BREEDING HABITS.—The Kaffrarian Museum has on various dates received jackal litters ranging from two to six in number.

From three to four appears to be most usual. A female received on July 27th contained 7 fœtuses; FitzSimons mentions as many as 9.

The young are born and reared in burrows, caves, or crevices.

"The female brings forth her young in a burrow or cave at the start of the rains—about November or December."—Wilhelm (S.W. Africa).

"The parents are very rarely found in the holes with the young ones, generally lying up in the nearest patch of bush. Breeding burrows usually have an escape hole."—Cloete.

"The young of jackals and porcupines have on more than one occasion been found in the same burrow together."—Hobson.

"The young are born in an earth, either excavated by the animal itself or more often by an ant-bear. When feeding the young they either carry the food in their mouths or regurgitate. The male helps the female in foraging." —W. Sclater.

DESCRIPTIVE NOTES.—There are two albinistic skins of this jackal, one in the Kaffrarian Museum (from Vryburg) and the other in the Albany Museum (from Serowe). These skins have a pale erythristic wash, and the division between the back and sides is indicated by a reddish line.

"*Canis mesomelas achrotes* is an extremely pallid form of the Jackal, the colour of the ears and limbs being quite distinctive."—Thomas.[1]

"The pups are of a drabbish brown colour, darker on the back, paler below." —Haagner.

The weight of a Black-Backed Jackal is said to average 21 lb.—about that of a large English Fox.

Side-Striped Jackal—Grysjakkals, Witwasjakkals

Canis (*Schæffia*)[2] *adustus* Sundevall

CANIS ADUSTUS.

Canis adustus Sundevall, 1847, Oefvers, Akad. Förhandl., Stockholm, iii, p. 121.

Type (in the Stockholm Museum ?) from the Magaliesberg, Transvaal.

NATIVE NAMES:

PERSONALLY COLLECTED

Ovambo: *Ombánji-kakóro.*
Bechuana: *Rantalájě.*

[1] The Black-Backed Jackal is one of the few medium-sized mammals in S.W. Africa that penetrate through the Namib Desert to the coast. The Namib Desert is the only true rainless desert in Southern Africa, and most of the smaller mammals living in it show a tendency to a still more pallid coloration than is assumed farther inland.

[2] *Schæffia* Hilzheimer, 1906, Zool. Beob. Frankfurt, a.m. 47, pp. 363–373; genotype *S. adustus* Sundevall.

Ovacuangari: *Mbánzi.*
Ovadirico, Mambakushu: *Mbwáwa.*
!Kung Bushman: *Ka:ri.*

OTHER SOURCES

Sikololo: *Luwowa* (Balme); *Luwawa, Namakas-imbundu* (Lancaster).
Mambakushu (Simbukushu): *Mbowa* (Balme); *Mgu, Pugu* (Zukowsky).
Chinkoya: *Mumbwa* (Lancaster).
Chila, Chitonga: *Mwaba* (Lancaster).
Chilavale: *Bandzi* (Lancaster).
Kaonde: *Lubwala* (Lancaster).
!Kung Bushman: *Bo* (Zukowsky).
Sikwengo (Hukwe) Bushman: *Po* (Balme & Zukowsky).
!O!kung Bushman (Central Angola): *Po* (Bleek).

DISTRIBUTION IN SOUTH-WEST AFRICA.—In South-West Africa the range of the Side-Striped Jackal is restricted but exceedingly well defined.

It occurs only in Grootfontein District—from a little south of latitude 19 S. to the Okavango, Eastern Ovamboland, and the Caprivi. In Grootfontein it makes a sudden appearance at about the latitude of Kano Vlei,[1] from which place, northwards, it becomes exceedingly plentiful, outnumbering the Black-Backed Jackal everywhere within its range, although the two species were met with side by side as far north as Numkaub (latitude 18 S. approx.).

(According to Zukowsky, this species has been stated to occur in some parts of the Kaokoveld, but I feel sure this is incorrect.)

GENERAL DISTRIBUTION OUTSIDE SOUTH-WEST AFRICA.—In Southern Africa *Canis adustus* occurs in Southern Rhodesia, Ngamiland, N.E. Bechuanaland, Portuguese East Africa, the Transvaal, Zululand, and Northern Natal (Warren).

"In the Transvaal the Side-Striped Jackal has not been found farther south than the Magaliesberg Range. It occurs in the Nylstroom, Pretoria, Belfast, and Middelburg Districts, and in the Sabi Reserve."—Haagner.

Beyond the latitude of the Zambesi it extends through East-Central and Northern Rhodesia, Nyasaland, Mozambique, parts of the Congo, Tanganyika Territory, Kenya Colony, and probably Southern Uganda in the centre and east.

"Widely and generally distributed in Northern Rhodesia. Scarce or absent in a great part of the Luangwa Valley."—Pitman.

"Common in British East Africa. Found in rougher country and at higher altitudes than *mesomelas*. but not less common in the plains."—Percival.

"The northern limit of its range is from five to six degrees north of the Equator."—S. Hamilton.

[1] In the North-West Kaukauveld (not Kaokoveld) Wilhelm heard *Canis adustus* calling in company with *mesomelas* as far south as Noma.
It is probably widely distributed in Angola.

HABITS.—In South-West Africa Side-Striped Jackal are little known, as they only occur in the extreme north-east, a region in which there is no European settlement.

In Grootfontein District they inhabit sand-plains on which is a considerable amount of thick bush or low forest, and as a rule favour the neighbourhood of water, although—away from the Okavango—there is not much surface water during the dry season apart from very occasional Bushman pits.

These large jackals are primarily nocturnal, and attracted by the smell of fresh meat will approach within twenty yards of camp fires at night, being perhaps bolder in this respect than *Canis mesomelas*.

Side-Striped Jackals were often trapped in considerable numbers around camps for the first week or so; after which they gradually became cunning. Like *Canis mesomelas* they put up very little fight if cornered or caught in a trap.

Single individuals or pairs were occasionally met with moving about by day in cool weather, chiefly in the early morning or towards sunset. They walk or trot along game paths in a rather hunched-up manner with drooping tails, and, were it not for their larger size, might easily be mistaken for *Otocyon*.

Although concentrating where carrion lies, they appear at most times to go about singly or in pairs. According to Sclater, they sometimes hunt in packs.

"In the Eastern Transvaal, the Side-Striped Jackal favours rather more thickly-wooded country than the Black-Backed Species. It is much more sluggish than the latter animal, and also more nocturnal and solitary in habit. By day individuals lie up in bush, issuing forth at night to seek carrion or to prey on small mammals and ground-roosting birds. Constitutionally it is rather timid and generally makes a poor fight against dogs. It goes to ground readily. This species relies on catching its prey by pouncing on it and not running it down, its pace being comparatively slow."—Stevenson-Hamilton.

The Side-Striped Jackal is essentially a scavenger, but preys also on small mammals, ground-roosting birds, lizards and insects, and eats wild fruits. It is quickly attracted by any kind of carrion; dead gerbils proved a particularly reliable bait for trapping purposes. I have never heard of this species attacking sheep, perhaps because it mostly inhabits regions where small stock is not kept. Notwithstanding its somewhat larger size, *adustus* seems to be more timid and less disposed to worry small game than *mesomelas:* according to Okavango Natives, it does little harm to young cattle or unwounded game. In East Africa Percival believes *adustus* and *mesomelas* to be equally destructive to the young of game.

"It is not entirely carnivorous, and, in addition to locusts and other insects, it will eat certain wild fruits. I do not think it ever attacks mammals of larger size than a hare, although it becomes a poultry thief when opportunity offers." —S. Hamilton.

"It is stated to prey on small mammals, sick individuals of larger species, and also fruits."—Sclater.

The most usual cry of *Canis adustus* is a series of rather metallic yaps uttered at short intervals—up to a dozen consecutively; quite unlike the howling of *mesomelas*. When caught in a trap it sometimes makes a low chattering sound.

"The call is a melancholy 'Poh-poh-poh,' not followed by a howl as in *mesomelas*."—Wilhelm.

"A single cry midway between a howl and a bark."—S. Hamilton.

"In the Jardin des Plantes a jackal (species unrecorded) lived for 16 years 10 months. An Abyssinian Jackal is believed to have lived in London for over 16½ years."—Flower.

Breeding Habits.—"Average number of young in a litter, three or four; Natives say that six is fairly common. Wolhunter once shot a female containing as many as twelve fœtuses. In the Eastern Transvaal litters seem usually to be born in the winter and have been taken from June onwards. The young are born in holes, as a rule those discarded by porcupines or ant-bears. Period of gestation, about nine weeks."—S. Hamilton.

"A female in the Pretoria Zoo gave birth to two litters, one of three and the other of seven pups; periods of gestation, 57 and 60 days."—Haagner.

"The young are born during the rains. Period of gestation, about 70 days."—Wilhelm.

"They breed in a large earth, generally one situated on the side of a hill, the same earths being used year after year. Here the bitch brings forth four to six pups. In East Africa I have seen more young jackals about during September and October than at any other time of the year, although I think they breed to some extent all the year round. Cross-breeding with domestic dogs often occurs."—Percival.

Descriptive Notes.—*Canis adustus* stands higher at the shoulder than *mesomelas*, and, apart from its white tail-tip, is a less strikingly-marked animal. The ears are comparatively short, thick, upright and pointed; which together with the bright, intelligent-looking, amber-brown eyes, give it a somewhat close resemblance to a small Alsatian Wolf Hound. The ears of *mesomelas*, on the other hand, are long, triangular and fox-like. The coat of *adustus* is comparatively long and loose. The tail hairs stand out in life, but, with less woolly under-fur, the tails flatten out in dry skins (as in *Otocyon*) and partly lose the brush-like appearance, which is retained in *mesomelas*. The side-stripes are far more noticeable in life than in dry skins, owing to the fact that the pale-tipped hairs which form the stripes are apt to become displaced. In immature specimens the limbs are slightly tinged with rufous. In adult females the mammæ are fringed with short, rufous, rather harsh hairs.

In addition to an albinistic specimen of *Canis mesomelas* in the Albany Museum there is a second skin there (also from Serowe) which, owing to the texture of the tail hairs, I believe to be an albino of *adustus*. This skin agrees with the albinos of *mesomelas* in the Albany and Kaffrarian Museums in being washed with pale rufous.

Bechuana trade skins of this species, when made up, are known as 'Grey Jackal' karrosses.

"Weight (of a female), 24 lb. Dogs probably weigh up to 30 lb."—Percival. Shoulder height, 45–50 cm.—(Wilhelm).

The Great-Eared Foxes

Otocyon

Otocyon Müller, 1836, Archiv. Anat. & Phys. Med., p. L; genotype, *O. megalotis* Desmarest, 1822, Mammal. Suppl., i, p. 538. Delalande's Fox from South Africa (Bechuanaland ?).

Delalande's Fox—Bakoorjakkals

Otocyon megalotis Desmarest

OTOCYON MEGALOTIS MEGALOTIS.

Canis megalotis Desmarest, 1822, Mamm. Suppl., i, p. 538.

Type (in the Paris Museum ?) from the Cape.

OTOCYON MEGALOTIS STEINHARDTI.

Otocyon steinhardti Zukowsky, 1924, Archiv. f. Naturg., Abt. A, 1 heft, pp. 52–58.

Type (not preserved) from Goreis (Ugab Mts.), 45 km. west of Outjo, S.W. Africa.

NATIVE NAMES:

PERSONALLY COLLECTED

Herero: *Okata-ká-ha.*
Ovambo: *Ombúü, Mbúgu.*
Bechuana: *Mothlósě, Motlósi.*
Ovadirico, Mambakushu: *Li-shánga-shanga.*
Ovacuangari: *A-sánga-sanga.*
Nama Hottentot, Berg Damara, Hei||kum Bushman: *||Ab.*
||K'au||en & !Kung Bushman: *!U.*
Karross trade name: *Macloutsie, Maclusi.*
German (S.W. Africa): *Löffelhund.*

OTHER SOURCES

Bechuana: *Thlosi* (Zukowsky); *Mothlusi* (England).
Nama Hottentot: *||Ai* (Schinz).
!Kung Bushman: *||Ai* (Bleek); *Ku* (Zukowsky).
Sikwengo (Hukwe) Bushman: *A* (Zukowsky).
!O!kung Bushman: *||Ai* (Bleek).[1]

[1] Miss Bleek's ||K'au||en, Naron, and !Kung names for the Silver Fox (*Vulpes*) may correctly refer to *Otocyon*.