BAIYANKAMYS HINTON, 1943 (*MURIDAE, HYDROMYINAE*) A NEW GUINEA RODENT GENUS NAMED FOR AN INCORRECTLY ASSOCIATED SKIN AND SKULL (*HYDROMYINAE, HYDROMYS*) AND MANDIBLE (*MURINAE, RATTUS*)

by

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Deux individus sont représentés dans le matériel type de *Baiyankamys shawmayeri* Hinton, 1943. La peau type et le crâne type de *B. shawmayeri*, qui appartiennent à un individu de *Hydromys habbema* Tate et Archbold, 1941 sont choisis comme le lectotype de *Baiyankamys shawmayeri* Hinton. La mâchoire inférieure type de *B. shawmayeri* appartient à un individu de *Rattus niobe* (Thomas, 1906) et devient un paralectotype de *Baiyankamys shawmayeri* Hinton. En conséquence, *Baiyankamys shawmayeri* Hinton, 1943 est un synonyme subjectif plus récent de *Hydromys habbema* Tate et Archbold, 1941 et *Baiyankamys* Hinton, 1943 est un synonyme subjectif plus récent de *Hydromys* Geoffroy, 1804.

The genus *Baiyankamys* was erected by Hinton (1943, p. 552) for a skin, skull, and mandible believed by him to belong to a single individual (B.M. 1947.1173 = n°. 713 of Hinton) and named by him *Baiyankamys shawmayeri* (1). The locality given by Hinton for this material is Baiyanka, Purari-Ramu divide, south-east Bismarck Range, north-east New Guinea. Subsequent authors (Ellerman, 1949, pp. 94-5 ; Tate, 1951, p. 226 ; Laurie and Hill, 1954, p. 136) accept *B. shawmayeri* as a valid species and retain *Baiyankamys* as a genus. No other species has been placed in *Baiyankamys*.

(1) The specific name is spelt by Hinton (1943, p. 552) in two ways, *shawmeyeri* and *shawmayeri*. Tate (1944, pt. 1, p. 10) first published the name as *shawmeyeri* but subsequently spells it *shawmayeri* (1951, p. 226). The latter spelling, used also by Ellerman (1949, pp. 94-5), Laurie and Hill (1954, p. 136), Brass (1964, p. 184), and Walker *et al.* (1964, p. 971), is undoubtedly intentional by Hinton and is in current use. Attention has not previously been drawn to this use by Hinton of two different spellings for the specific name in the original description of *Baiyankamys shawmayeri*. The expression « first revisor » included but not defined in article 32 (B) International Code of Zoological Nomenclature (Multiple original spellings), is rigidly contrued by me to accord with the definition given for it in article 24 (A) (I) and the spelling *shawmayeri* is selected here by me as the correct original spelling of the specific name.

Previous authors have failed to note that two individuals are represented in Hinton's type material of *B. shawmayeri*. The morphology, occlusal relationships, and colour of the type mandible together clearly indicate that it belongs to an individual (B.M. 1947. 1370) of *Rattus niobe* (Thomas, 1906) from Tapu, upper Ramu River plateau, north-east New Guinea. The mandible incorrectly associated in the British Museum (Natural History) collections with the skin and skull of the *Rattus niobe* individual belongs with the type skin and skull of *B. shawmayeri*. This second specimen is an individual of *Hydromys habbema* Tate and Archbold, 1941. Both specimens were included in a collection of New Guinea mammals made by Mr. F. Shaw Mayer in 1940 and presented by Sir John Ellerman Bart. to the British Museum (Natural History).

Comparison with *Hydromys habbema* Tate and Archbold, 1941

The type skin and skull (B.M. 1947.1173) of *B. shawmayeri* and mandible (B.M. 1947.1370) belonging with them have been compared with a topotypical specimen of *Hydromys habbema* (A.M.N.H. 110060, male from altitude 3225 metres, Lake Habbema, west New Guinea, collected by Mr. W. B. Richardson, August 20 th., 1938) and with a second, and only other, British Museum (Natural History) specimen of *H. habbema* (B.M. 1953.309, male from altitude 8000 feet, Tomba, south spurs of Hagen Range, Central Highlands, east New Guinea, collected by Mr. F. Shaw Mayer, February 13th., 1951). The webbing extends between all the digits of the hind feet in each skin but there is variation between the three specimens in its degree of development; Hinton notes only that the middle digits of the hind feet of his type are slightly webbed. Variation occurs also in fur colour while in the cranium the interparietal is noticeably smaller in Hinton's specimen (4.4 mm × 6.6 mm) than in the *habbema* topotype (5.5 mm × 9.5 mm) and Tomba individual (5.8 mm × 9.5 mm). However, these and other quantitative differences present are infraspecific in character and the type skin and skull of *B. shawmayeri* undoubtedly belong to an individual of *H. habbema*. Previously, Tate (1951, p. 226) concluded after examining Hinton's type material that *B. shawmayeri* is externally much like *Hydromys habbema*.

Further specimens of *B. shawmayeri* are noted by Brass (1964,

p. 184) but these were later found by Mr. H. M. Van Deusen (pers. comm.) to be individuals of *Hydromys habbema*.

Measurements for the type skin and skull of *B. shawmayeri* and correctly associated mandible are recorded in Tables 1 and 2. The skull and mandible are illustrated in Plate II, figs. 1-4, 11, 12. Measurements for the skin and skull are provided also by Hinton (1943, p. 553-4) and Tate (1951, p. 356). Walker *et al.* (1964, p. 971) figure the skull (in lateral view) and the skin.

Comparison with *Rattus niobe* (Thomas, 1906)

The skin and skull of B.M. 1947.1370 and type mandible (B.M. 1947.1173) of *B. shawmayeri* have been compared with the skin, skull, and mandible of the holotype of *Rattus niobe* (B.M.5.11.28.7, from Owgarra, Angabunga River, south-east New Guinea, collected by Mr. A. S. Meek, November 15 th., 1904). These two individuals are conspecific.

Ellerman (1949, p. 96) notes that « There is a skull in the new Shaw Mayer collection which has been received from New Guinea in which apparently the tooth formula is 3/2. The skull is badly damaged, but may represent a species which is *Leptomys*-like, but

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Explanation of Plate III

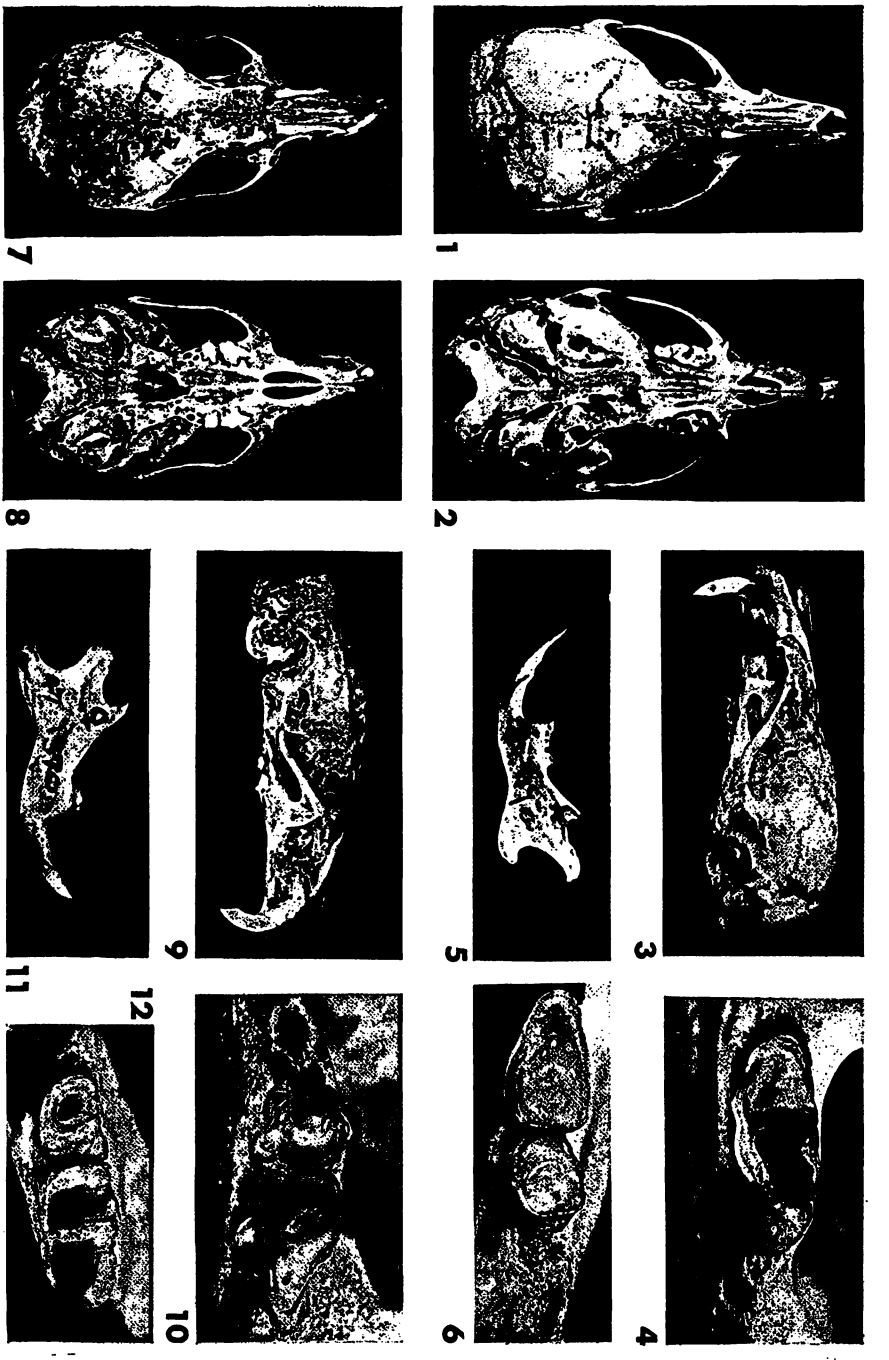
Figs. 1-4. — *Hydromys habbema* Tate and Archbold. B.M. 1947. 1173. Skull (type skull of *Baiyankamys shawmeyeri* Hinton) : 1, dorsal view ; 2, ventral view ; 3, left lateral view ; 4, occlusal view of left molars.

Figs. 5-6. — *Rattus niobe* (Thomas). B.M. 1947. 1173. Mandible (type mandible of *Baiyankamys shawmeyeri* Hinton) : 5, labial view of left ramus ; 6, occlusal view of left molars (M_3 missing).

Figs. 7-10. — *Rattus niobe* (Thomas). B.M. 1947. 1370. Skull (« ? *Leptomys* (*Paraleptomys*) » of British Museum (Natural History) mammal register) : 7, dorsal view ; 8, ventral view ; 9, right lateral view ; 10, occlusal view of right molars (M^3 missing).

Figs. 11-12. — *Hydromys habbema* Tate and Archbold. B.M. 1947. 1370. Mandible (« ? *Leptomys* (*Paraleptomys*) » of British Museum (Natural History) mammal register) : 11, labial view of right ramus ; 12, occlusal view of right molars.

Skull B.M. 1947. 1173 and mandible B.M. 1947. 1370 belong to the one individual of *Hydromys habbema* while skull B.M. 1947. 1370 and mandible B.M. 1947. 1173 belong to the one individual of *Rattus niobe*. The molars in both individuals are badly worn. Figs. 1-3, 5, 7-9, 11 × 1.5 approx. ; figs. 4, 12 × 6 ; fig. 6 × 7 1/2 ; fig. 10 × 7.



intermediate in tooth formula between *Paraleptomys* and *Leptomys* ». B.M.1947.1370 is identified as « ? *Leptomys* (*Paraleptomys*) » in the British Museum (Natural History) mammal register and is apparently the specimen referred to by Ellerman since a search through the rodent collections in the British Museum (Natural History) failed to produce a further Shaw Mayer specimen fitting his description. Neither B.M.1947.1370 nor Ellerman's note are mentioned by Laurie (1952) in her paper on the Shaw Mayer mammal collections in the British Museum (Natural History).

Measurements for the skin and skull of B.M.1947.1370 and correctly associated mandible are recorded in Tables 1 and 2. The skull and mandible are illustrated in Plate II, figs. 5-10.

Lectotype selection

Two species, *Hydromys habbema* Tate and Archbold and *Rattus niobe* (Thomas), are represented in Hinton's type material of *Baiyankamys shawmayeri* and lectotype selection is necessary if nomenclatural stability is to be attained. Therefore, the type skin and skull (B.M.1947.1173) are selected here as the lectotype of *Baiyankamys shawmayeri* Hinton, 1943. The type mandible (B.M. 1947.1173), belonging to an individual of *Rattus niobe* (Thomas, 1906), becomes a paralectotype of *Baiyankamys shawmayeri* Hinton, 1943. Thus, *Baiyankamys shawmayeri* Hinton, 1943 is a junior subjective synonym of *Hydromys habbema* Tate and Archbold, 1941 and *Baiyankamys* Hinton, 1943 is a junior subjective synonym of *Hydromys* Geoffroy, 1804. Should it be concluded, after further study, that *H. habbema* is generically distinct from the rather different type species of *Hydromys*, *Hydromys chrysogaster* Geoffroy, 1804, the name *Baiyankamys* will be available for it.

Molar formulae in the *Hydromyinae*

Baiyankamys is described by Hinton (1943, p. 552) as « A small Hydromyine Rat, modified for aquatic life, with 2/3 cheek-teeth, and with proportionately shorter palate than in allied genera. The dental formula appears to be unique in the whole family *Muridae* ». This genus has been thought to represent an intermediate stage in

molar reduction, within the *Hydromyinae*, between *Leptomys* and *Chrotomys* with molar formula 3/3 and *Paraleptomys, Pseudohydromys, Microhydromys, Neohydromys, Parahydromys, Hydromys, Crossomys, Xeromys,* and *Celaenomys* with molar formula 2/2 (a further genus, *Mayermys*, has the molar formula 1/1). This concept of *Baiyankamys* is incorrect and disparity in the number of molars developed in the upper and lower jaws is not known to be typical of any known hydromyine species. However, it occurs as a variant within *Leptomys* since the molar formula of a female individual (B.M.29.5.27.23) of *Leptomys ernstmayri* Rümmler, 1932 from altitude 1000 metres, Arfak Mountains, west New Guinea is 3/2 while that of a male *L. ernstmayri* (B.M.29.5.27.22) with the same locality data is 3/3 (both individuals collected by Mr. F. Shaw Mayer, July 19 th., 1928). The latter molar formula is indicated for *Leptomys ernstmayri* and *Leptomys elegans* Thomas, 1897 by Rümmler (1932, pp. 134-5 & 1938, pp. 12, 29-33) and again by Tate (1951, p. 222) for *Leptomys elegans* within which he includes *Leptomys ernstmayri*. The absence of M_3 in B.M.29.5.27.23 supports Tate's contention (1951, p. 222) that a tendency to lose the last molars may well be present in *Leptomys*.

TABLE 1

	Hydromys habbema B.M. 1947. 1173	*Rattus niobe* B.M. 1947. 1370
Head and body	146	123
Tail	176	135
Hind foot	36.5	27
Ear (from notch)	13	17.5

External measurements (in millimetres) for the two individuals represented in the type material of *Baiyankamys shawmayeri* Hinton. Measurements transcribed from museum labels.

B.M. 1947. 1173, male from altitude 6500 feet, Baiyanka, Purari-Ramu divide, south-east Bismarck Range, north-east New Guinea, collected by Mr. F. Shaw Mayer, June 11 th., 1940, collector's no. 713, « Caught by a stream in the open grass country » (type skin of *B. shawmayeri*). B.M. 1947. 1370, female — mammary formula 1 — 2 = 6, from altitude 6000 feet, Tapu, upper Ramu River plateau, north-east New Guinea, collected by Mr. F. Shaw Mayer, May 2nd., 1940, collector's no. 601 (« ? *Leptomys* (*Paraleptomys*) » of British Museum (Natural History) mammal register).

TABLE 2

	Hydromys habbema skull B.M.1947.1173 mandible B.M.1947.1370	*Rattus niobe* skull B.M.1947.1370 mandible B.M.1947.1173
Maximum length of skull	34.4	—
Condylobasal length	34.1	30.2
Basal length	30.9	28.1
Zygomatic width	17.1	15.0
Interorbital width	5.3	5.8
Maximum width of rostrum	6.3	—
Nasal length measured from anterior extremity of nasal to posterior extremity of internasal suture	10.4 approx.	—
Maximum width across nasals	3.2	—
Width across nasals between naso-frontopremaxillary points	1.3	2.1
Length of interfrontal suture	8.9	10.3
Length of interparietal suture	5.8	5.8
Maximum width across parietals	14.8	14.0
Interparietal length measured from posterior extremity of interparietal suture to posterior extremity of interparietal	4.4	4.8
Width across interparietal between parietointerparietooccipital points	6.6	10.0
Minimum width across zygomatic plate	1.4	2.0
Palatal length	17.8	17.5 approx.
Length of diastema	8.5	8.6
Length of incisive foramen	3.5	4.8
Width across incisive foramina	2.2	2.2
Length from posterior extremity of incisive foramen to posterior of palate	8.0	7.1 approx.
Width of palate between anterointernal roots of M^1	3.7	3.3
Length of bulla	4.4	4.9
M^{1-3} Length	—	6.0
M^{1-2} Length	4.8	—
M^1 Length × width	3.5 × 1.8	— × 1.9
M^2 Length × width	1.6 × 1.3	— × 1.7
Length of mandibular ramus from tip of incisor to posterior extremity of condyle measured with ventral surface of ramus horizontal	22.4	21.3

	Hydromys habbema skull B.M.1947.1173 mandible B.M.1947.1370	*Rattus niobe* skull B.M.1947.1370 mandible B.M.1947.1173
Height of condyle above ventral surface of mandibular ramus measured with ventral surface of ramus horizontal	7.6	6.6
M_{1-3} Length	—	5.7
M_{1-2} Length	5.1	—
M_1 Length × width	3.2 × 1.8	2.5 × 1.3
M_2 Length × width	2.0 × 1.5	—

Skull and mandibular measurements (in millimetres) for the two individuals represented in the type material of *Baiyankamys shawmayeri* Hinton. B.M. 1947. 1173 — type skull and mandible of *B. shawmayeri*. B.M. 1947. 1370 — skull and mandible of « ? *Leptomys* (*Paraleptomys*) » of British Museum (Natural History) mammal register.

The left nasal and mandibular ramus of *H. habbema* and right mandibular ramus of *R. niobe* have been measured while measurements for the other paired structures were taken on the right side of the two skulls. Tooth measurements do not include roots. The figures recorded for the length of the upper and lower molar rows of *R. niobe* were obtained by measuring from the anterior extremity of the alveolus of the anterior root of the first molar to the posterior extremity of the alveolus of the posterior root of the third molar at the level of the alveolar border. Measurements taken by vernier calipers graduated to read to 0.05 mm.

ACKNOWLEDGEMENTS

The Trustees and Director of the British Museum (Natural History) kindly granted me permission to study the rodent collections and provided working facilities for me at the Museum. Mr. J. E. Hill, Experimental Officer, Mammal Section, British Museum (Natural History) facilitated my examination of the problem dealt with in this paper. Mr. H. M. Van Deusen, Assistant Curator, Archbold Collections, The American Museum of Natural History, arranged the loan to me of the topotypical specimen of *H. habbema*. The photographs were provided by the British Museum (Natural History).

SUMMARY

The type skin and skull of *Baiyankamys shawmayeri* Hinton, 1943 belong to an individual of *Hydromys habbema* Tate and Archbold, 1941 while the type mandible belongs to an individual of *Rattus niobe* (Thomas, 1906).

The type skin and skull are selected as the lectotype of *Baiyankamys shawmayeri*. *Baiyankamys shawmayeri* Hinton, 1943 thus becomes a junior subjective synonym of *Hydromys habbema* Tate and Archbold, 1941.

Disparity in the number of molars developed in the upper and lower jaws is not known to be typical of any known hydromyine species; its occurrence as a variant within *Leptomys* is recorded.

In the original description of *Baiyankamys shawmayeri* Hinton spells the specific name in two ways, *shawmeyeri* and *shawmayeri*; of these, *shawmayeri* is correct.

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