CHAPTER 13

CRYPTOMYS HOLOSERICEUS (WAGNER) 1843

This species was first described by Wagner (1843, 373), based on three specimens which were made available to him in the (?) Leipzig Museum in Germany. Prior to the naming of this species the specimens under discussion were referred to as representatives of the hottentot mole-rat, C. hottentotus. Wagner however, noticed that certain aspects mentioned in the original description of the type of C. hottentotus, did not fit these three specimens entirely and he was therefore prompted to distinguish between C. hottentotus and C. holosericeus mainly on the larger size and different colouration of the latter.

According to Wagner, the type specimen was obtained by a donation of a collection of skins belonging to Herrn Feldmesser Leeb, from Graaff-Reinet. The second specimen was purchased at the "Krebsch'en Auktion", while the third was obtained from the botanist Drege.

Thomas (1895, 238) emphasized the fact that C. holosericeus was described on three specimens which were collected at different localities, and that therefore, the specimens may eventually prove to be of different species. In view of the fact that Graaff-Reinet is the first mentioned locality, the specimen from there should be taken as the type.

Thomas and Schwann (1906, 166) pointed to the fact that mole-rats "... referred of recent years

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to G. hottentotus prove on closer examination to be referable to two species, a larger and a smaller, of which the former is more northern and eastern, the latter more southern and western in distribution; but whether and how far they overlap we are not at present able to say with any certainty". Thomas had seen Wagner's three specimens and he found that the two "adult" specimens were referable to the larger species while the "young" specimen could be placed with the smaller species (i.e. C. hottentotus). It is to be noted, however, that Wagner, in his original description of the holosericeus species, stated that the one specimen had only attained about two-thirds of its "possible" length (i.e. presumably the smaller specimen). The measurements given by Wagner appear to have been taken from one of the larger specimens, fixing the name of holosericeus on the latter.

As here understood, Cryptomys holosericeus is a monotypic species, occurring in the north-western Cape Province as well as in the north-western Orange Free State and south-western Transvaal.

Cryptomys holosericeus (Wagner)

Georychus holosericeus Wagner, in Schreber, Säugth. Suppl. 3: 373, 1843. Type locality: Graaff-Reinet district, Cape Province.

Georychus vryburgensis Roberts, Ann. Transv. Mus., 5: 274, 1917. Type locality: Vryburg, northern Cape Province.

Cryptomys bigalkei Roberts, Ann. Transv. Mus., 10: 73, 1924. Type locality: Glen, north of Bloemfontein, Orange Free State.

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Cryptomys orangiae Roberts, Ann. Transv. Mus., 11: 259, 1926. Type locality: Glen, north of Bloemfontein, Orange Free State.

Cryptomys vetensis Roberts, Ann. Transv. Mus., 11: 259, 1926. Type locality: Taaibosch-spruit, Vet river, Orange Free State.

Cryptomys holosericeus valschensis Roberts, Ann. Transv. Mus., 20: 316, 1946. Type locality: Bothaville, northern Orange Free State.

Type specimen: (?) Leipzig Museum, Germany.

Type locality:

Graaff-Reinet, Cape Province.

Distribution: (Fig. 13.1).

In comparison with C. damarensis or C. hottentotus, C. holosericeus does not display such a wide geographical distribution. It occurs in the north-western Cape, in the vicinity of Kimberley, ranging northwards to the vicinity of Vryburg. It also occurs in the north-western Orange Free State (e.g. in the vicinity of Bothaville) as well as at Glen north of Bloemfontein. Across the Vaal river, this species is encountered at Bloemhof and Wolmaransstad in the south-western Transvaal.

Diagnostic characters:

In most respects in colour and structure like C. hottentotus, but the species tends to be yellower in colouration and considerably larger in size H.B. M=141 mm., C.B.M=35.3 mm. (♂♂). The mammae consist of two pairs of pectoral, and one inguinal pair, as is the case in C. hottentotus.

Colour:

The overall colouration of this species is

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a yellow-buff, uniformly distributed over the dorsal surface, while tending to be slightly lighter coloured below. The bristles on the tail show the same colouration, while the feet show a pinkish colouration in the living specimens, tending to turn brown in study skins. The absence of any white patches or marks on or in the vicinity of the head, is a constant feature in this species.

The colouration tends to show some geographical variation. This is well illustrated in specimens from the Vryburg district which are decidedly browner than specimens from the Bothaville district. However, in each population, all the various colour gradations can be expected and these colour differences are only clear when a number of study skins from the same locality are studied simultaneously.

Size: Adult ♂♂:

H.B. 125-160 mm., M = 141 mm.

T. 19-30 mm., M = 24 mm., (17.0% of H.B.)

H.F. 19-27 mm., M = 24 mm., (17.0% of H.B.)

C.B. 31.7-38.3 mm., M = 35.3 mm.

B.C. 13.3-15.9 mm., M = 14.9 mm., (42.2% of C.B.)

I.W. 6.8-7.9 mm., M = 7.2 mm., (20.3% of C.B.)

Z.W. 21.1-28.6 mm., M = 25.4 mm., (71.9% of C.B.)

M.W. 5.8-7.9 mm., M = 7.0 mm., (19.8% of C.B.)

U.T.R. 5.3-6.8 mm., M = 5.9 mm., (16.7% of C.B.)

L.J. 21.1-25.9 mm., M = 23.8 mm., (67.4% of C.B.)

L.T.R. 5.3-7.1 mm., M = 6.2 mm., (17.5% of C.B.)

Adult/...

Adult ♀♀:

H.B. 125-145 mm., M = 138 mm.

T. 18-28 mm., M = 23 mm., (16.6% of H.B.)

H.F. 18-28 mm., M = 22 mm., (16.5% of H.B.)

C.B. 30.4-34.2 mm., M = 32.7 mm.

B.C. 14.1-15.3 mm., M = 14.7 mm., (44.8% of C.B.)

I.W. 7.1-7.9 mm., M = 7.2 mm., (22.0% of C.B.)

Z.W. 21.4-24.7 mm., M = 23.4 mm., (71.5% of C.B.)

M.W. 5.6-6.6 mm., M = 6.3 mm., (19.2% of C.B.)

U.T.R. 5.2-6.1 mm., M = 5.8 mm., (17.7% of C.B.)

L.J. 19.8-22.7 mm., M = 21.4 mm., (65.4% of C.B.)

L.T.R. 5.6-6.7 mm., M = 5.9 mm., (18.0% of C.B.)

Sexual dimorphism in size is apparent: when 22 ♂♂ and 21 ♀♀ of C. holosericeus are compared in respect of C.B. length, ♂♂ (M=35.3 mm. ± 1.881 mm.) are significantly larger than the ♀♀ (M=32.7 ± 1.091 mm.) at the 1% level (t = 2.7, 41 degrees of freedom, P = 0.01).

Skull and dentition:

Roberts (1951, 393) has stated that the nasals in C. holosericeus are broad near the back but narrowing more or less to a point at the back. He furthermore states that the condyles do not project behind the paroccipital processes. As far as the present author is concerned, it is felt that too much variation can be expected in these characteristics to make them of diagnostic value.

The skull of holosericeus is ruggedly built, on the average larger than the skull of C. hottentotus, while it corresponds more or less in size to that attained by damarensis, but differing therefrom in the absence of the

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thickening of the outer wall of the infraorbital foramen. Ellerman et.al. (1953, 231) state that the greatest length of the ♂ skull (including incisors) is usually not below 40 mm., while the corresponding length in ♀ skulls is rarely below 38 mm.

There are no diagnostic features in the dentition of C. holosericeus on which this species could possibly be separated from other Cryptomys species.

Discussion:

A few remarks on the type locality of C. holosericeus are pertinent here. It has been indicated above that the specimens representing C. holosericeus in Wagner's material have probably been collected at different localities. In fact, only the skin which served as the type specimen has been described as coming from Graaff-Reinet, while the localities of the other two specimens have not been indicated. If Graaff-Reinet is accepted as the type locality for this species, it is evident that it is located in the middle of the geographical distribution exhibited by C. hottentotus in the eastern Karoo. This raises the question why another species should suddenly occur under identical ecological conditions under which C. hottentotus seems to thrive and to which it is adapted.

Furthermore, if Graaff-Reinet is accepted as the real type locality, this would imply an extended southern distribution pattern for C. holosericeus which does not fit the logical distribution pattern of C. holosericeus in the north-western Cape and Orange Free State. When the known localities for C. holosericeus specimens are plotted

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on a distribution map, it becomes evident that the supposed type locality (i.e. Graaff-Reinet) falls entirely outside the present known range of distribution of holosericeus.

It would be of interest to know where the other two specimens, referred to by Wagner, were collected. It could well be that they were collected in the present known areas of distribution of holosericeus. It is also not clear from Wagner's description whether Herrn Feldmesser Leeb was resident at Graaff-Reinet, or whether he received the specimen from someone else who gave Graaff-Reinet as the locality where the specimen was collected.

In considering these few remarks mentioned above, I am inclined to raise the possibility that the accepted type locality as proposed for C. holosericeus should be accepted with some reservation and doubt.

The validity of C. holosericeus as a separate species has also been queried on a number of occasions. As an example, Thomas (1895, 238) has mentioned the fact that he could not distinguish 'G. hottentotus', 'G. ludwigii' and 'G. holosericeus' from 'G. caecutiens'. As has been indicated in the present work elsewhere, the former two and latter species are synonyms under the species Cryptomys hottentotus. It is thus interesting to note an element of uncertainty on the validity of C. holosericeus held by Thomas.

On the other hand, Thomas and Schwann (1906, 166) stated that specimens referred to 'G. hottentotus' in the past, could on closer examination be referred to a larger and smaller species.

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To what extent and how far these two species overlapped, they could not state with certainty. The difference in size is chiefly in general bulk, so that it is not easy to give any single dimension which would distinguish the two at all stages. They suggested that the alveolar length of the tooth row (above 6.5 mm. in the larger and below in the smaller) would be as convenient as any. Comparing old skulls only, the larger species (i.e. C. holosericeus) may attain 36 mm. and over in basal length, while the smaller (i.e. hottentotus) rarely reaches 33 mm. The latter figures given by Thomas and Schwann correspond reasonably well with the C.B. lengths found for holosericeus and hottentotus respectively in the present work. The present author is therefore inclined to tentatively retain the species rank of C. holosericeus instead of merging it under hottentotus, as has been suggested in some circles. This retention is based mainly on differences in overall bulk of the two species, whereas aspects of colouration, cranial morphology and number of mammae could point to reasons for synonymizing C. holosericeus under C. hottentotus, the latter name having priority by approximately 17 years.

The way Ellerman et.al. (1953, 230, 231) have proceeded to interpret the genus Cryptomys in Southern Africa has been reviewed briefly in the chapter discussing aspects of C. hottentotus in the present work. Because of the fact that the species C. holosericeus is involved in that discussion, facts pertaining to C. holosericeus may briefly be recapitulated here.

Ellerman/...

Ellerman et.al. have divided the genus Cryptomys into a larger (C. mechowi - extralimital as far as the present work is concerned) and smaller species. The former reaches a H.B. length of 175 mm. and more (skull with incisors in adults 45-66 mm.) while the latter reaches a H.B. length of 180 mm. in only two specimens (both C. damarensis) in a very long series of skins. The greatest length of the skull (with incisors) rarely reaches 45 mm.

This smaller species is again subdivided into a smaller and larger species. The former has the greatest length of the ♂ skull (including incisors) only reaching 41 mm. once and rarely 40 mm., while in the Republic of South Africa the ♀ skulls rarely reach 38 mm. in length. These forms are thus taken in under C. hottentotus.

On the other hand, in the so-called larger species, the greatest length of the ♂ skull (with incisors) is above 40 mm., while the ♀ skull length is rarely below 38 mm. (i.e. holosericeus).

Ellerman et.al. (1953, 234), based on the definition of C. holosericeus given above, thus accept holosericeus as the only other species in Southern Africa (apart from C. hottentotus), and therefore placed 'G.' vryburgensis, C. orangiae, and C. vetensis as subspecies (races) under C. holosericeus, including the subspecies originally proposed by Roberts (1946, 316) named C. holosericeus valschensis.

Taxonomically speaking, this procedure points to a considerable degree of simplification

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of aspects relating to C. holosericeus in South Africa. It will be evident that I have largely followed this classification and is therefore in full accord of the proposals postulated by Ellerman et.al.

It could be, however, that Ellerman et.al. have largely followed Roberts (1951, 393) in these concepts. In his now classical work, 'The Mammals of South Africa' (1951), Roberts had already demoted all specimens originally credited with specific rank to subspecific level under the nominate species C. holosericeus, viz. Cryptomys holosericeus holosericeus (=Georychus holosericeus), C.h. vryburgensis (= Georychus vryburgensis), C.h.orangiae (= C.orangiae) and C.h. vetensis (= C. vetensis) while retaining the subspecific status of C.h. valschensis as originally proposed by Roberts in 1946.

The present author is inclined to simplify the picture even further by not acknowledging any subspecies, but to interpret C. holosericeus as a variable monotypic species.

Unfortunately, virtually no material of C. holosericeus collected at or near the supposed type locality is available for study in the present analysis. Only one skin, collected at Graaff-Reinet is available in the Albany Museum collection and in this study specimen the skull is inside the skin, while there are no measurements concerning the H.B., T. and H.F. lengths. The colour and size of the animal fall within the range of variation encountered in Cryptomys hottentotus, and must therefore be regarded as belonging to this species.

Therefore, a statistical comparison between specimens from the supposed type locality of

holosericeus and other localities could not be undertaken. It was however possible, in some instances to compare parameters of the different subspecies.

Table 13.1: Comparison of certain skull measurements in Vryburg and Bothaville samples of Cryptomys holosericeus (♀♀):

Measurement	Vryburg M_1	SD_1	Bothaville M_2	SD_2	C.D.	% J.N.O.
C.B.	33.8 mm.	2.691	32.2 mm.	2.841	0.28	<< 75%
L.J.	22.3 mm.	2.080	21.2 mm.	1.954	0.27	<< 75%
Z.W.	24.7 mm.	2.519	22.7 mm.	1.825	0.46	<< 75%

On closer inspection of Table 13.1 above, it is clear that C.h. vryburgensis and C.h. valschensis from Vryburg and Bothaville respectively, are decidedly not subspecifically distinct when some skull measurements in adult ♀♀ are compared. In these (and other measurements), a J.N.O. of far less than 75% is obtained, i.e. very much below the level of conventional subspecific separation (See also fig. 13.2).

Unfortunately, no further similar comparisons could be made in view of the fact that samples from other localities were either not homogeneous (i.e. juveniles and adults) or the samples of such populations were too small for statistical manipulation.

However, a comparison of the mean values for H.B. length, C.B. length and L.J. length in adult males from Taaiboschspruit, Bothaville and Vryburg was made as is shown in Table 13.2.

Table/...

Table 13.2: Comparison of mean values for H.B., C.B. and L.J. lengths in C. holosericeus.

Measure-ment	Taaiboschspruit	Bothaville	Vryburg
H.B.	M=136 mm. (n=4)	M=135 mm. (n=9)	M=135mm.(n=2)
C.B.	M=34.0mm. (n=4)	M=35.5mm. (n=9)	M=33.1mm.(n=3)
L.J.	M=22.3mm. (n=4)	M=24.0mm. (n=9)	M=22.1mm.(n=3)

As will be seen, these figures compare remarkably well, again pointing to the possible equivalence of C.h. vetensis, C.h. valschensis and C.h. vryburgensis. It is a pity that the comparable samples of Vryburg and Taaiboschspruit are so small, and I am convinced of the fact that if more material becomes available for study, the existing differences will be further diminished.

It may have been noticed that nothing as yet has been said about the inclusion of Cryptomys hottentotus bigalkei and Cryptomys orangiae (i.e. C. holosericeus orangiae) as synonyms under C. holosericeus, and this procedure therefore requires some explanation.

Roberts (1924, 73) described a new species, Cryptomys bigalkei (type locality Glen, north of Bloemfontein) on four mole-rats collected by R. Bigalke at Glen on July 14th 1921. According to the original description, these specimens were seemingly allied to C. 'cradockensis' (i.e. C. hottentotus as far as the present work is concerned) but there is a dark obscure dorsal line along the back. The face is dark with pale buffy white spots over the ears and eyes, and the cheeks are yellowish buffy showing up

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clearly against the general dark colouration of the face (Roberts, 1924, 73).

The H.B. lengths in both an adult ♂ and ♀ specimen (the latter being the type specimen) were given as 125 mm. and 116 mm. respectively, while the zygomatic width measurements were given as 28.3 mm. and 24.0 mm. respectively.

Roberts (1951, 391), however, demoted the species rank credited to this animal to subspecific rank in 1951 (interpreting bigalkei as a subspecies of hottentotus), while Ellerman et.al. (1953, 233) followed the same procedure. In 1951 Roberts described bigalkei as similar in colour to the typical form (i.e. hottentotus hottentotus), ".... but larger in size and the grinding teeth larger, the hindfoot longer".

Roberts (1926, 259) described a second new species from the same locality (i.e. Glen) which he named Cryptomys orangiae. The colour in this species was described as uniform buffy in both sexes (in this respect like other members of the C. holosericeus group) but differing from C. holosericeus in having the nasals straight, not pointed, nor bulging out at the sides. The dimensions of a pair fully adult, old specimens were given as follows:

	♂	♀
H.B.	150 mm.	140 mm.
H.F.	26 mm.	24 mm.

Other measurements were also given, which could not be used for comparison, due to the fact that they are not considered for the purposes of the present work.

Subsequently/...

Subsequently, in 1951, Roberts (1951, 393) also demoted the species orangiae to subspecific rank under C. holosericeus holosericeus, while Ellerman et.al. (1953, 235) followed the same procedure.

Both the type specimens of C. bigalkei and C. orangiae are housed in the Transvaal Museum and I had the opportunity to see and compare the specimens. After comparison, I have come to the tentative conclusion that there seems to be no justification for specific or subspecific separation between bigalkei and orangiae on the one hand or to separate the specimens from Glen specifically or subspecifically from holosericeus. This tentative conclusion is based on aspects to be presented in tabular form below.

Table 13.3: A comparison of measurements of C.hottentotus, C. bigalkei, C. orangiae and C. holosericeus indicating a closer relationship of orangiae and bigalkei to holosericeus than to hottentotus.

♂♂:(Adult):

Measurement	C.hottentotus	C.bigalkei	C.orangiae	C.holosericeus
H.B.	105-150 mm. (M= 120 mm.)	125 mm.	150 mm.	125-160 mm. (M= 141 mm.)
T.	17-27 mm. (M= 22 mm.)	25 mm.	19 mm.	19-30 mm. (M= 24 mm.)
H.F.	18-25 mm. (M= 21 mm.)	22 mm.	26 mm.	19-27 mm. (M= 24 mm.)
I.W.	6.2-7.7 mm. (M= 6.7 mm.)	7.5 mm.	-	6.8-7.9 mm. (M= 7.2 mm.)
Z.W.	19.1-28.0 mm. (M= 22.8 mm.)	28.3 mm.	-	21.1-28.3 mm. (M=25.4 mm.)
U.T.R.	4.5-6.1 mm. (M= 5.1 mm.)	6.0 mm.	-	5.3-6.8 mm. (M= 5.9 mm.)

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L.J.	17.2-25.3 mm. (M= 20.6 mm.)	24.7 mm.	-	21.1-25.9 mm. (M= 23.8 mm.)
L.T.R.	4.2-6.1 mm. (M= 5.2 mm.)	5.8 mm.	-	5.3-7.1 mm. (M = 6.2 mm.)
♀♀: (Adult):				
H.B.	100-160 mm. (M= 119 mm.)	116 mm.	140 mm.	125-145 mm. (M= 138 mm.)
T.	17-26 mm. (M = 21 mm.)	-	19 mm.	18-28 mm. (M= 23 mm.)
H.F.	17-25 mm. (M= 21 mm.)	20.5 mm.	24.0 mm.	18-28 mm. (M= 22 mm.)
I.W.	6.0-7.5 mm. (M= 6.6 mm.)	7.3 mm.	7.5 mm.	7.1-7.9 mm. (M= 7.2 mm.)
Z.W.	18.4-25.3 mm. (M= 22.0 mm.)	24.0 mm.	25.6 mm.	21.4-24.7 mm. (M= 23.4 mm.)
U.T.R.	4.6-5.9 mm. (M= 5.1 mm.)	6.3 mm.	6.0 mm.	5.2-6.1 mm. (M= 5.8 mm.)
L.J.	16.9-24.1 mm. (M= 20.2 mm.)	21.6 mm.	23.6 mm.	19.8-22.7 mm. (M= 21.4 mm.)
L.T.R.	4.3-6.0 mm. (M= 5.1 mm.)	6.2 mm.	6.1 mm.	5.6-6.7 mm. (M= 5.9 mm.)

Unfortunately this data could not be manipulated statistically in view of the fact that comparable samples of populations under discussion were too small.

When the measurements given in the table above are considered, it becomes evident that both species, bigalkei and orangiae, show a greater degree of correspondence with C. holosericeus than to C. hottentotus, especially as far as the measurements of I.W., Z.W., U.T.R., L.J. and L.T.R. (♂♂) are concerned, while there is a great correspondence in the ♀♀ concerning the I.W., Z.W., U.T.R., L.J. and L.T.R. between bigalkei and orangiae. This latter fact

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points to the possible equivalence of the two species.

Although Roberts (1926, 259) has stated that orangiae differs from C. holosericeus in the structure of the nasals, I am not inclined to accept this difference as being of diagnostic value in view of the great amount of individual variation found in the structure of the nasals, even within the holosericeus group. Similarly, the colour of orangiae was described as being slightly lighter yellowish than the typical form (i.e. holosericeus) (Roberts, 1951, 393), the skull of about the same size (although the condyles projected further backwards), while the hind-foot is supposed to be slightly longer.

C. bigalkei was described (Roberts, 1924, 73) as having an obscure dark dorsal line: this feature is, however, found constantly in specimens representing C. holosericeus, while it is also seen occasionally in C. hottentotus. This characteristic is therefore not of diagnostic value either.

If it is accepted that C. orangiae is a synonym of C. bigalkei, which in turn is a synonym of C. holosericeus, the emerging pattern of distribution of these species involved becomes clear and logical. This eliminates the necessity of regarding the possibility of two species existing side by side in the Glen area north of Bloemfontein (Ellerman et.al. 1953, 230), while the range of C. holosericeus is extended logically to the south. Roberts had already indicated (1926, 259) that the species orangiae extended westwards from Glen in the sandveld a little to the south of Bothaville (the type locality of

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C. holosericeus valschensis), whereas he also stated that specimens obtained near Bothaville, differing but slightly from the Bothaville specimens (as well as those collected in the Parys district), could probably be referred to C. bigalkei.

To my mind, C. holosericeus has been grossly oversplit by Roberts. By synonymizing these forms, a clearer picture emerges concerning the species holosericeus, and it also removes the difficulty of explaining the occurrence of two species (i.e. bigalkei and orangiae) under identical ecological conditions (e.g. at Glen), while it is also not clear what factors could possibly be effective for the development of at least five subspecies (i.e. holosericeus, orangiae, vetensis, valschensis and vryburgensis) in the north-western Orange Free State and adjacent areas.

Further considerations of the various original descriptions given for the supposed different species all point to the fact that they are not in reality different. For example, Cryptomys vetensis was described as the ♂♂ being slightly, the ♀♀ much darker than orangiae (Roberts, 1926, 259) with body and skull proportions as in orangiae, but the molars being decidedly larger. These differences are however average rather than absolute and difficult to define when all forms are taken into account. Similarly, the specimens from Vryburg were described as grey-brown, but if the specimens are considered individually, and placed amongst specimens from other localities, it is no easy matter to identify the odd specimen.

Reviewing/...

Reviewing the discussion in the above paragraphs, the indications seem to point to the fact that C. holosericeus is in fact not a good and valid species. If all the factors are taken into account, the possibility exists that C. holosericeus may eventually be synonymized with C. hottentotus. This possibility may rest largely on the following arguments:

(a) Within different populations (colonies) of C. hottentotus, one often encounters large specimens, which are well beyond the limits of size variation for this species. They tend to fall within the range of size variation exhibited by C. holosericeus. Such individuals are encountered in localities including Wolseley, Grootvadersbosch, Knysna and possibly Graaff-Reinet, all within the geographical range of C. hottentotus. This applies to both post-cranial and cranial measurements. It may therefore point to a possible equivalence between the two species as far as size measurements are concerned.

(b) The overall correspondence in colouration of the pelage in C. hottentotus and C. holosericeus is striking. The exact colour tint exhibited in the former species can be shown to exist in the latter. Although holosericeus tends to be yellower than hottentotus when a number of specimens are seen simultaneously, this difference in colour seems to be average rather than absolute. This feature may thus also point to the conspecific nature of the two species.

(c) There is a certain amount of uncertainty concerning the limits of geographical distribution of hottentotus and holosericeus. As interpreted

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in the present work C. hottentotus occurs in an area to the south of Bloemfontein, while C. holosericeus occurs at Glen, to the north of Bloemfontein. At present, it is not possible to draw a line indicating the limits of each species. Therefore it is not possible to determine the degree of overlap existing between hottentotus and holosericeus.

On the other hand, if holosericeus is interpreted as a synonym of hottentotus, the range of distribution of hottentotus would logically be extended to the north, eliminating the break in distribution which presently exists in the geographical range of hottentotus (See fig. 11.1.).

(d) Finally, if hottentotus and holosericeus were interpreted as the same species, it would eliminate the necessity of explaining the occurrence of two species and subspecies at a certain locality (eg. Glen), occurring under identical environmental conditions, i.e. C. hottentotus bigalkei and C. holosericeus orangiae.

The step of synonymizing holosericeus with hottentotus has however not been taken in the present work, but it may be incipient. This reservation is largely based on the following considerations:

(i) The species holosericeus dates back to 1843 and is therefore a well "established" species. It could well be that study skins and skulls are available which would justify its retention as a separate species.

(ii) I have not seen the type specimen (if in existence) personally, and

(iii) I find it advisable to withold the synonymizing of holosericeus with hottentotus until further details (based on future research) will become

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available which would probably finalize the question.

Biological:

Very little is known about the biology of C. holosericeus and Roberts (1951, 393) states that their habits are like those of C. hottentotus. It may just be pointed out that the work done by Eloff (1951, 1952, etc.) on behavioural aspects of C. bigalkei would imply that in fact C. holosericeus was considered if the taxonomic interpretation presented in the present work is accepted.

Phylogenetic:

C. holosericeus is probably a comparatively evolved species, which is reflected in its large size. Its closest relative appears to be C. hottentotus resembling it in colour and number of mammae. It is, however, much larger than C. hottentotus and shows a smaller range of geographical distribution. This may point to a specialized genotype, highly adapted to certain (possibly specialized) environmental conditions. This possibility may explain the relatively limited distribution pattern exhibited by C. holosericeus.

List of localities:

Angra Pequina, Bothaville, 22 (TM), Barkley West, 6 (MM, SA, AM), Bloemhof, 6 (TM), Braklaagte, Parys, 2 (TM), Coalbrook, 2 (TM), Fourteen Streams, 1 (TM), Glen, 8 (TM), Junction, Vet-Sand rivers, 1 (NM), 'Kuruman division', 1 (SA), Maquassie, 2 (TM), Modder river, 3 (SA), Odendaalsrust, 5 (TM), Rietpan, Kimberley, 1 (MM), Sand river, 1 (NM), Taaiboschspruit, Vet river, 5 (TM), Vryburg, 17 (TM, AM).