major exports are animal products. Gums are also exported and there may later be other agricultural products, especially dates. The mineral wealth of the country is still unproved. There is, however, another important product which is often overlooked. The Somali himself is remarkably intelligent. At present very few Somalis are educated, and the aim of many of those who go to school is clerical employment. As the educational programme develops the Somali may form an important link between Africa,

575. A great need of the Protectorate at present is a senior officer to co-ordinate development plans. Without such an officer there is liable to be a lack of co-ordinated planning and insufficient co-operation between departments concerned with development plans. The administration is usually fully occupied in maintaining law and order, an increasingly difficult task in a world in which changes seem to be more and more accelerated. *A Development Secretary is therefore recommended in the Secretariat*, preferably with some scientific training as well as administrative ability, and possibly combining the post of Commissioner for Native Affairs with that of Development Secretary. The post should be temporary and paid for out of the savings which could be made in Colonial Development schemes, by their co-ordination and supervision.

576. In the administration of the nomadic stock-herding areas, administrative officers must travel somewhat in the way in which nomads do. If the administrator travels, it is essential that *there should be a number of small posts* (police, irregular police (Illalo) and unofficially "coffee shops") upon the permanence of which both the nomadic stock-herder and the travelling administrator can rely. Unless there are enough of these official and unofficial little centres, the administering officer tends to be tied to his own headquarters in order to maintain contact with the moving tribesmen.

577. Another great need of the Protectorate is more reliable regular communications and transport. *Roads are recommended as follows:—*

(i) A first-class road from Hargeisa through Odweina to Burao.
(ii) A road from Berbera through Dur Elan and the Wireg Pass to Gal Idleh, branching thence to Buran and Hudun.
(iii) The reopening of the road from Bawn to Geriso and Silil.

578. The next need is for *regular (however infrequent) bus and mail services between major centres*, and for *a regular shipping service between Berbera and Great Britain*, even if it be only once every three months. The regularity of transport services is even more important than their frequency or load-carrying capacity.

579. If the harbour is improved and used by shipping *Berbera will again become the natural capital of the country*, despite the money already spent on Hargeisa as a capital. Berbera should obviously be the distributing and collecting centre for imports and exports, roads should radiate from it, storage buildings should be in Berbera, and it should be fully staffed by Government officials.

580. It is suggested that the *basic wage for labour should be tied to the prices of millet, rice, dates, sugar, tea, petrol, cloth, and blankets.*

581. It is believed that *there are too few executive administrative officers in proportion to the number of Government employees* in the Protectorate as a whole.

F. Publications

582. *The publication of reports, maps and records, and their sale at a low price is extremely important.* Unless this is done unnecessary reduplication of work will continue. As examples, the "Glover Report," (1947) the review by the Military Governor "The Pastures of British Somaliland" (1947), and Mr. J. W. Cummins' "Report on a Fiscal Survey of the Somaliland Protectorate" (1950), and many other reports are not freely available.

583. In the past the suggested possibility of political repercussions has resulted in the stifling of some reports. This need no longer be considered necessary, especially if the Protectorate Government will review all publications in a regularly distributed Official Publication.

584. It is suggested for instance that, if funds permit, 2,000 copies of this Report should be published at Sh. 5/- per copy. This should give ample opportunity for criticism, especially of the subjective part of this Report, by a widely distributed public, including a large number of Somalis.

585. Recommendations were made in the 1944 and 1945 Annual Reports of the General Survey, but as recommendations are not factual but subjective and some of the writer's expressed opinions were not appreciated, recommendations were not made in the later annual reports. Despite probable disagreement by some with the above recommendations, the writer feels that it is his duty to express his views, formed after seven years of intensive research work in the Protectorate at a cost of £56,000.

CHAPTER XI

CONCLUSION

586. It should be remembered that Somaliland is a Protectorate: " It's not our land. We've only paid for it. We belong to it and it belongs to the people " (Kipling). Whilst it is a Protectorate it is the duty of the protecting power to safeguard the existing systems of tribal customary and religious law, and only to give leadership as regards improvements and development. It is of the utmost importance that this leadership should be given by an administration composed of officers who love the country and the Somali people. Wisdom and knowledge are necessary, but neither ambition nor new ideological variants can replace the confidence of the people, which can only be gained by love and security.

587. The world is in a state of flux and accelerating change, and few if any of us are able to adjust ourselves quickly enough to new conditions and recognize the new angles from which development may be approached. Despite widespread literacy and fast air and radio communications in a modern world, most people are still inclined to be too much influenced by direct personal contact, measured distance, and contiguity of areas. There is a serious time-lag in answering correspondence from greater distances: the hand-delivered note from next door is answered at once: the letter which took several days to deliver by air is not. And lastly the popular general conception of geography tends to be purely areal. Somaliland for instance is on the same continent as Kenya, and also " about half-way up on the right." It therefore tends to be grouped with East African Dependencies, and though it might well take over the Somali-populated Northern Frontier District of Kenya as a Province of the Somaliland Protectorate, it might equally well be governed with the Aden Protectorate. With the more and more rapid facilities of modern air travel and wireless communication the Protectorate might even share a Governor with Fiji. Such fantasies are not proposed as recommendations, but it is suggested that the bonds imposed by territorial propinquity are no longer a physical sea-borne necessity, but due only to mental inertia.

CHILBOLTON,
20th June, 1951.

JOHN A. HUNT.

CHAPTER XII

USEFUL NOTES

588. (i) MAPS. *Graticules* of degrees of latitude and longitude in the Somaliland Protectorate are approximately 67 miles or 110 kilometres square. Half-degrees are shown on most of the illustrations to this Report, the half-degree squares of the graticule being about 33 miles or 55 kilometres.

To draw an approximate graticule in plan:—

1 . 500,000 scale plan: 22 cm. to the degree.
1 : 10,000,000 scale plan: 11 mm. to the degree.

A map on the scale of 1 : 250,000 approximates in scale to a map of four miles to the inch (1 : 253,440).

589. (ii) MEASUREMENTS. The " *Ba*' " is a " fathom," being a five to six-foot arm-span, or about the height of a man. The word is used particularly in connection with well depths.

A good glossary of Somali measurements is given in Kirks' "Somali Grammar" (Kirk 1905).

590. (iii) TRANSPORT. *Burden camels* carry a load of 320 lb. divided into two parts of 160 lb. each.

There are exactly seven camel loads to a ton.

The loaded burden camel marches at 2½ m.p.h., in two five-hour marches a day, 25 miles a day.

(More usually with assorted baggage the camel carries 240 lb. about 18 miles per day.)

The heaviest articles in a box should be packed so that they will be loaded nearest to the camel's back, usually on the hinge side.

A 44-gallon drum weighs 60 to 80 lb.
44 gallons of water weigh about 440 lb.
Petrol weighs a little less.

The 1950 *rates of payment for transport* were:—

Camel, per day marching, loaded or unloaded	Sh. 2.
If the journey is certified hazardous by a District Commissioner or Head of Department	Sh. 3.
Camel, per day, resting	Sh. 0.75.
Beladir (Runner), per day	Sh. 2.
Two-ton lorry per mile	She. 1/– to Sh. 1.50.

591. (iv) SOMALI RATIONS. The 1950 Government daily ration for a man was:—

18 oz. millet; 8 oz. dates; 4 oz. rice; 2½ oz. ghee.
One man's ration for a day weighed 2 lb. 0½ oz.
One man's ration for 30 days weighed approximately 62 lb.
The approximate price for one man's ration for one day in 1950 was Sh. 1.

Before 1939 the price of a ration used to be about Sh. 0.25.

592. (v) DEFINITIONS. *Ecology* is " the study of organisms in relation to their environment."
Areal is the adjective derived from the noun area, " pertaining to areas."
Erosion is " gnawing away, destroying by slowly eating out, wearing away, eating out." (The word, however, is popularly used to include encroachment by sand-dunes, destruction of forests, overgrazing and any other factors which may contribute to the destruction of soil.)

593. (*Table* 23.)

TABLE 23

BIBLIOGRAPHY OF BRITISH SOMALILAND

The scope of this little work is indicated by the title. It was originally intended as a list of published works referring principally to British Somaliland. That such a list would be illogical soon became apparent. Authors of books about Somaliland and Somalis take as little regard of political boundaries as do the Somalis themselves. So the list has spilt over the borders of British Somaliland, southwards, east and west and even overseas.

The limits that have come about are better than they would have been had the list been strictly confined to the borders of British Somaliland. But how far to go over the border has been a great problem, and it cannot be pretended that the limits are now strictly logical. The truth is that no reasonable limit can be set.

However, no work listed here is irrelevant to the study of some aspect of British Somaliland. Where possible all references have been checked ; but there are surely some errors. These are not the the fault of J. A. Hunt, W. A. Macfadyen, Philip Glover or Desmond Clark, all of whom, whether they know it or not, have been of much assistance.

N. M. VINEY.

September 10*th*, 1947.

(*Revised December* 1950 *by J. A. Hunt.*)

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observers were sent out independently to as many watering places in the district as possible, to record daily the number of kadin of camels and tiroh of sheep and goats which watered at each centre, and to note the tribes which owned them. Some observers' records were not considered very trustworthy. One was arrested by tribal police, and at Ber and Eik the wells were practically dry. Some watering places, especially in the hills and in the lowlands of Burao district, were omitted for lack of trained observers. Although the observers recorded the sheep and goats only the records for camels were considered sufficiently comprehensive to be worth calculating. The number of kadins of camels was therefore multiplied by 70 (the average number of camels in a kadin), and again by 14 (the estimated watering interval for camels in days at that time). In fact it was later found that some camels were watering only every 18 days, so that the final number of watering camels arrived at can only be approximate. The owners were Habr Toljaala, Habr Yunis and some Eidegalla and Arab.

531. These approximate calculations from actual counts of herds by multiplication were carried out quite independently of the estimates by addition of tribal stock ownership shown in Table 18 (para. 441).

532. *Camel Counts February and March* 1945:—

Place	Average No. of herds of all tribes watered daily	Average No. of herds of H.Y. camels watered daily	Actual No. of herds of H.Y. camels counted in 14 days	No. of H.Y. camels estimated
BER	3	1	15	1,050
EIK	0	0	0	0
KIRIT	0	0	0	0
QORIALE	14	2	—	1,960
QORILUGUD	4	1	—	980
WADAMAGO	9	3	40	2,800
AINABO	—	1	15	1,050
ELAL	—	4	52	3,640
BURAO	23	18	247	17,920
EL HUMA	63	? 43	—	42,140
BERATO	105	? 105	—	102,900
ODWEINA	103	? 70	—	68,600
Totals	—	248	—	242,410

These figures include a few H.Y. Musa Abdalla of Berbera district.

533. Several less successful attempts were made to collect similar stock figures, but in every case there was either good grazing far from water, or rain fell before the stock had come in to water frequently.

Thus from March 7th to 24th, 1946, the following numbers of camels watered at Burao wells:—

H.Y. 36,820, H.A. 7,630, H.T. 6,370, showing an approximate proportion of H.Y. 6: H.A. 1: H.T. 1, but 1946 was an excellent rain year, and watering at the wells was irregular.

534. In 1948 at Burao about 16,800 Habr Yunis camels watered in the ten days before the Gu main rains started on April 23rd. This would give a figure of 23,320 H.Y. camels at Burao in 14 days—rather more than in 1945. In the same ten days, 137 tiroh of sheep and goats of the H.Y. watered at Burao, estimated at only about 13,700 head.

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21. NUH YUSUF
21. SALAH YUSUF (rer Salah)
21. AMIR YUSUF
21. ISMAN YUSUF } (ba Ina Mohd. Yusuf) 8
21. ALI YUSUF
21. ABDI YUSUF } (ba Ina Guled) 4
21. MAHAMUD YUSUF

22. YUSUF MAHAMUD
22. AMIR MAHAMUD } (Gerad Mahamud) 4
22. ABDULLA MAHAMUD

23. ESA ABDULLA
23. IBRAHIM ABDULLA
23. IDRAIS ABDULLA } (ba Ughaz Labba) 4
23. ADAN ABDULLA
23. ISMAN ABDULLA
23. SAMATER ABDULLA } (Bih Idur) 4
23. AHMED ABDULLA
23. ALI ABDULLA } (ba Mijertein) 4

24. FATAH ALI (ba Ina Dahir) 9
24. MAHAMUD ALI
24. ABDULLA ALI
24. ARALEH ALI
24. SAMAKAB ALI } (ba Ina Dahir)
24. AMIR ALI
24. SAMATER ALI
24. RAGEH ALI
24. MOHD. ALI } (rer Gerad Abdulla) ... 4

1. UGHAZ LABBA (Arabian, with Warsangeli) 10

MIJERTEIN

1. DAROD
2. MOHD. DAROD
3. KOMBE MOHD.
4. AMLALEH KOMBE
5. HARTI AMLALEH
6. MOHD. HARTI (Mijertein)
7. WABENEYA MOHD. ... ... WABENEYA
7. NOLIS MOHD.
7. AWI MOHD.
8. HASSAN TALARER
9. SUAQRON HASSAN... ... ... SUAQRON
8. MOHD. TALARER
9. UMAD NEBI MOHD.
10. ALI UMAD NEBI (at Botiala)
10. JIBRAHIL UMAD NEBI
11. ISMAIL JIBRAHIL
11. SALAH JIBRAHIL
11. NUH JIBRAHIL
11. ALI JIBRAHIL ... ... ALI JIBRAHIL
11. IBRAHIM JIBRAHIL
12. MAHAMUD IBRAHIM
13. ABOKR MAHAMUD
13. HALGASI MAHAMUD
12. ALI IBRAHIM... ... ... BE'EDYAHEN
12. MOHD. IBRAHIM
13. SALEBAN MOHD.
14. ALI SALEBAN ... ... ALI SALEBAN
15. AULYAHEN ALI
15. BE'EDYAHEN ALI
15. ADAN ALI
15. ISMAIL OMR?

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