

A COLLECTION OF BIRDS FROM GREAT NAMAQUALAND, SOUTHWEST AFRICA

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The small collection of birds reported upon in this paper was gathered together by Mrs. L. O. Sordahl while stationed at the astrophysical observatory established by the Smithsonian Institution on Mount Brukkaros, in the Southwest African Protectorate. This mountain, about 5,000 feet in height, is situated a short distance north of Berseba in that part of the protectorate known as Great Namaqualand. (Pl. 1.) Collecting was carried on as time and opportunity permitted on the mountain, along the Fish River near by, and at Berseba.

So little ornithological work has been done in Great Namaqualand in recent years that even a small collection such as the present one reveals many points of interest. Of the 24 forms contained in it, no less than 7 were new to the collections of the United States National Museum, and 2 others were new to science. As far as I have been able to discover, the eggs of *Alario leucolaema* have been taken but rarely, and are thus of interest in adding to knowledge of the breeding season of that bird.

Great Namaqualand is an arid region with rather sparse vegetation, the conspicuous plants being the giant aloes and thorny bushes. The rains come in the summer, and bring in their wake a temporary freshness of vegetation. The breeding season, as far as known, of most of the small birds is in the wet period.

For the loan of specimens in connection with the present study I am indebted to the authorities of the American Museum of Natural History, the Museum of Comparative Zoölogy, and the Academy of Natural Sciences of Philadelphia. The photographs illustrating this paper (pl. 1) are from negatives by W. H. Hoover, of the Division of Radiation and Organisms of the Smithsonian Institution.

Family ANATIDAE, Ducks, Geese, Swans

ANAS ERYTHORHYNCHA Gmelin

Anas erythrorhyncha GMELIN, Syst. Nat., vol. 1, pt. 2, p. 517, 1789 (Cape of Good Hope).

An adult male was shot while swimming in a waterhole in the Fish River, 4 miles from Berseba. It was very fat and was badly damaged by shot.

Family ACCIPITRIDAE, Hawks, Harriers, etc.

MELIERAX MUSICUS MUSICUS (Daudin)

Falco musicus DAUDIN, Traité, vol. 2, p. 116, 1800 [Cape Province (ex Levallant)].

An adult, sex undetermined, was shot by a schoolboy at Keetmanshoop. The feet, the cere, and circumocular area were bright reddish orange.

This bird is of great interest in that it has the cheeks, lores, auriculars, forehead, and lateral borders of the crown nearly black, precisely as in the description of *Melierax poliopterus coombsi* Roberts.¹ The question arises as to whether this bird should be called *coombsi*, which would then have a range extending across South Africa from the northern Transvaal to Southwest Africa (based on only two specimens, each forming one of the present limits of its range), or whether *coombsi* should be looked upon as a melanism of *musicus*, occurring here and there throughout the range of the latter. I prefer to follow the latter course, as it seems unlikely that a black-faced form, *coombsi*, and *musicus* would occur side by side over so great an area.

The other side of the argument is advanced by Roberts, who claims that *musicus* and *poliopterus* are specifically distinct and that *M. poliopterus coombsi* proves this by virtue of the fact that it occurs together with *M. musicus* in the Zoutpansberg district of the Transvaal. It must be admitted that the present specimen may be used to bolster Roberts's thesis, showing how extensively *coombsi* invades the territory of *musicus*, just as legitimately as it has been used here to support the supposition that it is a geographically sporadic melanism.

Roberts writes that *coombsi* has the outer secondaries uniformly dark with white tips and some subapical vermiculations. No such condition is present in the specimen obtained by Mrs. Sordahl.

The bird has the secondaries almost pure white and is therefore probably a male. Its dimensions are as follows: Wing, 345; tail, 225;

¹ Ann. Transvaal Mus., vol. 14, pt. 3, p. 239, 1931 (Montrose Estates, Zoutpansberg).

culmen from the cere (chord), 19; tarsus, 93 mm. The narrow bars on the abdomen are darker than in several birds from Cape Province.

Family FALCONIDAE, Falcons, Caracaras

FALCO TINNUNCULUS RUPICOLUS Daudin

Falco rupicolus DAUDIN, *Traité*, vol. 2, p. 135, 1800 [Cape of Good Hope (ex Levaillant)].

The South African kestrel was very numerous around Mount Brukkaros, where it was usually seen sitting on the tops of the koerkerboum trees, according to Mrs. Sordahl's notes. The birds have a very shrill, screechy cry. Two males were obtained on Mount Brukkaros, one on April 7, 1931, and one on September 30, 1931. The former may really have been a female or else a youngish bird, as it has the head and neck washed with tawny-rufous, and also the rump and upper tail coverts, while in the other bird these areas are grayish. Also the former has the rectrices more heavily barred and the dark marks on the back much broader and more extensive than in the latter.

Roberts² has tentatively referred specimens from 60 miles north of Okahandja to the Rhodesian subspecies *rhodesi*, but in this I think he is mistaken.

Family CHARADRIIDAE, Plovers, Turnstones, etc.

HOPLOPTERUS ARMATUS (Burchell)

Charadrius armatus BURCHELL, *Travels*, vol. 1, p. 501, 1822 (Klaarwater in the Hay district of Cape Province).

A male in good, fresh plumage was shot standing near a pond at Berseba, February 25, 1930.

Family COLUMBIDAE, Pigeons, Doves

COLUMBA GUINEA PHAEONOTUS Gray

Columba phaeonotus G. R. GRAY, *List of specimens of birds in the British Museum*, pt. 4, p. 32, 1856 [South Africa (founded on *Columba trigonigera* Bonaparte, *Conspectus generum avium*, ed. 1, vol. 2, p. 50, 1850)].

A male was shot from a rock ledge on Mount Brukkaros, November 10, 1930. The bare circumocular skin is recorded as bright red in life.

Roberts has recently³ described a pale, bleached grayish race, *bradfieldi*, from Waterberg, Southwest African Protectorate. The present bird should be *bradfieldi* on geographic grounds, but it is

² Ann. Transvaal Mus., vol. 12, pt. 4, p. 304, 1928.

³ Ann. Transvaal Mus., vol. 14, p. 239, 1931.

indistinguishable from *phaeonotus* from the Cape Province. It therefore casts some doubt on the validity of Roberts's form.

Family COLIIDAE, Colies

COLIUS COLIUS (Linnaeus)

Loxia colius LINNAEUS, Syst. Nat., ed. 12, vol. 1, p. 301, 1766 (Cape of Good Hope).

Mrs. Sordahl shot a female in some bushes close by a waterhole near Fish River at Berseba, November 10, 1929, and another female 13 miles southeast of Berseba, February 25, 1931. She found them in flocks of considerable size. Of the bird collected in February she noted that "* * * the skin was grey and black in spots. It was infested with lice, and had parasitic worms in the intestine."

Slater⁴ states that *C. c. damarensis* Reichenow does not appear to be separable. I therefore use a binomial for these specimens.

Family CAPITONIDAE, Barbets

TRICHOLAEMA LEUCOMELAS LEUCOMELAS (Boddaert)

Bucco leucomelas BODDAERT, Table des planches enluminées, p. 43, 1783. [Cape of Good Hope (ex Daubenton, pl. 688, fig. 1)].

Two males were collected at 3,500 feet on Mount Brukkaros on March 13, 1931. Both were sitting in trees in the crater of the mountain and were uttering a series of wheezing notes not unlike those of the American sapsuckers (*Sphyrapicus*).

These two specimens have no spots or streaks on the underparts and are therefore not *T. l. namaqua* of Little Namaqualand. They are both young birds with no red on the forehead, and they lack the toothlike notches on the maxillary tomia. They agree with the description and figure of *T. affine* Shelley, which is the young of *leucomelas*.

In Zululand a race *zuluensis* Roberts occurs, said to be decidedly yellower below than either *leucomelas* or *namaqua*.

Family PYCNONOTIDAE, Bulbuls

PYCNONOTUS NIGRICANS NIGRICANS (Vieillot)

Turdus nigricans VIEILLOT, Nouveau dictionnaire d'histoire naturelle, vol. 20, p. 253, 1818 [banks of the Orange River in Namaqualand (ex Levaillant)].

Two males were obtained at Berseba, one on July 24, 1930, and one on October 6, 1930. Another male was collected 6 miles from Berseba on March 1, 1931. The eyes were recorded as bright red

⁴ Systema avium Ethiopicarum, pt. 1, p. 266, 1924.

with black pupils, the rim around the eye like a circle of orange beads. Mrs. Sordahl found the song to be similar to that of the western meadowlark of North America (*Sturnella neglecta*).

The specimens are in worn plumage.

Family TURDIDAE, Thrushes

OENANTHE MONTICOLA MONTICOLA Vieillot

Oenanthe monticola VIEILLOT, Nouveau dictionnaire d'histoire naturelle, vol. 21, p. 434, 1818 (Namaqualand, ex Levallant, pl. 184).

A male and a female were obtained on Mount Brukkaros (at 5,000 feet) on July 22, 1931. The birds were seen hopping along on the rocks together and were apparently a mated pair. Mrs. Sordahl wrote in her notebook that “* * * these birds stay around the mountain all year. They vary in color; the males have a white bar of feathers on the shoulders of the wings. Some males have white on under tail coverts and lower half of ventral side, but some have white only around base of tail. Their call is a *chirrup, chirrup* when hopping on the ground. When sitting on posts or wires or flying they have a lovely musical song that is long and warbling and includes a whole scale of notes.”

The male is in the somewhat gray-headed plumage with white upper wing coverts, white rump and upper tail coverts, and white abdomen, but with black (white-bordered) under tail coverts.

CERCOMELA FAMILIARIS GALTONI (Strickland)

Erythropygia galtoni STRICKLAND, in Jardine's Contributions to Ornithology, 1852, p. 147 (Damaraland).

A male was collected at Fish River, 6 miles from Berseba on March 1, 1931. Mrs. Sordahl writes that this species travels in large flocks, and she assumes that, as she never saw it before at a waterhole, the species was probably passing through on migration at the time the specimen was taken.

Recently, Roberts⁵ has described a race, *damarensis*, from Windhoek, which is said to differ from *galtoni* in having the throat pale brownish and only the abdomen and under tail coverts whitish instead of the entire underparts yellowish white as in the latter form. He states that the actual type locality of *galtoni* is Swakopmund, which would make *galtoni* a lowland coastal bird and *damarensis* a form of the higher interior. On this basis the present specimen might be expected to be of the latter race. Unfortunately the specimen is in worn plumage and somewhat stained, but there is

⁵ Ann. Transvaal Mus., vol. 14, pt. 3, pp. 242-243, 1931.

certainly no increasing paleness from the throat to the abdomen as would seem to be the case in *damarensis* from Roberts's description. However, I have no topotypical material of either *galtoni* or *damarensis* for comparison.

The bird shows signs of molt in the wings.

ACROCEPHALUS BAETICATUS BAETICATUS (Vieillot)

Sylvia baeticata VIEILLOT, Nouveau dictionnaire d'histoire naturelle, vol. 11, p. 195, 1817 (South Africa, ex Levaillant, pl. 121, fig. 2).

A male was collected in bushy undergrowth at Fish River, 6 miles from Berseba, on March 1, 1931. It has a scolding song, according to Mrs. Sordahl's notes.

ERYTHROPYGIA CORYPHEUS ABBOTI Friedmann

Erythropygia coryphaeus abboti FRIEDMANN, Proc. Biol. Soc. Washington, vol. 45, p. 65, Apr. 2, 1932 (Fish River, 6 miles from Berseba, Southwest African Protectorate).

Abbot's ground robin is known only from two specimens collected by Mrs. Sordahl at the type locality, March 1, 1931. As stated in the original description, it differs from the nominate form in having much smaller white tips on the outer rectrices.

One of the two specimens is unsexed, the other is a female, but as Mrs. Sordahl found them together in a tree with two half-grown young and considered them a mated pair, it is very probable that the unsexed bird is a male. Both specimens are in abraded plumage.

Family SYLVIIDAE, Old World Warblers

CISTICOLA SUBRUFICAPILLA NAMAQUA Lynes

Cisticola subruficapilla namaqua LYNES, Ibis, suppl., Oct., 1930, p. 216 (Klipfontein, Little Namaqualand).

Two specimens were obtained at 4,000 feet on Mount Brukkaros, an unsexed bird on June 29, 1930, and a male on July 20, 1930.

Mrs. Sordahl observed this grass-warbler dodging in and out among the low bushes of the mountain side. She records the call as a sharp, short note.

The unsexed bird is small and is probably a female. The dimensions of the two specimens are as follows (the first figure in each case refers to the male): Wing, 58, 51; tail, 58 (molting), 53.5; culmen from base, 11, 10.5 mm.

These two specimens constitute a notable northward extension of the known range of this bird, which was previously recorded only

from the Orange River south to the Olifants River. It is possible that they may be of an undescribed race, as the male is larger than the figures given by Lynes for *namaqua* (wing 51, tail 48 mm).

PRINIA FLAVICANS (Vieillot)

Sylvia flavicans VIEILLOT, Encyclopédie méthodique, vol. 2, p. 438, 1820 (South Africa; Namaqualand, ex Levaillant).

On February 24, 1931, an adult female and a partly fledged young bird were collected at Fish River; an unsexed adult was taken at the same place on March 1, 1931; and an adult male was shot there on November 10, 1929. Several others were seen but not collected.

Mrs. Sordahl writes that this bird has a scolding, chattering song.

The juvenal bird has no dark pectoral band and is paler yellow on the underparts than the adults. The female attending the young one shows signs of molt in the wings and tail.

Family MUSCICAPIDAE, Old World Flycatchers

PARISOMA LAYARDI Hartlaub

Parisoma layardi HARTLAUB, Ibis, 1862, p. 147 (Zwartland, Malmesbury District).

Mrs. Sordahl shot a male Layard's tit-babbler on Mount Brukkaros, on January 18, 1931. The bird was found in a dry waste at the foot of the mountain (3,200 feet) close to the desert.

The specimen is in worn plumage. This is the first example of this species to come to the United States National Museum.

BATIS PRIRIT (Vieillot)

Muscicapa pririt VIEILLOT, Nouveau dictionnaire d'histoire naturelle, vol. 21, p. 486, 1818 (Lower Orange River, ex Levaillant).

Three specimens of the pririt flycatcher were collected on Mount Brukkaros—a female on January 18, 1931, and a "male" (really a female) and a female on March 22, 1931. Mrs. Sordahl found these birds flitting about in the bushes and small trees on the arid slopes of Mount Brukkaros.

The birds are all in worn plumage and were badly damaged by the shot.

Roberts⁶ has recorded a nest found on October 12 at "Quickborn," 60 miles north of Okahandja, by R. D. Bradfield.

⁶ Ann. Transvaal Mus., vol. 12, pt. 4, p. 310, 1928.

Family LANIIDAE, Shrikes

LANIUS COLLARIS SUBCORONATUS Smith

Lanius subcoronatus A. SMITH, Illustrations of the zoology of South Africa, pl. 68, 1841 (Latakoo).

A female was collected at Fish River, 6 miles from Berseba, on March 1, 1931. Mrs. Sordahl found it perching " * * * in a tree that was thickly populated with insects."

The specimen is a young one molting into adult plumage.

TELOPHORUS ZEYLONUS PHANUS (Hartert)

Pelicius zeylonus phanus HARTERT, Nov. Zool., vol. 27, p. 451, 1920 (Farta Bay, near Benguella Town).

Mrs. Sordahl collected an adult male 20 miles from Keetmanshoop, on September 10, 1931. Her notes on this shrike are as follows: " Found hopping among the bushes in a dry creek bed, eating insects. This bird had a huge grasshopper in its mouth when I shot it. They fly in pairs. When resting in the bushes, first one calls and the other answers. They do not warble or sing. Their call is a whistle of many notes. The whistle is exactly like a human being's whistle, and if one did not see the bird one would think it was a person whistling."

In the original description of *phanus*, which is a pale-backed race, Hartert writes that " * * * probably a third form inhabits Namaqualand, as a male and female collected by C. B. Grant in May and July, 1903, at an elevation of 3,104 feet, appear to have the flanks and sides of breast much more widely ashy grey, and are a little smaller. More material will probably lead to the establishment of a third form." I have seen no Angolan birds (typical *phanus*) and so can not say whether the present specimen, which, on the grounds of its pale-green back as compared with a series of typical *zeylonus*, is definitely *phanus*, differs from Benguella birds in the coloration of the flanks and sides. I find no appreciable size difference between it and South African birds (*zeylonus*), and, since Hartert found none between Angolan and South African examples, I assume it to be similar in size to typical *phanus*. It does have the gray color of the sides and flanks very extensively developed, but is matched in this regard by two Cape Province examples. Its dimensions are as follows: Wing, 95; tail, 96.5; culmen from base, 23 mm. In my opinion it would be unwise to describe a third form on such slender evidence.

This specimen extends the known range of *phanus* far to the south and upsets the distribution given by Selater⁷ who records *phanus*

⁷ Systema avium Ethiopicarum, pt. 1. p. 634, 1924.

only from the coastlands of southern Angola, and *zeylonus* from as far north as Damaraland. The Damaraland and Namaqualand birds, if not distinct, should be considered as *phanus*. Roberts⁸ has identified birds from Swakopmund as *phanus*, and I think he is quite right in so doing.

Family STURNIDAE, Starlings

ONYCHOGNATHUS NABOUROUP NABOUROUP (Daudin)

Sturnus nabouroup DAUDIN, *Traité d'ornithologie*, vol. 2, p. 308, 1800 (Kamiesberg, Little Namaqualand, ex Levaillant, pl. 89).

Mrs. Sordahl collected an adult female at 5,000 feet on Mount Brukkaros on January 15, 1931. She noted that the iris was bright orange with a black pupil. She found this starling always in pairs and recorded the song as a musical utterance "something like the meadow lark" (*Sturnella*).

The specimen collected is in a molting condition in the wings.

In Damaraland and southern Angola a race, *benguellensis*, with the light areas on the rectrices pure white, replaces *nabouroup*.

Family NECTARINIIDAE, Sun-birds

CHALCOMITRA FUSCA (Vieillot)

Cinnyris fuscus VIEILLOT, *Nouveau dictionnaire d'histoire naturelle*, vol. 31, p. 506, 1819. (Great Namaqualand, ex Levaillant, pl. 296).

Mrs. Sordahl collected six specimens of the dusky sun-bird, as follows: Male, Fish River, 13 miles from Berseba, February 25, 1930; 4 males, 1 female, Mount Brukkaros, January 18–August 31, 1931. Males taken in January and February are in breeding plumage; males taken in July and August are in the white-bellied plumage with the breast and center of throat black.

In January these sun-birds were found in large numbers in the trees and low bushes in the dry scrubby areas at the foot of Mount Brukkaros (3,500 feet); also up to 5,000 feet on the slopes.

Of one of the nonbreeding males, collected August 31, Mrs. Sordahl writes: " * * * first seen fluttering against window pane of house, then flew to a tiny bush and pecked at some seeds, then flew to water fountain. Its tongue was 21 mm long and had a split of 3 mm on the end of it." The body fat of two of the birds is recorded as being bright orange in color.

⁸ Ann. Transvaal Mus., vol. 12, pt. 4, p. 310, 1928.

Family PLOCEIDAE, Weaver-finches

PASSER MELANURUS DAMARENSIS Reichenow

Passer arcuatus damarensis REICHENOW, Orn. Monatsb., vol. 10, p. 77, 1902 (Damaraland; type in Berlin Museum from Windhuk).

One "female" (really a male by plumage) was collected at Berseba 3,000 feet, July 24, 1930. Mrs. Sordahl writes that these "* * *" birds are found around the buildings and trees and chicken yards of Berseba the whole year."

The Damara race of the Cape sparrow is distinguished by its lighter rufous back and upper wing coverts and its deeper, purer black crown, cheeks, chin, and throat and breast patch. The specimen collected is in fresh plumage and constitutes a form new to the national collections.

Family FRINGILLIDAE, Grosbeaks, Finches, Buntings

ALARIO LEUCOLAEMA Sharpe

Alario leucolaema SHARPE, Bull. Brit. Orn. Club, vol. 13, p. 80, 1903 (Great Namaqualand; type in Brit. Museum from Hountop River).

Two males and one female were collected on Mount Brukkaros on March 22, 1931, while on April 5, 1931, a female and her nest and three eggs were taken in the same place. The first three birds were shot in bushes near a small stagnant pool in the crater of the mountain at an altitude of 4,500 feet. One of the males had its mouth full of grass seeds. The song is recorded as "*pwei pwei*, but when we came close to them the warning note was a sharper *peep peep*."

On April 5, the female bird, collected with the nest, was found perching in a tuft of grass at 4,500 feet on the mountainside. It flew away when approached to within 5 feet. Mrs. Sordahl examined the tuft of grass and found a tiny nest with three very pale bluish-white eggs sparsely speckled with reddish brown at the larger pole. "The bird flew to a near-by bush and kept up a sharp note of *peep peep-peep peep*, or *pey pey*, the note rising on the end of the second peep. The nest was well hidden by the grass tops and would never have been detected if the bird had not flown out."

One of the eggs was broken in transit to the museum; the others are in perfect condition. They measure 18 by 13.5 and 18 by 13 mm, respectively.

The nest is a very compact, deep cup made of grasses, plant fibers, and fine straws outside, well lined with cottony plant fibers inside. The inside dimensions are: Depth, 30; diameter, 45 mm; outside: Depth, 48; diameter, 70 mm.

The status of *leucolaema* has been an unsettled question for many years. Sharpe described the white-throated birds as a species; Shelley and others considered them merely the winter plumage of the black-throated *Alario alario*; still others looked upon *leucolaema* as the immature males of *alario*. The present series, including the white-throated adult males taken within two weeks of the finding of a nest with eggs, conclusively does away with Shelley's contention that *leucolaema* is the winter plumage of *alario*. Also the fact that they are adults (with hard, firmly ossified skulls) shows that *leucolaema* can not be the young stage of *alario*. The two are certainly distinct—so distinct that I consider them full species as did Sharpe, and not subspecies as does Sclater.⁹ In a case like this, where a genus contains only two forms, it is not particularly necessary to call them conspecific in order to emphasize their relationship.

The two males reveal considerable variation in color; one has a larger and deeper black patch on the breast and on the crown and occiput; the former is also darker rufous above—deep hazel—while the latter is tawny-cinnamon. The females are alike in color. The dimensions of the present birds are as follows: Males: Wing, 67.5, 65; tail, 45, 43; culmen from base, 9.5, 9.5; females: Wing, 63, 64; tail, 43, 44; culmen from base, 9, 9 mm, respectively.

POLIOSPIZA ALBOGULARIS SORDAHLAE Friedmann

Poliospiza albogularis sordahlae FRIEDMANN, Proc. Biol. Soc. Washington, vol. 45, pp. 65, 66, Apr. 2, 1932 (Mount Brukkaros, Southwest Africa).

Mrs. Sordahl obtained two specimens of this long and relatively slender-billed race of *Poliospiza albogularis*. Both are in worn plumage.

Mrs. Sordahl writes that “* * * these birds stay on the mountain during the whole year, living on top of the mountain during the hottest months, November, December, January, and February. During the cool months * * * also found at the lower levels and on the foothills below the mountain.” She often saw the birds in flocks in the large tree aloes, apparently eating the seeds. A bird bath and drinking fountain set up near the house was frequented also, as many as 30 birds at one time being counted on it.

A male from Van Rynsdorp, Cape Province, collected by de Schauensee, approaches *sordahlae* in the bill character, but has a shorter wing.

⁹ *Systema avium Aethiopicarum*, pt. 2, p. 818, 1930.

FRINGILLARIA IMPETUANI (Smith)

Emberiza impetuani A. SMITH, Report on expedition for exploring central Africa, etc., p. 48, 1836 (between Nu-Gariep and the Tropic, that is, Bechuanaland).

Two males and one female were collected on Mount Brukkaros on March 22, 1931. Mrs. Sordahl saw several of these rock buntings eating grass seeds and drinking water from a little pool in the crater of the mountain.

These specimens are in rather abraded plumage. Four similarly worn examples from Cape Province are distinctly more rufous, especially on the head and back. The two groups of specimens appear to be separable subspecifically, but in the absence of topotypical *impetuani* from Bechuanaland, I can not tell which one of the two groups is the new one. Four birds from the Kasai district, southern Belgian Congo, agree better with birds from Cape Province than from Great Namaqualand. The Mount Brukkaros birds may be characterized as gray headed and gray naped in contrast to all the others examined. Two females from Etosha Pan and from Kalkveldt, Southwest Africa, are more brownish than the Mount Brukkaros birds, but are more grayish than South African or Katangan specimens seen.

Since this paper was first written, de Schauensee¹⁰ has published on this species and finds the present specimens less grayish than one from Etosha Pan, more like typical *impetuani*.

¹⁰ Proc. Acad. Nat. Sci. Philadelphia, vol. 84, p. 202, 1932.



MOUNT BRUKKAROS FROM A DISTANCE OF ABOUT 8 MILES
The village shown is Berseba.



CLOSER VIEW OF MOUNT BRUKKAROS
Showing the nature of the environment.

