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RESULTS OF THE ARCHBOLD EXPEDITIONS. NO. 54

THE MARSUPIAL GENUS *PSEUDOCHEIRUS* AND ITS SUBGENERA

BY G. H. H. TATE

The second and third Archbold Expeditions to New Guinea, undertaken in 1936 and 1938, have added substantial numbers of specimens to the collection of *Pseudocheirus* already contained in the American Museum of Natural History. Furthermore, a number of specimens from northern Queensland, collected by Miss Gabriele Neuhäuser, and the important series obtained by the late Henry C. Raven in Queensland, New South Wales, and Tasmania, both lots previously unstudied, have furnished valuable data. Loans of material by Dr. Remington Kellogg, the United States National Museum, and Miss Barbara Lawrence, the Museum of Comparative Zoölogy, to both of whom I wish to express my deep thanks, have further swelled the source material upon which this paper is based. I am particularly indebted to the authorities in the European and Australian museums, visited in 1937, for granting me facilities to study and photograph many of the type specimens and others in their charge.

Measurements, particularly of the teeth, of nearly all the types and as far as possible of substantial series of topotypes and others are shown at the end of this paper. One new race, *P. herbertensis cinereus*, is described.

The word *Pseudocheirus* [*sic*] was twice used by Ogilby (September, 1837a; 1837b). It was proposed in proper form for a new subgenus of *Phalangista*. Later citations by Waterhouse (1846) and Thomas (1888), using the spelling *Pseudochirus*, relate to a *nomen nudum* (Ogilby, 1836). Other authors, including even Palmer (1904), continued to employ that form of spelling, which under the Rules of the International Commission on Zoological Nomenclature[1] is not permissible.

In the present paper, *Pseudocheirus* is held to comprise the following subgenera: *Pseudocheirus* (including *Pseudochirulus*), *Pseudochirops*, *Petropseudes*, and *Hemibelideus*. These subgenera have very unequal values and relationships. *Petropseudes* is considered to be a derivative of *Pseudochirops*. *Hemibelideus* may be a much older relict from the same line. *Pseudochirops* and *Pseudocheirus*, though distinct, share common ancestry. Two other full genera are related to the foregoing assemblage, *Schoinobates*, the pseudocheiroid flying phalanger, and *Phascolarctos*, the koala. The whole, in which possibly fossil genera should be included (I have not examined the fossil forms), constitutes a selenodont subfamily of the family Phalangeridae.

KEY TO THE SUBGENERA OF *Pseudocheirus*

1. Palate unbroadened; crown of i^2 little or not at all lengthened in proportion to that of i^3. . *Pseudocheirus*
   Palate markedly broadened; crown of i^2 about half as long again as that of i^3 2
2. Tail with erect hairs almost to the tip; skull with inferior wall of audital meatus inflated and cellular . . . . . *Hemibelideus*
   Tail with hairs of terminal fourth appressed; inferior wall of meatus solid 3

[1] Article 19 (Original orthography); Article 35, Section a (ei and i synonymous; older spelling to take precedence).

3. Tail very much shorter than head and body; mastoid swellings exaggerated upward.....*Petropseudes*

Tail almost as long as head and body; mastoids more or less inflated, but not upward.....*Pseudochirops*

GEOGRAPHICAL DISTRIBUTION

The accompanying chart (fig. 1) shows a preponderance of species of *Pseudocheirus* in New Guinea and northern Australia and, in contrast, few species through the rest of forested Australia (with Tasmania). In no one part of high mountainous New Guinea are fewer than three species found. This number rises to five, perhaps six, in the Central Range of Netherlands New Guinea.

The southeastern part of the Central Range lacks the three western species, *caroli*, *pygmaeus*, and *albertisii;* but on the other hand, two of the species of eastern New Guinea, *corinnae* and *cupreus*, although present in the Mount Wilhelmina area, remain unrecorded from the western end of the Central Range and from Vogelkop. One of these, *corinnae*, is allied to the north Queensland species *archeri*.

A unique distributional pattern, still poorly substantiated, is seen in *albertisii*, which has thus far been taken in the Arfak and Weyland Mountains, near Sorong (extreme northwestern Vogelkop), on Japen Island in Geelvink Bay, at the Cyclops Mountains on the north coast, and near the Sepik River, probably in the mountains west of it. This pattern indicates for *albertisii* a western and northern distribution.

Four northern Queensland species are absent from Papua, but two of them, *peregrinus* and *archeri*, show much closer relationship to Papuan species than do the others, *herbertensis* and *lemuroides;* the last-mentioned is so strongly divergent as to be considered a monotypic subgenus (*Hemibelideus*). Both *herbertensis* and

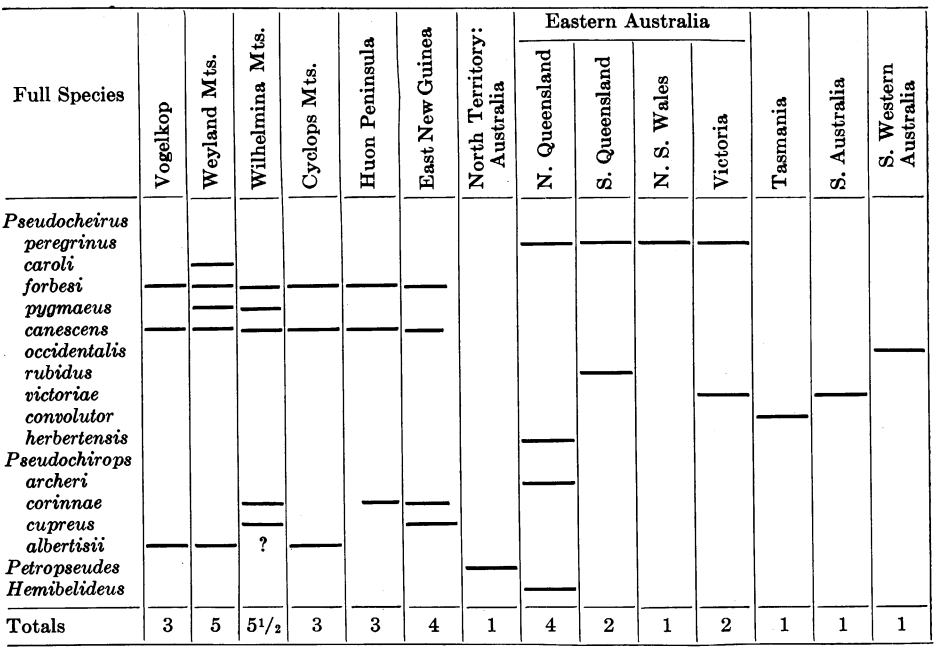

Fig. 1. Distribution of the species of the genus *Pseudocheirus*.

archeri show nearly identical restricted geographical ranges in northern Queensland, but *peregrinus*, if I am right in holding it to be conspecific with *laniginosus*, occupies almost the whole of eastern Australia.

The remaining Australian species, isolated in varying degrees both morphologically and geographically, comprise *rubidus* of southern Queensland, *victoriae* of southeastern Australia, *convolutor* of Tasmania and Flinders Island, *occidentalis* of extreme southwestern Australia, the subfall into the hands of coast-dwelling natives who may take them to islands in canoes.

The altitudinal ranges of most of the species in New Guinea include several thousands of feet. The species that dwells at the highest levels is the tiny *P. pygmaeus*, specimens of which have been collected as high as 12,000 feet. Conversely the lowest record for any of the species inhabiting the lower levels in New Guinea is 600 feet above sea level. In Australia, particularly in temperate Australia and Tasmania, this condition may not hold.

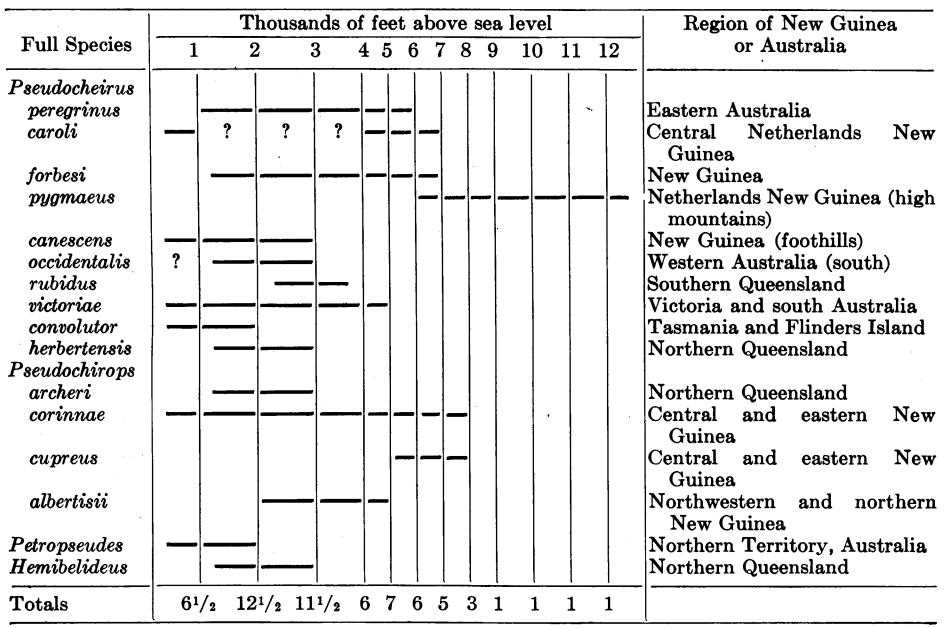

Fig. 2. Species density of the genus *Pseudocheirus*.

generically monotypic *dahli* of the Northern Territory, and *lemuroides* of northern Queensland.

One is struck by the tendency in virtually all species of *Pseudocheirus* to inhabit hilly country well above sea level and to be absent from coastal lowlands. This fact may account for the rarity of *Pseudocheirus* on islands,[1] in contrast to species of the ecologically and functionally similar genus, *Phalanger*. The animals are less likely to be carried out to sea on natural rafts or to

The number of species of *Pseudocheirus* occurring in successive 1000-foot altitudinal bands has been plotted (fig. 2). In studying that figure it must be remembered that some of these species, especially those of Australia, may be limited in their upward spread by absence of higher mountains carrying forested environment suited to their requirements. There seems to exist a critical level at about 7000 to 8000 feet, above which most of the species, even of New Guinea, do not occur. The high-altitude species, *pygmaeus*, found up to

[1] *P. canescens* on Salawatti; *P. albertisii* on Japen.

12,000 feet, diverges from all others by attaining its downward limit at about 6000 feet. (It is a member of a small, quite specialized, high-mountain fauna, which includes peculiar mountain-living species of *Peroryctes*, *Dorcopsis*, and several rodents.) The species of *Pseudocheirus* occurring next highest in New Guinea is *cupreus*, with altitudinal range between 5000 and 8000 feet.

existed from time to time in this area in the not very distant past.

The restriction of *Pseudochirops* to New Guinea and adjoining parts of Australia (*archeri* in northern Queensland, *dahli* in Northern Territory), presents a decided contrast to that of the widely dispersed subgenus *Pseudocheirus*. In the case of *Pseudochirops* one can hardly escape the conclusion that New Guinea, with Torresia,

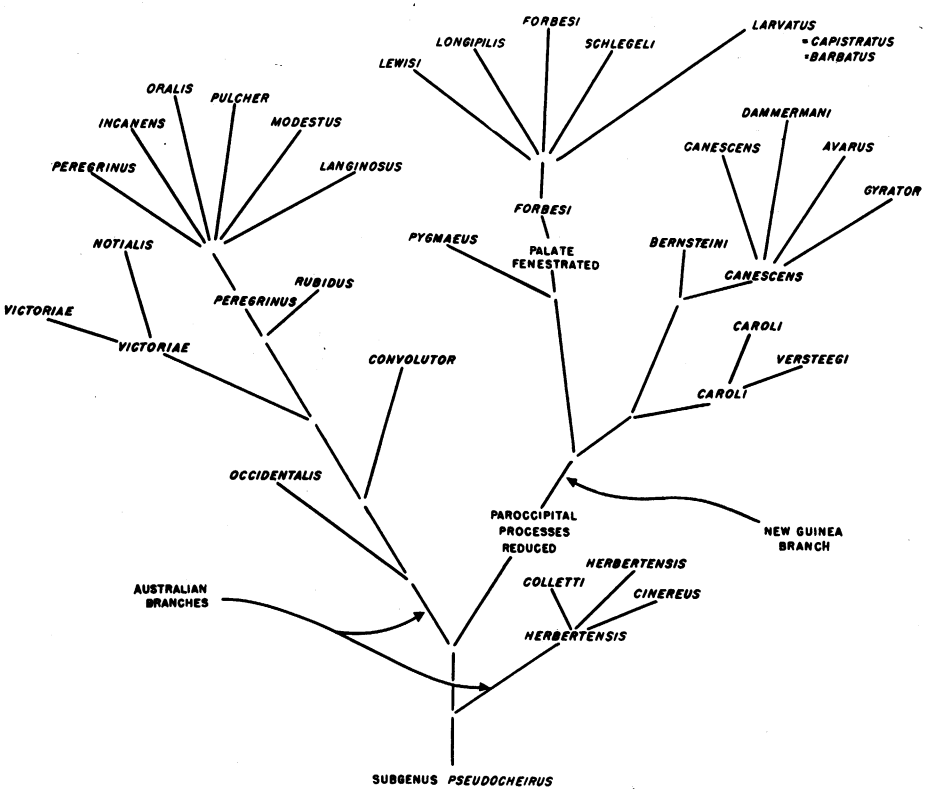

Fig. 3. Phylogenetic tree of the subgenus *Pseudocheirus*.

In the Torres area, between the southern spurs of the Leonard Murray Range and the northern ridges of the hills at the base of Cape York Peninsula, the total lack of hills, other than a very few scattered granite knobs a few hundred feet high, presents today an impassable barrier to migration of *Pseudocheirus*. This would be true even if the Torres Strait were dry land. Even so, communication must have served as the region in which the species evolved and gradually dispersed. The fairly close relationship of the mid-mountain *cupreus* of the south side of the central Papuan mountain system to *dahli*, inhabitant of rocky scrub near Darwin, calls for such a region of origin. A similar case is seen in the relationships of *corinnae* of mid-mountain New Guinea and *archeri* of northern Queensland.

In the subgenus *Pseudocheirus*, the relationships are less obvious. Of the ten specific groups recognized in this paper, four are Papuan and six Australian (including Tasmania). Relatively great uniformity of structure prevails throughout. Specializations of various sorts can be noted in *canescens* and *forbesi* of New Guinea and in *herbertensis*, *convolutor*, and *occidentalis* of Australia. This specialization expresses a degree of difference from typical *peregrinus* which is only a little greater than is shown by a number of other more closely allied species (fig. 3). At best, the differences are slight. Outstanding primitiveness appears in no part of the group. One gathers an impression of an extremely stable, very widely dispersed type of organism that at various periods during development has produced local variations of minor importance here and there throughout its range. The fact that one of its members extends upward to 12,000 feet suggests the completeness of environmental penetration as well as the antiquity of the subgenus.

SKULL STRUCTURE

Throughout the history of marsupial taxonomy, the presence or absence or relative size and proportions of those openings in the roof of the palate which lie between the palatal and maxillary bones have been cited by authors when distinguishing one species of a genus from another. Development of the openings in question appears to vary throughout marsupials of all taxonomic categories above the rank of subgenus. This fact shows up in genus after genus; the sizes of the said foramina are employed to help in distinguishing species or merely races from one another. Even in the American opossums of the genus *Marmosa* (all species possessing posterior palatal openings), the degree of such fenestral development has been utilized in classification (Tate, 1933). This character, though it must be used with care and judgment, is valuable in working with many Australian genera, including *Phalanger*, and particularly in the present genus *Pseudocheirus*. In this genus its taxonomic utility seems not to go higher than the species, and differences in the size of the openings seem most applicable to the distinction of geographical races.

Enlargement of the mastoid to form resonance chambers is a phenomenon repeated frequently in many of the marsupials and placentals. In *Pseudocheirus* it is the rule rather than the exception. Minimum development of this character is to be seen in *peregrinus*, *pygmaeus*, *convolutor*, etc.; in the subgenus *Pseudochirops* minimum enlargement occurs in *corinnae* and *archeri*. The usual course of development of such mastoid swelling is lateral and ventral, so that the total mastoid width equals or exceeds the total width across the meatal tubes, and confluence of the mastoid and alisphenoid enlargements beneath the skull is attained. In extreme cases posterior expansion is added, as in *P.* (*Pseudochirops*) *cupreus*, so that the mastoid chambers exceed the condyles backwards. Finally, dorsal expansion is seen also to have taken place in the case of *Petropseudes*, which appears relatively exaggerated by the otherwise flattened form of the skull. In *Hemibelideus* an extension of this cellular bony structure into the inferior wall of the meatal tube has occurred.

The paroccipital processes are typically (in the type species) somewhat slender, slightly buttressed toward the inner side of the bullae, and show smooth transition to the mastoid enlargements on their outer faces. Their length, taken from the level of the lower surface of the mastoids to the slightly knobbed tips, is about one-half of their distance apart. This general condition appears also in all the east Australian races of *peregrinus*. In other species modifications are found.

Shortening and thickening of the processes have developed in the two extreme southern species, *convolutor* of Tasmania and *occidentalis* of southwestern Australia; this is more pronounced in the latter, in which the length of the process below the mastoid is only 6 mm. in proportion to the

outer width across the paroccipitals, 22 mm., or 28 per cent. In the otherwise aberrant *P. herbertensis* the state of the paroccipitals is about as in *convolutor*.

In *forbesi* and *avarus* such reduction has advanced to 2:17.5, or 11 per cent; *caroli*, to 3:18, or 17 per cent; in *pygmaeus* to 1.7:10.5, or 16 per cent. Suppression of these structures is found only in species from New Guinea.

Turning to the subgenus *Pseudochirops*, we find the following proportions for these processes: *archeri*, 5.3:16.5, or 32 per cent; *corinnae*, 6.8:18.8, or 31 per cent; *cupreus*, 5.6:22, or 25 per cent; *albertisii*, 6:18, or 33 per cent. The apparent shortening in *cupreus* is probably due to enlargement of the mastoid swellings ventrally. No suggestion of extreme reduction such as appears in *forbesi*, *avarus*, and *pygmaeus* of the subgenus *Pseudocheirus* appears. In *Hemibelideus*, subgenus, the paroccipital processes, though not shortened, are also strongly buttressed posteriorly and somewhat compressed; the proportions, 5.5:15, or 37 per cent.

TAXONOMY

Subgenus Pseudocheirus

The skull is typically rather narrow (zygomatic width:condylobasal length, 58 to 60 per cent) and the orbits unbroadened (exception in *canescens*); palate elongate, unbroadened; alisphenoid bullae well inflated; mastoid region only slightly inflated; paroccipital processes moderately short to very much reduced (*canescens*, *pygmaeus*, etc.), their length not exceeding 35 per cent of over-all width apart; upper canines and p^{1-1} separated by diastemata; length of crowns of i^2 and i^3 subequal; p^4 unenlarged; toothrows smoothly curved from m^4 through the premolars and canine to i^1 (in contrast to the angular arrangement seen in *Pseudochirops*).

The typical species is *P. peregrinus*, in which posterior palatal openings are well developed, a very small portion of the lacrimal is exposed on the face, the paroccipitals are of moderate length, the orbits are unenlarged. The greatest width across the zygomata comes near their middle, not at the orbits as in *canescens*.

The degree of divergence of various other species of the subgenus from the typical species is suggested in the accompanying phylogenetic tree (fig. 3).

A list of full species follows:

1. *laniginosus* and *peregrinus*	East Australia
2. *forbesi* and allies	New Guinea
3. *canescens* and *avarus*	New Guinea
4. *pygmaeus*	New Guinea
5. *caroli*	New Guinea
6. *rubidus*	Southern Queensland
7. *victoriae*	Southeastern Australia
8. *convolutor*	Tasmania
9. *occidentalis*	Western Australia
10. *herbertensis*	Northern Queensland

Those species nearest the bottom of the list diverge more strongly and in more numerous ways from *laniginosus*. *Pseudocheirus herbertensis* is distinguished by the absence of posterior palatal openings, and by the exceptionally large facial exposure of the lacrimal bone and extreme degree of reduction of the interparietal; *P. convolutor*, by the unusually wide palate, absence of posterior palatal openings, and by great lengthening of the nasals anteriorly, with deepening of the nasal notch; *P. occidentalis*, with very large posterior palatal openings, has also long anterior openings which extend backward beyond the anterior roots of p^3; the rostrum is massive, high, and smoothly domed. *Pseudocheirus caroli* is distinguished by obsolescence of the posterior palatal openings, although it otherwise somewhat resembles *P. peregrinus*; *P. pygmaeus*, by small size and proportional enlargement of the bullae; *P. canescens*, by unusual enlargement of the orbits; *P. forbesi*, by flattening of the outer sides of the bullae, the lace-work pattern of the posterior palatal fenestrations, and lack of white tip to the tail. In *caroli*, *forbesi*, *canescens*, and *pygmaeus* the paroccipital processes are very short.

Pseudochirulus MATSCHIE

Pseudocheirus canescens was designated by Matschie the type of this new subgenus *Pseudochirulus*. Unfortunately few of the features that were supposed to define the subgenus have generic systematic value, and he wrongly included under it the members of the *forbesi-schlegeli* group. His succeeding two "new species," *capistratus* and *barbatus*, appear to be conspecific with *forbesi*. The tiny species *pygmaeus*, which Klein placed in "*Pseudochirulus*," is not closely related to *canescens*. Thus, if Matschie's subgeneric concept is to be retained for *canescens* and allies, it must be closely defined and based primarily upon structural differences between *canescens* of Vogelkop and *peregrinus* of Australia. In my opinion insufficient differences of subgeneric weight exist. The one character that might be cited in support of such separation is the extreme shortness of the paroccipital processes, but that character was not mentioned by Matschie.

Pseudocheirus peregrinus Boddaert

Pseudocheirus Ogilby (September, 1837a) was founded upon two marsupials, *Phalanger cookii* Ogilby and *gliriformis*, which latter is a species of *Dromicia*. But *Phalanger cookii* Ogilby (1836), an Australian species, was indicated by that author as a species distinct from the older *Phalangista cookii* Desmarest (1818) from Tasmania, the latter having been renamed by Ogilby *Phalangista viverrina*. Under the International Rules of Nomenclature, Article 30, the type of a genus must be one of the species included by the founder in that genus. The fact that *gliriformis* was a *Dromicia* indicates definitely that *cookii* Ogilby from Hunter River, New South Wales, is the type of *Pseudocheirus*. Since this name is a homonym it cannot be used, but must be replaced by the next available name, *laniginosus* Gould, which likewise was applied to specimens from Hunter River. Thomas' (1888) and Matschie's (1915) designations of *peregrinus*, a different race, as type of *Pseudocheirus* can hold if, as I believe, *peregrinus* and *laniginosus* are conspecific. The type of *Pseudocheirus* must then be written: *Pseudocheirus cookii* Ogilby (not Desmarest) = *laniginosus* Gould = *peregrinus* Boddaert.

Earlier (1937) I accepted the designations by Thomas (1888) and Matschie (1915) of *peregrinus* Boddaert as type of the genus. Troughton (1941) has since treated *peregrinus*, the gray form of the coastal scrubs of north Queensland, as a species fully distinct from Ogilby's type *cookii*. The precise identification of the original *peregrinus* with topotypes from near Cooktown is not in doubt (see beyond). The real question relates to the conspecificity of *peregrinus* and *cookii* Ogilby = *laniginosus*.

Pseudocheirus peregrinus agrees with *laniginosus* in the general form of the skull, the well-developed posterior palatal openings, the moderately developed paroccipital processes, the rather large meatal openings, the general dental pattern. It differs slightly by its somewhat smaller alisphenoid bullae, particularly in the degree of their extension anteriorly, by the smaller size of the canine (crown lengths, 1.2:1.5), and the more compressed conditions of p^3 and p^4 (widths: p^3, 1.5:1.9; p^4, 2.1:2.4).

Although the colors of the skins of the two forms, *laniginosus* and *peregrinus*, contrast strongly, it can be noted that *incanens*, the southern race of *peregrinus*, is in part annectant, having the limbs tan colored. In fact, the three races of *peregrinus* in the north, joined with those of *laniginosus* farther south, appear to indicate the almost continuous pattern of distribution in eastern Australia of a single species.

The validity of this view must rest in part upon the relationship of *P. p. oralis* from "mid-east Queensland," the most southerly of the races of *peregrinus*, with *P. l. pulcher* from northern New South Wales, the most northerly of the races of *laniginosus*. Thomas, it will be recalled, first assigned *oralis* to *laniginosus;* Iredale and Troughton (1934) transferred it to *peregrinus*. The next geographical race to be encountered is *P. l. pulcher* Matschie from coastal northern New South Wales, *pulcher* being a new name for the warmly

Race and Region	Dorsal Color	Arms and Legs	Feet	Tail	Length of White on Tail in mm.	Face	Base of Ear	Underparts
peregrinus Coen, n. Queensland	Dark gray	Dark gray	—	Blackish gray	100	Gray	White	White with gray bases
incanens Atherton tableland, n. Queensland	Silvery gray	Tan	Pale whitish brown	Gray	200	Tan	Extensively white	White with white bases
oralis South central Queensland	Dark gray	Orange cinnamon	Pale tawny	—	150	Gray tan	White	White
pulcher Coastal northern New South Wales	Gray brown	Tan	Tan	Gray brown	170	Tan	White	White with gray bases
modestus Inland New South Wales	Gray brown	Dull tan	Dull tan	Brown	120	Grayish tan	Dirty white	Dirty white with gray bases
laniginosus Hunter River, New South Wales	Brownish gray	Brownish gray	Whitish tan	Gray	75	Grayish tan	Buffy white	White with gray bases

Fig. 4. The color differences of the six races now attributed to *peregrinus*.

colored series depicted as *P. cookii* Gould. The two southern *Pseudocheirus, victoriae* and *notialis*, and *rubidus* from mountainous southern Queensland are treated as separate species for reasons given beyond. Under such an arrangement as I have suggested the eastern ring-tails would appear as the following races:

1. *P. p. peregrinus*	Cooktown, Queensland	northern
2. *P. p. incanens*	Ravenshoe, Queensland	northern
3. *P. p. oralis*	Mid-east Queensland	
4. *P. p. pulcher*	Coastal New South Wales	
5. *P. p. modestus*	Inland New South Wales	
6. *P. p. laniginosus*	Hunter River, New South Wales	

It is unlikely that the integrity of some of these geographical races, the salient characters of which are tabulated in figure 4, can be upheld any more than can that of many of our interrelated races of *Peromyscus* in the United States. Transitional forms are to be expected between one race and the next adjoining, and much study will be needed before their ranges can be determined with a reasonable degree of accuracy.

As Boddaert's (1785) original description of *peregrinus* is available to but few students, I quote it together with the slightly different earlier description of Pennant (1781): "*Peregrinus.* A Didelphis with long, pilose tail, the tip bare; body ferruginous above, white beneath. The Filander of the South. New Holland opossum. Pennant, Quadr. 311. n. 188. Habitat, on Endeavour River [at Cooktown, north Queensland]."

Boddaert based his name *peregrinus* on the New Holland opossum of Pennant (1781). The description, without technical name, given by the latter, follows:

"188 New Holland O[possum] with the upper part of the head, and the back and sides covered with long, soft, glossy hairs, of a dark cinereous color at the bottoms, and of a rusty brown towards the ends: belly of a dirty white.

"Tail taper, covered with short brown hairs, except for four inches and a half at the end, which was white, and naked underneath; toes like the former.

"The skin I examined had lost part of the face: the length from the head to the tail was thirteen inches: the tail the same.

"This was found near Endeavour River, on the eastern coast of New Holland, with two young ones.* It lodges in the grass, but is not common."

Incidentally, these two descriptions, the first founded upon the second, offer an example of the manner in which small discrepancies between texts develop. Workers with mammal skins are aware also how errors in description of colors come about, for example, gray hairs of specimens become oxidized to reddish or brownish. I have before me several specimens from Coen, a few miles west of Cooktown, which agree almost exactly with Pennant's description, even to the amount of white hairs on the terminal $4^1/_2$ inches of tail; they lack the "rusty brown" tips of the dorsal hairs of the body, being colored instead of unfaded, grizzled gray. The "short brown hairs" of the tail of Pennant's animal in ours are brownish gray. Other races of the same species, since described from farther south, have a greater length of the tail white and show varying amounts of tan color on the limbs. I feel fully satisfied that our Coen specimens actually represent *peregrinus* Boddaert, and in consequence that that species cannot be confused with *cookii* Ogilby.

Two forms currently placed in *peregrinus* (or *laniginosus*) which appear to me to be more aberrant, and consequently perhaps should show as species rather than as races, are the strongly rufescent *rubidus* of the Bunya Range, southern Queensland, and the pallid, densely soft-furred *victoriae*, with *notialis* from the highlands of the southeastern part of south Australia shown as a race of *victoriae*. *P. rubidus* is distinguished from all forms of *peregrinus* by its entire posterior palate and by the relative shortness of its paroccipital processes (as well as by its peculiar coloration).

Pseudocheirus victoriae, from which *notialis* differs chiefly by the greater amount of white on the tail, is distinguished from *peregrinus* and allies by the fact that the

"* Cook's voy. iii. 586."

nasal processes of the premaxillae almost make contact with the frontals, a characteristic visible also in *rubidus* and in the Tasmanian *convolutor* but not in *occidentalis* of southwestern Australia.

Pseudocheirus rubidus Troughton and Le Souef

Pseudochirus rubidus TROUGHTON AND LE SOUEF, 1929, Rec. Australian Mus., vol. 17, p. 294, pl. 45.

Pseudocheirus laniginosus rubidus IREDALE AND TROUGHTON, 1934, Australian Mus., mem. 6, p. 26.

TYPE LOCALITY: Bunya Range, south Queensland. Miss Lawrence, in charge of the mammal collections at the Museum of Comparative Zoölogy, has kindly lent me two specimens of this interesting ring-tail, collected by Mr. Schevill at Mount Mowbullen in the Bunya Range, at 3000 feet. These dispose of any idea that *rubidus* was a unique mutant (Troughton had only one specimen). In addition to the vivid rusty red color above and below (for details consult Troughton and Le Souef, above), there are skull characters which separate it sharply from *peregrinus* which occurs both north and south of it. The obsolescence of the posterior palatal foramina and the shortness of the paroccipital processes in proportion to their over-all distance apart (3.6:16.6, or 22 per cent) are the principal ones; the teeth are larger than the northern members of *peregrinus* and about equal to those of such southern members as *P. laniginosus*. The nasal notch is not so deep.

Pseudocheirus victoriae Matschie

Pseudocheirus laniginosus victoriae MATSCHIE, 1915, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 85.

Pseudocheirus laniginosus notialis THOMAS, 1923, Ann. Mag. Nat. Hist., ser. 9, vol. 12, p. 158.

We have before us for examination two specimens, also kindly lent from the collection of the Museum of Comparative Zoölogy, which were collected by P. J. Darlington on Mount Kosciusko, in southern New South Wales, at 5000 feet. These have the tail terminally white for 130 mm. Their whitish hind feet, generally soft gray dorsal pelage, and fine white ventral fur indicate the closeness of their relationship to *victoriae* of Cape Ottway and *notialis* of Mount Lofty. The latter, though here shown in the synonymy of *victoriae*, has more white in the tail (300:100 mm.) and smaller teeth and may well be considered a good race.

The skull, as earlier stated, has, in common with *rubidus* and *convolutor*, the nasal processes of the premaxillae extended so far back that they almost make contact with the frontals. The nasal notch is, however, not deep as in *convolutor*. The posterior palatal openings are well developed.

These three occurrences, in south Australia, Victoria, and southern New South Wales, prompt me to suggest that they represent a single mountain-dwelling species peculiar to the southeastern corner of Australia. There are ranges of hills behind Cape Ottway incompletely connected to the great mountain system of eastern Australia to which Mount Kosciusko belongs. The Lofty Ranges in south Australia are widely separated from that system.

Pseudocheirus caroli Thomas

In some of its characters this species is slightly reminiscent of *P. herbertensis* of Queensland. The long, almost woolly gray hair, the white terminal portion of the tail, the narrowed, unfenestrated palate, and the arrangement and shape of other parts of the skull and of the teeth indicate rather close resemblance between *caroli* and *herbertensis*. On the other hand, the facial exposure of the lacrimal in *caroli*, much more restricted than in *herbertensis*, is much as in *peregrinus* and other species of typical *Pseudocheirus*, while the shortness of the paroccipital processes distinguishes the species, together with others in New Guinea, from all Australian species.

Pseudocheirus caroli and *P. versteegi* appear to be at most subspecifically distinct. The former came from 6000 feet on Kunupi Mountains (Menoo Valley), the latter from only 100 feet in the Noord River basin (Kloof Bivak). They may be altitudinal races.

Pseudocheirus caroli caroli Thomas

Pseudochirus caroli THOMAS, 1921, Ann. Mag. Nat. Hist., ser. 9, vol. 8, p. 357.

No new material has come into our collections since previous discussion of this form (Tate and Archbold, 1937). I have been able, since then, to examine the type specimens of both *caroli* and *versteegi;* I have also seen the series of five animals in the Berlin Natural History Museum taken in the Weyland Mountains by Stein.

Pseudocheirus caroli versteegi Thomas

Pseudochirus versteegi THOMAS, 1922, Nova Guinea, vol. 18, p. 735.

The type specimen, which I had the opportunity to study in the summer of 1937, remains unique. There is no doubt of its close relationship to *caroli*, from which it differs mainly by the shape of the nasals (length by breadth in *caroli*, 17 mm. by 10.2; in *versteegi*, 20.5 by 8.5), and in the amount of white at the tip of the tail, 100 mm. in *versteegi*, about 190 mm. in *caroli*. As in *caroli* the palate is unfenestrated posteriorly.

Pseudocheirus forbesi Thomas

This name is used to include a group of ring-tails, all natives of New Guinea, derived from the old ancestral line leading to *peregrinus*. In them, however, the posterior palatal openings, though extensive, appear as very many small pores in a network of bone. The outer half of each audital bulla is much flattened beneath in contrast to the inner half, which is well inflated. The paroccipital processes are very short. The tail lacks the white tip. The face and feet are more or less tan-brown, and a blackish median line may be present on the head. A black area at the angle of the jaw may be continued upward behind the ear. The underparts are buffy to white, and their hairs have gray bases.

Five names are, in my opinion, referable to this group, though it is doubtful whether more than a single species is involved:

P. forbesi	Sogeri, 1500 feet, Astrolabe Range, near Port Moresby
P. f. longipilis	Mount Tafa, 7000 feet, near Port Moresby
P. lewisi	Arfak Mountains, 6200 feet
P. larvatus	Rawlinson Mountains, Huon Peninsula
P. barbatus	Sattelberg, Huon Peninsula

Thomas (1888) was misled by an anomaly when he wrote of the "total suppression of the posterior incisors and anterior premolars" of *P. forbesi*. The premolar is rather commonly wanting, the incisor rarely.

In this species there seem to develop long-haired, high-mountain races at greater altitudes but on the same slopes as lowland races. This is exemplified by typical *forbesi* from the Astrolabe Range, 1600 feet, and its corresponding highlands race *longipilus* from 7000 feet, not very many miles away. I am inclined to regard *larvatus*, *barbatus*, and *capistratus* from the Huon region as synonyms of one another and as a geographical race of *forbesi; lewisi* is a distinct western race of *forbesi*. The structural similarity of these animals is brought out by comparison of their proportions (table, p. 25).

Pseudocheirus forbesi forbesi Thomas

Pseudochirus forbesi THOMAS, 1887, Ann. Mag. Nat. Hist., ser. 5, vol. 19, p. 146.

No new material has been received since we wrote about this form earlier (Tate and Archbold, 1937), except that I have studied and photographed the type. The altitudinal range seems to vary from 1600 to 6500 feet. No representative of the group was secured by the third Archbold Expedition which worked in central Netherlands New Guinea. A female which I examined at Genoa had been marked by Doria as having three pouch young.

As shown by the comparisons in the table (p. 25), the type specimen is a little smaller than usual, both in skull measurements and in the size of the teeth.

Pseudocheirus forbesi longipilis Tate and Archbold

Pseudochirus (Pseudochirulus) forbesi longipilis TATE AND ARCHBOLD, 1935, Amer. Mus. Novitates, no. 810, p. 4.

MATERIAL: Only the original two males from Mount Tafa, 6500 to 8000 feet.

The very dense silky pelage contrasts strongly with that of the series from alti-

tudes lower than 6000 feet. It more nearly resembles the pelage of specimens of *P. f. larvatus* but lacks the brilliant color pattern of that Huon Peninsula race.

Pseudocheirus forbesi larvatus (Förster and Rothschild)

Phalanger larvatus FÖRSTER AND ROTHSCHILD, 1911, Ann. Mag. Nat. Hist., ser. 8, vol. 7, p. 337.
Pseudochirulus capistratus MATSCHIE, 1915, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 92.
Pseudochirulus barbatus MATSCHIE, 1915, *ibid.*, p. 93.

MATERIAL EXAMINED: The types of *larvatus, capistratus,* and *barbatus,* as well as the series of three specimens recorded previously (Tate and Archbold, 1937).

The two types of *P. larvatus* (B.M. No. 28.10.1.22, adult male, and B.M. No. 11.10.13.2, young adult male) were both collected by Keysser in the Rawlinson Mountains, Huon Peninsula. The skins are more brilliantly colored than those of true *forbesi,* the face bright chestnut, with black facial stripes extending from the chin, behind the cheeks, to the bases of the ears. Underparts dirty white, the hairs with gray bases; the chin fuscous.

Palate fenestrated in much the same manner as in *forbesi,* a reticulate pattern. The meatus nearly smooth beneath, the alisphenoid bullae not very prominent.

The type of *P. barbatus* (Berlin No. A. 107,06,2) was also collected by Keysser. It is an unsexed skin, without skull. Head and face light brown, with median fuscous stripe. Forearms light brown. Underparts dirty white, the hairs with gray bases. Chin fuscous, the dark color continuing behind the brown of the face to the base of the ear. Hind legs and feet brownish gray.

The measurements of representatives of this race are compared with others of the group (table, p. 25). They suggest that it is on the average slightly larger than any of the others.

The type of *P. capistratus* (Berlin No. 20751, juvenal female) has the fuscous chin and whitish underparts that characterize the members of the *forbesi* group in the Huon area. The skull, though juvenal, shows identity of dental pattern with our series, particularly in the dimensions of m^1, which compare favorably with those in other species from the region about the Huon Peninsula.

Pseudocheirus forbesi lewisi Dollman

Pseudochirus lewisi DOLLMAN, 1930, Proc. Zool. Soc. London, pt. 1, p. 431.

The type of *P. f. lewisi* (B.M. No. 29.5.27.51, adult male) was collected by Shaw Mayer in the Arfak Mountains at 6200 feet. Although the ventral color pattern separates it quite definitely from the eastern representatives of *forbesi,* the characters of its skull show it to be more closely related to *forbesi* than to the similar appearing *canescens* and *avarus.*

The general color is gray with a brownish tinge. There is no frontal line, but a fuscous area appears at the base of the ears. Underparts buffy, with the hairs gray based. The posterior palate strongly fenestrated in a manner similar to *P. f. forbesi.* The mastoid and alisphenoid inflations well developed. The under surface of the meatus slightly rough but not flattened.

We have two specimens of this form in the Archbold collection, an adult male from Siwi, 2500 feet, and a juvenal female, formerly referred to *schlegeli,* from Ditschi, 3500 feet, both collected by Dr. Ernst Mayr and virtual topotypes.

Measurements of this race are shown in the table (p. 25).

Pseudocheirus schlegeli Jentink

Pseudochirus schlegeli JENTINK, 1884, Notes Leyden Mus., vol. 6, p. 110.

This is apparently a very rare ring-tail. Jentink (1911) has recorded a second specimen, a female from the Hellwig Mountains, 8000 feet. He offered no detailed evidence to prove such identity, however, and I myself saw only the type at Leiden.

The type of *P. schlegeli* is an adult male, collected at "Arfak" by dealer Frank. It is a mounted skin, now brownish gray, with no trace of facial or dorsal stripe; the underparts buffy, the hairs gray based except those of throat and neck which are self-colored; hands and feet light buffy.

The skull lacks the back of the braincase; the zygomata are not more widened

at the orbit than at the squamosal; the alisphenoid bullae and mastoid inflations are well developed; meatal tube flat beneath; posterior palatal fenestrations slightly developed only; back of the palate in line with back of m^{1-4}.

Jentink discussed this species in relation to *P. bernsteini* from Salawatti, from which admittedly it differs greatly. Its true relationships seem to be with the *forbesi* group, or perhaps it is annectant between that and the *canescens-avarus* group. It appears to be distinct from *lewisi* which also is from Arfak.

Pseudocheirus pygmaeus (Stein)

Pseudochirulus pygmaeus STEIN, 1932, Zeitschr. f. Säugetierk., vol. 7, p. 257 (published December 15, 1932).

Pseudochirus mayeri ROTHSCHILD AND DOLLMAN, 1933, Proc. Zool. Soc. London, for 1932, p. 1083.

TYPE LOCALITIES: *Pseudocheirus pygmaeus*, Sumuriberg, Weyland Mountains; *mayeri*, Gebroeders, Weyland Mountains.

A thoroughly distinct species of which we now have a very fine series of 40 specimens from the neighborhood of Mount Wilhelmina, collected by the third Archbold Expedition. Study of the types of *pygmaeus* and *mayeri* has convinced me that they are synonymous. This species is an animal of the high mountains, being found from 6000 to 12,000 feet. The smallest known species of the genus, it is nevertheless referable to *Pseudocheirus* subgenus, as it shows all the characters of that group, including the large posterior palatal openings. The bullae are large and well inflated, the mastoid area somewhat less so. The width across the meatal tubes substantially exceeds the mastoid width. The paroccipital processes, as in *caroli* and *forbesi*, are extremely short—mere knobs. The only species with which this little species may be confused is *P. bernsteini*, which has also very small teeth but broader zygomata and palate and wider orbits.

The type of *P. pygmaeus* (Berlin No. 44278, adult female) has a diastema either side of the canine; posterior palatal foramina large; mastoid but little expanded; bullae prominent beneath; pelage dense, woolly, grayish brown; underparts buff with gray hair bases; hands and feet brownish buff; head slightly browner than back; no median stripe.

The type of *P. mayeri* (B.M. No. 33.6.1.61, old adult female) from 6000 feet, "found in nest of moss three feet from ground. One young in pouch," has the color of the pelage substantially as above; the skull with back of palate broken; toothrow in a smooth curve; alisphenoid bullae rounded; outer width across paroccipitals, 12.8 mm.

A set of measurements of 10 animals is appended (table, p. 25–26) which illustrates the stability of the species and will serve as a standard with which others can be compared.

Pseudocheirus canescens (Waterhouse)

The named forms of *Pseudocheirus*, which I believe are conspecific with *canescens*, are *dammermani* from western New Guinea, *avarus* from near Port Moresby, and *gyrator* from the Gira River district northeast of Port Moresby across the Central Range. Such a relationship, if verified, would give to *canescens* a range throughout the hilly areas of New Guinea, approximately the same as that of the *P. forbesi* group, though at considerably lower altitudes. The morphological features of the group are given under the races.

Pseudocheirus canescens canescens (Waterhouse)

Phalangista (Pseudochirus) canescens WATERHOUSE, 1846, A natural history of the Mammalia, vol. 1, p. 305.

Phalanger grisonnant HOMBRON AND JACQUINOT, 1853, Voyage au Pole Sud, Zool., Mammal., vol. 3, p. 55, pl. 16.

"General colour grey-brown; underparts of body impure white; sides of face fulvous; upper surface of head with a broad, dusky, longitudinal mark...no posterior palatine openings." (Waterhouse.)

It is important to determine the identity of this, the oldest of the medium-sized species of *Pseudocheirus*, since it must be referred to one of two superficially similar but actually rather distinct groups, examples of which are *avarus* and *forbesi*.

The type, a mounted skin still in Paris in 1937, was marked No. 227 (191A); the

skull, No. A2572, which has been sectioned sagittally, was kept in the Department of Anatomy. A cast of the skull in plaster is in the British Museum collection (see No. 7 of the Hombron and Jacquinot plate). Although Waterhouse (1846) had obviously seen the Hombron and Jacquinot plate, it is not apparent that he had seen their manuscript.

This animal resembles *P. avarus* structurally; the greatest width of the skull occurs at the orbits; the molars, as in *avarus*, are very narrow; the back of the palate is unfenestrated; the bullae are fully inflated; the paroccipital processes are much shortened. The whitish gray of the underparts as shown in the plate are reminiscent of *P. lewisi* (of the *forbesi* group), but the text of Hombron and Jacquinot reads "... the gray white, washed with yellowish, on the lower parts." The underparts in true *avarus* are self-colored Ochraceous Buff but in Archbold material from the Mount Wilhelmina region related to *avarus*, the underparts are much as described for *canescens*.

Pseudocheirus canescens bernsteinii Schlegel

Pseudo-cheirus bernsteinii SCHLEGEL, 1866, Nederlandsch Tidschr. Dierk., vol. 3, p. 357.

This ring-tail is based upon two "cotypes" in the Leiden Museum: specimen "a" an adult female, specimen "b" a juvenal male—both from the Island of Salawatti, the western tip of New Guinea.

In Schlegel's opinion, this form was related to *canescens*. Thomas synonymized the two, and the present investigation has also indicated that *bernsteinii* belongs to the *canescens-avarus* group of *Pseudocheirus*. Schlegel distinguished it by the presence of a large spot on the side of the neck and by its greater frontal concavity.

The female cotype, now brownish gray, still shows a distinct frontal stripe and a definite median dorsal shade; underparts buffy, almost without gray bases to the hairs (originally "yellowish white," Schlegel).

The skull has the rostrum short and pointed. A pronounced flare is apparent at the maxillary root of the zygomata, and the greatest zygomatic width occurs at the level of the orbits; mastoid swellings moderate; under surface of meatus rough; bullae strongly inflated; palate extending 2 mm. behind m^{4-4}, and provided with a pair of very small posterior openings like those sometimes present in *avarus*, quite unlike the bony lace-work effect in the palate of *forbesi*.

The measurements of the teeth of both cotypes (table, p. 26) indicate their relationship to the narrow-toothed *canescens* group and their distinctness from the *forbesi* group with its broader molars—indeed their teeth are exceptionally narrow.

This form should also be compared with the mountain-dwelling *pygmaeus*, which has, however, far narrower zygomata and palate, though its molars are somewhat broader.

Pseudocheirus canescens dammermani Thomas

Pseudochirus dammermani THOMAS, 1922, Nova Guinea, vol. 13, p. 736.

This is at best a weakly separable race of *canescens* from the foothills south of the "Nassau" portion of the Central Range in Netherlands New Guinea. As can be seen from the measurements of the types of *canescens* and *dammermani* and specimens from the Idenburg River (table, p. 26), there is virtually no difference. In the unique *dammermani* the length of m^1 is disproportionately small, though even that can be matched in the race *gyrator* from 500 miles to the east. Its describer compared it with *schlegeli* of the *forbesi* group, naturally being able to find a number of differences.

Pseudocheirus canescens gyrator Thomas

Pseudochirus gyrator THOMAS, 1904, Ann. Mag. Nat. Hist., ser. 7, vol. 14, p. 401.

The type (B.M. No. 6.1.8.27, an adult male) was collected at Lindum Creek, Gira River district, northeast of the Central Range at an altitude of 600 feet by Stalker, January 15, 1904.

The general color is brownish gray, with the head, face, cheeks, and forearms pale brown, and a well-marked fuscous frontal

stripe; underparts brownish buff, the bases of the hairs grayish. Ears fuscous, with dark around their bases.

In the skull the zygomata are widest at the level of the orbits; the alisphenoid bullae and the mastoid areas are inflated; no palatal fenestration occurs, and the teeth are small and narrow.

The type specimen appears to be unique.

Pseudocheirus canescens avarus Thomas

Pseudochirus avarus THOMAS, 1906, Ann. Mag. Nat. Hist., ser. 7, vol. 17, p. 329.

Pseudocheirus avarus, type (B.M. No. 6.1.26.2), was purchased from Gerrard, the animal dealer. It is a young adult male from near Port Moresby. Dorsal color pale brownish gray, with a slightly darker middorsal shade from nape to tail, which recurs on the brown head as a narrow stripe running between the eyes and the crown. The head is wholly pale, dull reddish brown, and the forelimbs are the same. Underparts self-colored brownish buff throughout. Hind feet buffy white.

The skull, as in *canescens*, is widest at the level of the orbits. The basal part of the braincase is broken away. The teeth, in comparison with those of the locally common *forbesi*, are small and narrow.

Since recording our material from Matsika (Tate and Archbold, 1937), I have personally collected another specimen from Itiki, the Astrolabe Range, 1400 feet. This animal had three well-developed young in the pouch. It will be seen from the table (p. 26), that the teeth of this specimen are slightly smaller than those of others from Matsika.

Pseudocheirus occidentalis Thomas

Pseudochirus occidentalis THOMAS, 1888, Catalogue of the Marsupialia and Monotremata in the . . . British Museum, p. 174.

TYPE: B.M. No. 41.1189, adult female, skin and skull, from Perth, King George's Sound, western Australia.

This form shows relations with *peregrinus-laniginosus* in possessing large posterior palatal vacuities and the form of the union of the mastoids to the paroccipital process, and with *convolutor* of Tasmania in its relatively very deep nasal notch, the increased size of the space between i^3 and the canine, and the generally larger size of the skull. It exhibits certain unique characters. The high, smoothly rounded rostrum with smooth transition from the nasals laterally to the maxillary, and backward to the similarly smooth, full frontal area should be contrasted with the abrupt, angular change from nasals to maxillaries in *peregrinus* and allies and the depressed frontal trough of both *peregrinus* and *convolutor*. Further unique characters include the often much enlarged anterior palatal openings which may attain a length of 8 mm. and extend backward beyond the anterior margins of p^{3-3}, and the extreme enlargement of the audital meatus which has an almost funnel-shaped aperture. Finally, the anterior margin of the coronoid process of the lower jaw rises almost vertically, and the process taken as a whole is unusually broad and strong. This condition is somewhat approximated in *convolutor*, but in *peregrinus* and allies the process is weaker.

The general interrelationship of the three species is emphasized by the common development of the white distal half of the tail, and by white patches at the bases of the ears in all (partly suppressed or replaced by buff in southern races of *peregrinus*).

The general color is dark brownish gray with darker dorsal area; underparts whitish, with the hairs gray based except those of the self-colored white chest patch and self-colored buffy patch just behind the pouch in females. In some specimens these two patches are united by a narrow line of white hairs.

The habitat of *occidentalis* in southwestern Australia, 1000 miles from any other members of its group, is a significant fact. Perhaps this species, with the other two species, *peregrinus* and *convolutor*, represents the peripherally placed descendants of a Torresian ancestral stock. It was formerly common about Perth. Alexander (1915) records it as common in the Albany district, in the extreme southwest corner of western Australia. Its distribution has been mapped by Shortridge (1909).

Besides the type in the British Museum

there are others in the Rothschild collection at Tring, and series at the United States National Museum and the Museum of Comparative Zoölogy.

Pseudocheirus convolutor (Oken)

Balantia convolutor OKEN, 1816, Lehrbuch der Naturgeschichte, vol. 3, pt. 2, p. 1126.

Phalangista cookii DESMAREST, 1818, Nouveau dictionnaire d'histoire naturelle, nouv. ed., vol. 25, p. 476; DESMAREST, 1820, Mammalogie, p. 268.

Of this species we have for study a number of skulls collected by the late Henry C. Raven in Tasmania and several specimens lent us by the United States National Museum. That this ring-tail is specifically distinct from *laniginosus* of eastern Australia is indicated by its entire palate, more stoutly built skull, much larger nasals and very deep nasal notch, and larger teeth. The arrangement of the toothrows tends slightly to approximate that in *Pseudochirops*, and the molars also are proportionately large.

Color grayish brown above, the limbs usually washed with rufous; the underparts white with only the median line of hairs white to the roots. The backs of the ears and their bases white; the terminal 100 mm. of the tail white.

A race, *P. c. bassianus* Le Souef, has been described from Flinders Island, in the Bass Strait between Victoria and Tasmania.

It is not surprising that Ogilby, believing the form *laniginosus* of Hunter River, New South Wales, to be identical to this Tasmanian ring-tail, applied the name *cookii* to both. Externally they are astonishingly similar, but internally distinctive cranial characters separate them sharply.

Skins of *P. convolutor* can be recognized by the much more ample white area around the base of the ear, by their somewhat darker color tone, and by the strong suffusion of smoky about the sides of the face, head, and neck. The pelage is thicker and longer. In both, the terminal 100 mm. of the tail is white.

Pseudocheirus herbertensis (Collett)

Two races of this species are currently recognized. An apparently distinct third race is described beyond.

Pseudocheirus herbertensis herbertensis (Collett)

Phalangista herbertensis COLLETT, 1844, Proc. Zool. Soc. London, p. 353.

The two cotypes of the skulls of this animal are both represented by plaster casts, B.M. Nos. 84.8.19.3–84.8.19.4. Both were adult females. The actual specimens are probably in Christiania. A good series is contained in the Archbold collection and almost as many in a collection made by the late H. C. Raven.

Skull heavily built, proportionately narrow, with distinct interorbital trough; bullae very well inflated; paroccipital processes only moderately long, rather slender; palate narrow, scarcely ever fenestrated behind; first incisors very long. The skull is specialized on account of the greatly reduced interparietal, the greatly increased facial exposure of the lacrimal bones, and the high, narrowly vaulted form of the paired nasals. The nasals are not elongated anteriorly as in *convolutor*, nor is the nasal notch deepened especially. The frontal trough is deep.

The skin has long, soft hairs, blackish brown above, white beneath. The bare area of the tail extends in both sexes to within 2 inches of the base. In this animal a tendency to assume a pied pattern exists. In some specimens the whole of one of the forelimbs may be white, while the other is smoky colored like the back.

Pseudocheirus herbertensis colletti Waite

Pseudochirus herbertensis var. *colletti* WAITE, 1899, Rec. Australian Mus., vol. 3, p. 92.

Waite recognized as a distinct race of *herbertensis* a series from Boar Pocket, Tinaroo Track, near Cairns. The animals were described as "grayer and darker" than the typical form; the hairs behind the shoulders usually tipped with white or pale yellow; the rump and colored portion of the tail black; the ears "rich rufous without." The measurements given for *colletti* all come within the range of our series of true *herbertensis*.

A series purporting to represent this race has been kindly lent for study by Miss

Barbara Lawrence, in charge of the mammal collections at the Museum of Comparative Zoölogy. I have difficulty in distinguishing these from the typical form and must question the validity of *colletti*.

Pseudocheirus herbertensis cinereus, new subspecies

TYPE: A.M.N.H. No. 107275, adult male, Mount Spurgeon, about 65 miles northwest of Cairns, northern Queensland, altitude 4000 feet, November 28, 1937, collector Miss Gabriele Neuhäuser. The type is a skin with skull in fair condition.

GENERAL CHARACTERS: A pale, brownish gray race of the common *herbertensis*, apparently confined to semi-isolated rain forest of Mount Spurgeon; its skull not distinguishable from that of the species.

DESCRIPTION OF TYPE: Dorsal color anteriorly Light Drab,[1] which beyond the shoulders gradually darkens to Hair Brown, the under fur being Drab Gray. Head with a short, dark, median line; ears with scanty grayish white hairs at their bases. Hands, feet, and basal part of tail Light Drab. Terminal 110 mm. of tail white. Underparts Drab Gray, with a narrow median area of ventral surface and of bases of forelimbs white (not with extensive areas of pure white as in the typical race).

MEASUREMENTS OF TYPE: Head and body, 380 mm.[2]; tail, 384[2]; hind foot (s.u.), 42[2]; skull: condylobasal length, 69; zygomatic width, 39; palatal length, 39; length of nasals, 27; mastoid width, 33; width across meatus, 35; outer width across paroccipital processes, 9.5; p^4–m^4, 18; p_4–m_4, 19.6; length of mandible from articular process, 46. Dental measurements in detail appear in the table at the end of this paper.

This race is further based upon a series of three other males and five females, all from the same locality. The females can be distinguished from the males (as described above) by having the anterior parts of the body almost as dark as the posterior; the color from Hair Brown to Benzo Brown throughout, except the face which is always pale Drab. These darker females, however, never become so dark as adults of typical *herbertensis;* their color is very like that of the pale juvenals of *herbertensis;* their underparts have the same dirty gray white with few self-colored hairs as in the males, never the strong, clean, contrasting white of females of true *herbertensis*. One of the three males, the only young adult (teeth all erupted but unworn, skull not yet fully grown), has as yet the color of the females.

This Mount Spurgeon race has the appearance of inhabiting regions of less rainfall than the saturate races *herbertensis* and *colletti*, and it came from at least 1000 feet higher. The suggestion has been made that these specimens are from the western (dry) side of Mount Spurgeon, which stands on the continental divide, in which case specimens of similarly pallid color may occur to north and south of there, provided suitable conditions exist.

SUBGENUS **PSEUDOCHIROPS**

This subgenus, with type *P. albertisii*, can be readily distinguished from *Pseudocheirus* by a number of characters: the anterior part of the palate and the rostrum are proportionately short, so that the premolar, canine, and incisor teeth form a row of contiguous structures, and the diastemata on either side of the canine and p^1, present in *Pseudocheirus*, are no longer apparent. The posterior part of the palate and the zygomata are much wider than in typical *Pseudocheirus*. Openings in the back of the palate may be present or absent. The mastoid region in more specialized species may be so greatly inflated as to become confluent with the fully inflated bulla. The paroccipital processes are commonly quite large. The molars are generally broad, the crown length of i^2 is almost twice that of i^3, and i^{1-1} may be as greatly enlarged as in *herbertensis*.

The subgenus, whose phylogeny is indicated by the diagram (fig. 5), is confined to New Guinea, with the exception of the species *archeri* from north Queensland, the

[1] Colors are those of Ridgway, 1912, "Color standards and color nomenclature."
[2] Made by collector in the field.

closest relative of which appears to be *corinnae* of New Guinea.

Petropseudes dahli from northwest Australia, though commonly treated as a full genus, is with little doubt derived from the *Pseudochirops* stem. Its flattened, broadened head with dorsally inflated mastoid and its short tail present peculiarities, but large. In *P. cupreus* inflation of the mastoids attains maximum. This is also the largest species of *Pseudocheirus*.

The second or *archeri* group includes two distinct species, *archeri* of Cape York and *corinnae* of New Guinea, both with strongly defined blackish dorsal stripes. In *corinnae* and *archeri* the mastoids show

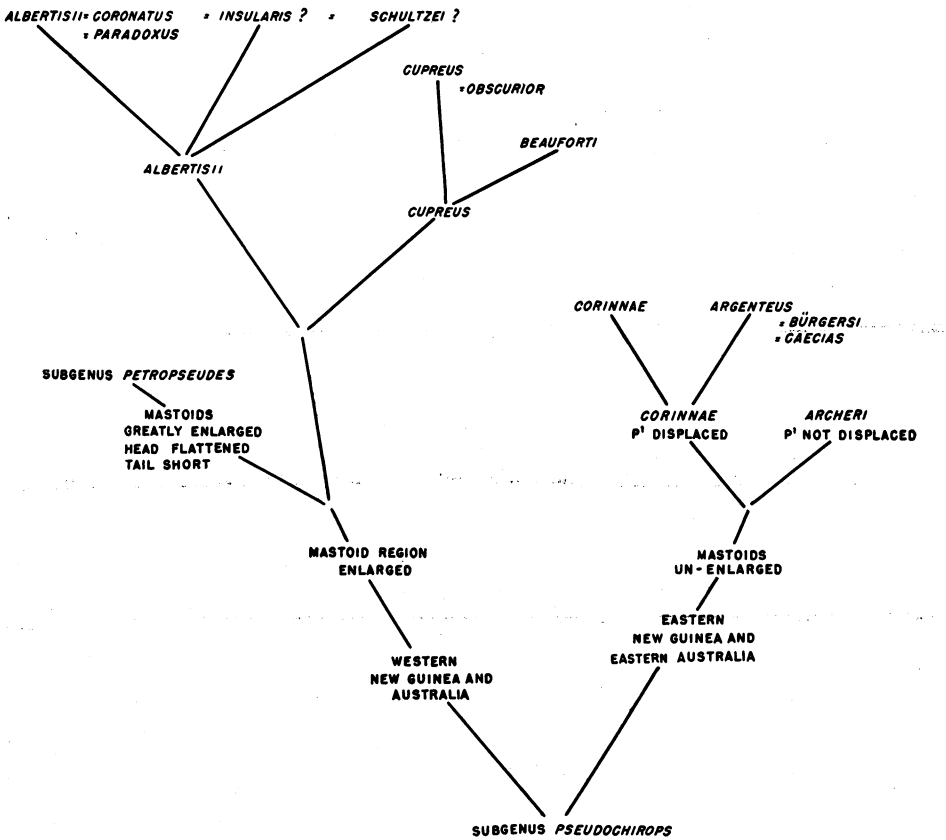

Fig. 5. Phylogenetic tree of the subgenus *Pseudochirops*, showing relationship of *Petropseudes*.

none the less its dentition resembles that of *Pseudochirops*, not *Pseudocheirus*.

Some years ago, I pointed out (Tate and Archbold, 1937) that *Pseudochirops* consisted of two chief groups, the *albertisii* group and the *corinnae* group (= *archeri* group). The former group is now seen to comprise two distinct species, *albertisii*, in which the posterior palatal openings are small and *cupreus*, in which they are very minimal expansion and the paroccipital processes minimal development for the subgenus. In them, too, posterior palatal fenestration is absent or barely incipient.

Pseudocheirus (*Pseudochirops*) *archeri* and *corinnae* Compared

Pseudocheirus archeri has long been known to be the only Australian member of the Papuan subgenus *Pseudochirops*. It

may possibly be the most primitive. It has usually been compared with *albertisii*, the genotype of *Pseudochirops*. Study, however, shows convincingly that *archeri* is related instead to another species of *Pseudochirops*, *corinnae* (with its supposed races *caecias*, *bürgersi*, and *argenteus*). The animals of the *archeri* group are all distinguishable from *cupreus* by the small size of their bullae, by their little-inflated mastoid areas, and by the reduced size of their paroccipital processes. The posterior palatal openings are so little enlarged as to be merely pore-like, a condition shared by *P. albertisii paradoxus* and *P. a. coronatus*.

The skins have either one or three longitudinal lines, the median line separated from the lateral ones by a pair of ill-defined whitish lines. The dorsal pelage is commonly a yellowish gray or greenish gray (except the race *caecias* which is brownish), and the tips of the hairs are grizzled silvery. All have a pale shade behind the shoulder, which runs up from the light-colored ventral region.

The altitudes occupied by true *archeri* in Queensland seem to vary from 2400 to 3000 feet. Those of *corinnae* in New Guinea extend much higher, from 3600 to 6500 feet, and in the Mount Wilhelmina region as high as 8000 feet. The unique specimen of *caecias* from the Mambaré basin came from 3000 feet, *argenteus* from 2800 to 3200 feet. The altitude on the Schrader Mountains where *bürgersi* was taken has not been recorded. Between the nearest points of the present areas of distribution of *archeri* and *corinnae* lies a gap of 300 miles of lowlands, including the Torres Strait, believed unoccupied by any member of the group.

Pseudocheirus (Pseudochirops) archeri (Collett)

Phalangista (*Pseudochirus*) *archeri* COLLETT, 1844, Proc. Zool. Soc. London, p. 382.

The type or cotypes of *P. archeri*, kept in the Natural History Museum, Christiania, according to Thomas (1888), are represented in the British Museum by two plaster casts numbered B.M. No. 84.8.19.5 and B.M. No. 84.8.19.6, adult males. The originals were collected by Lumholtz in northern Queensland at Herbert Vale, 15 miles from the coast, near Cardwell.

Compared with *P. corinnae* of New Guinea, *archeri* differs by several characters: the muzzle at the lacrimal level and the palate are distinctly wider; the anterior part of the mesopterygoid fossa is broader (9:8 mm.); the teeth are substantially heavier (table, p. 27). An outstanding character is seen in the relatively unreduced lower premolar between the incisor and p_4. In all other species known to me these vestigial teeth have undergone far greater reduction. The dorsal lines, at least in our small series of six specimens, are less defined; the terminal part of the tail is white, and the underparts and inner sides of the limbs are white. Nevertheless, the two species show very close affinity of structure and color pattern and are undoubtedly derived from common ancestry.

The six specimens of *archeri* in the American Museum were collected at Lake Barrine, 2400 feet, and at Evelyn, 3000 feet, both places near Cairns.

Pseudocheirus (Pseudochirops) corinnae Thomas

Of the four names applied to animals of this species, there is no doubt some are synonyms. Those names include *corinnae* proper from the upper Vanapa River, near Port Moresby; *caecias*, from the upper Mambaré River, on the northeast slope of the Central Range, behind Port Moresby; *argenteus*, from the Sattelburg, Huon Peninsula; and *bürgersi* from the Schrader Mountains, south of the divide between the Ramu and Sepik rivers, and thus a part of the northern face of the Central Range.

The fact that our collection has recently been enriched by the arrival of a series of 11 specimens from the Bele River, 6800 to 8000 feet, whose waters flow south to the Noord River, and that these animals appear to be indistinguishable from our old material from near Port Moresby, several hundreds of miles to the southeast, indicates the great stability of the form living on the southern slopes of the Central Range.

After examining the type material of all four alleged forms, I am inclined to recognize only two weakly distinct races, a northern and a southern. The color of the typical (southern) race is predominantly silvery gray with touches of tawny; that of the northern has much more brown. The underparts in all are light brownish gray, with gray hair bases, in contrast to the pure white underparts of the Australian *archeri*.

Pseudocheirus (Pseudochirops) corinnae corinnae Thomas

Pseudochirus corinnae THOMAS, 1897, Ann. Mus. Civ. Genova, ser. 2, vol. 18, p. 142.

Several cotypes exist: Genoa C. E. No. 10458 (skin) with C.E. No. 17630 (skull), adult, probably female; Genoa C.E. No. 10459, male skin with partly cleaned skull; and B.M. No. 97.8.7.86, adult male. All were collected by Loria in the upper Vanapa River basin. In addition, we have the small series previously reported, and a series of 10 specimens from the neighborhood of Mount Wilhelmina. I, myself, when traveling between Port Moresby and Kagi at the foot of Mount Victoria, did not obtain any specimens.

As stated, the new series from near Mount Wilhelmina, Netherlands New Guinea, seems inseparable from true *corinnae*. The only possible difference lies in slight obsolescence of the median dorsal line, which in two or three specimens does not extend onto the head.

Pseudocheirus (Pseudochirops) corinnae argenteus Förster

Pseudocheirus argenteus FÖRSTER, 1913, Zool. Anz., vol. 42, p. 179.

Pseudochirus bürgersi MATSCHIE, 1915, Sitzber. Gesellsch. Naturf. Fr. Berlin, vol. 4, p. 89.

Pseudochirus caecias THOMAS, 1922, Ann. Mag. Nat. Hist., ser. 9, vol. 9, p. 674.

The type of *argenteus*, though somewhat more silvery than certain other specimens from the Huon Peninsula (6200 feet) was young (m^3 not fully erupted). Some other specimens (Berlin No. 34336 and Berlin No. A-4525) from the same region are distinctly browner. The type of *bürgersi* (a flat skin, male, Berlin No. 18401) is colored rich mottled brown, with three blackish dorsal stripes and the underparts light smoky brownish gray. The type of *caecias*, a young adult female (B.M. No. 7.5.22.8) has a general wash of brown over its dorsal pattern.

The characters of the skulls seem to be identical, after allowing for differences of age and sex. The dimensions of the teeth are indicated in the table (pp. 27–28).

Pseudocheirus (Pseudochirops) cupreus Thomas

This species is undoubtedly the nearest ally of the genotype *albertisii*. It can be sharply differentiated by the relatively much larger posterior palatal foramina and by much greater expansion of the lacrimal bones on the face. In common with *albertisii* and the otherwise rather specialized *Petropseudes dahli* of northwestern Australia, it has the mastoid region very greatly inflated, in some cases to such an extent that the posterior parts of the inflated mastoids exceed the occipital condyles *backward*. In one race only, *beauforti* of the upper Noord River region, this enlargement of the mastoids has advanced somewhat less, although it exceeds markedly that part of the skull in the group of *Pseudochirops* which includes *archeri* and *corinnae*. Since no other significant characters controvert the idea, it may be considered tentatively that *beauforti* is the least specialized of the races of *cupreus*. The race *obscurior* (Tate and Archbold, 1937) is now held invalid because it was probably based upon age characters; it comes within the range of normal color variation of true *cupreus*. The form from the hills on the south side of the Idenburg Valley is included provisonally with the race *beauforti*, but may possibly be distinct, as indicated by its smaller size (table, pp. 27–28). With the exception of that one race, *cupreus* appears to be restricted to the southern slopes of the Central Range, extending between the Hellwig Mountains (with Mount Wilhelmina) and the Owen Stanley Range behind Port Moresby.

Pseudocheirus (Pseudochirops) cupreus cupreus Thomas

Pseudochirus cupreus THOMAS, 1897, Ann. Mus. Civ. Genova, ser. 2, vol. 18, pp. 145–146.

Pseudochirus (Pseudochirops) cupreus obscurior TATE AND ARCHBOLD, 1935, Amer. Mus. Novitates, no. 810, pp. 3–4.

The type of *cupreus* (B.M. No. 96.1.25.4), seen at the British Museum, is an old adult male collected by one of the MacGregor expeditions on the Owen Stanley Range. The back and base of the skull are both broken. The skull is one of the largest of the species (table, p. 28).

Skins of *cupreus* proper are readily distinguishable from those of the related western races by the fact that the underparts have a median area of creamy white, expanded laterally at the chest and throat and again at the inguinal region. The dark dorsal stripe, though often weak, is distinguishable in all our specimens as well as in the type. True *P. cupreus* is known as yet only from the southern face of the Central Range behind Port Moresby between altitudes of 5600 and 8600 feet.

Pseudocheirus (Pseudochirops) cupreus beauforti Thomas

Pseudochirus beauforti THOMAS, 1922, Nova Guinea, vol. 13, p. 734.

A total of five specimens from the Bele River, 6800 feet, tributary of the Balim River, which in turn empties into the Noord River, undoubtedly represents true *beauforti*, the type locality of which was the Lorentz River on the south side of the mountains at an unrecorded altitude.

A second series of three individuals taken from the mossy forest on the ridge crests between the Idenburg and Balim rivers at altitudes between 5600 and 6500 feet appears also to agree closely with *beauforti*, although all three are smaller (table, p. 29).

A third series, marked with the identical locality data of the first series, differs sharply in certain respects. Comprising three males and three females, it is larger, with its posterior palatal openings substantially larger and the back of the palate behind each foramen reduced to a slender bar; the teeth are almost as large as those of the type of true *cupreus*, but the mastoid width is in most specimens proportionately *reduced*. The skins of the adults (five out of six) are warmly rufescent, and all lack even a trace of the dark middorsal line.

I am informed by Mr. L. J. Brass, a member of the collecting party, that 6800 feet represents the bottom of the Bele Valley but that natives (who secured all the skins of *P. cupreus*) hunted up to 8000 or 8500 feet. It is possible that these rufescent individuals represent a race which inhabits somewhat higher levels than the darker, smaller *P. c. beauforti*.

In all individuals, no matter at what altitude collected, the underparts are colored more or less as described by Thomas, "pale pinkish-cinnamon," and the hairs have gray bases. No specimens show the white underparts found in *P. c. cupreus*.

Pseudocheirus (Pseudochirops) albertisii (Peters)

Phalangista (Pseudochirus) albertisii PETERS, 1874, Ann. Mus. Civ. Genova, ser. 1, vol. 6, p. 303; PETERS AND DORIA, 1880, Ann. Mus. Civ. Genova, ser. 1, vol. 16, p. 674.

Pseudochirus albertisii coronatus THOMAS, 1897, Ann. Mus. Civ. Genova, ser. 2, vol. 18, p. 144.

Pseudochirus schultzei MATSCHIE, 1915, Sitzber. Gesellsch. Naturf. Fr. Berlin, p. 87.

Pseudochirus albertisii paradoxus DOLLMAN, 1930, Proc. Zool. Soc. London, pt. 1, p. 432.

Pseudochirus insularis STEIN, 1933, Zeitschr. f. Säugetierk., vol. 8, pt. 2, p. 88.

The differences described for the three Vogelkop names listed above can all be accounted for by variations of age and molt. All three come from the Arfak Mountains, eastern Vogelkop; the typical specimen from Hatam; *coronatus* from 6000 feet; *paradoxus* from 6200 feet. I find only a single additional record for this marsupial in the Vogelkop, one from Sorong, in the northwest corner of the peninsula.

Eastward the species *albertisii* is met again in the Weyland Mountains (±6000 feet); Stein (1933) took a specimen, which he described as *P. a. insularis*, on Japen (= Jobi) Island. No records appear between the Geelvink Bay and the Cyclops Mountains, 250 miles to the east (a single specimen without skull, taken by Mayr). A unique specimen collected by Schultze from the Sepik region, 200 miles southeast of the Cyclops, was named *schultzei* by Matschie.

It is, of course, possible that altitudinal subspecies may occur in this species, but the

fact, if true, cannot be effectively demonstrated with the inadequate material at hand. In the palates of both *coronatus* and *paradoxus* the posterior openings are represented by tiny pores less than a millimeter across. In specimens of true *albertisii* from Hatam, and also in our series from the Weyland Mountains, the openings reach an average length of 3 mm. Those of the type of *schultzei* are also appreciably enlarged.

In northern New Guinea, *P. albertisii* appears to represent the larger *P. cupreus*, which extends southeastward along the central ranges between the Hellwig Mountains and the Owen Stanley Range. *P. cupreus* invariably has the posterior palatal foramina much larger, the length of the smallest being 8 mm. (in material from the south side of the Idenburg Valley at 5600 feet).

Subgenus Petropseudes

Contrary to one recent writer (Thomas, 1923) and in agreement with views expressed earlier (Collett, 1895), I am satisfied that *Petropseudes* is a specialized member of the *Pseudochirops* assemblage. As shown in this paper, *Pseudochirops* consists of three main species, or species groups: *archeri*, *cupreus*, and *albertisii*. *P. albertisii*, a well-specialized species, happened to be discovered first and was selected as type of the subgenus. *P. cupreus*, too, is specialized, but in another direction—the extreme enlargement of the posterior palatal vacuities, precisely one of the special characters given for *Petropseudes*. Furthermore, the ultra-enlargement of the mastoids in this animal merely marks an extreme development of what has taken place in both *cupreus* and *albertisii*. Other specializations peculiar to itself are apparent, namely, the shortening of the tail and the flattening of the skull. Its geographical isolation in northern and northwestern Australia is yet another factor that carries weight. I am, nevertheless, not disposed to allow *Petropseudes* full generic rank, believing it co-derived with a *part* of an allied subgenus (fig. 5).

Pseudocheirus (Petropseudes) dahli Collett

Pseudochirus dahli Collett, 1895, Zool. Anz., vol. 13, no. 490, p. 464.

The type of this species was not seen. Notes were made from B.M. 4.1.3.72, adult male, from Nellie Creek, Northern Territory, collected by J. T. Tunney. Three other specimens were found at Perth Museum, western Australia.

The upper first incisors slightly opisthodont; only traces of diastemata before and behind c and p^1; molars very large (table, p. 29). Posterior palatal openings very large (but compare with *cupreus*); mastoid swellings exceeding the condyles posteriorly and extending upward, as stated by Thomas in his description of *Petropseudes* (1923); coronoid process narrowly falcate.

Type Locality: Mary River, Northern Territory.

Subgenus Hemibelideus

I have suggested already that the relationship of this monotypic offshoot of *Pseudocheirus* with *Schoinobates*, the gliding member of the Phascolarctinae, may have been overemphasized. The tail, furry to the tip, with little of its under surface bare and tactile, in combination with the animal's dark gray color and somewhat broadened skull contributes to make it resemble a flying phalanger without flying membrane.

But *Schoinobates* differs from *Hemibelideus* by its large posterior palatal openings; by the very slight degree of inflation of its mastoid area, in contrast to the proportionately much greater enlargement of the bulla; and also by the lack of the inflated, cellular inferior wall of the meatus so prominent in *Hemibelideus*. A further significant difference is seen in the position of p^1, close to the canine and remote from p^2 in *Hemibelideus*, remote from the canine and very close to p^3 in *Schoinobates* (a character found in true *Pseudocheirus*). There is, however, little doubt that both are related to the *Pseudocheirus* stem, for the selenodont pattern of the molars is common to all.

Hemibelideus shows features which indi-

cate somewhat closer relationship to *Pseudochirops* than to *Pseudocheirus:* the pronounced lengthening of the crown of i^2 in proportion to that of i^3; the general broadening of skull and palate and the tendency to lateral expansion of the mastoids. Special characters, which suggest relationships to none of the principal subgenera of *Pseudocheirus*, are the previously mentioned inflation of the lower wall of the auditory meatus, the strong anteroposterior flattening of the mastoid region, and the spacing of the canine and p^1.

Pseudocheirus (Hemibelideus) lemuroides (Collett)

Phalangista (Hemibelideus) lemuroides COLLETT, 1884, Proc. Zool. Soc. London, p. 385.

The cotypes of this animal are in Christiania, but in London I saw two plaster casts of them (B.M. Nos. 84.8.19.1–84.8.19.2), young adult females. They were collected by Lumholtz when he obtained the types of *P. archeri*, at Herbert Vale, north Queensland.

Tooth sizes are shown in the table (p. 30).

The long, blackish dorsal pelage and white underparts of *P. (H.) lemuroides* give it a superficial resemblance to *P. herbertensis*, which is found in the same area. It is at once distinguished by the fact that the hairs of the tail remain unappressed even at the tip.

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TABLE OF MEASUREMENTS OF *PSEUDOCHEIRUS*

Species and Race	Locality	Catalogue No.	Age	Sex	p^4–m^4	L.* p^4	W.* p^4	L. m^1	W. m^1	L. m^4	W. m^4	Cond.-basal Length	Zyg. Width	Remarks
P. p. peregrinus	Coen, n. Queensland	A.M.N.H. No. 108917	ad.	♂	16.9	2.9	2.1	4.0	3.3	3.1	2.7	57.0	34.0	
P. p. incanens	Atherton, n. Queensland	A.M.N.H. No. 107232	ad.	♂♀	16.1	2.7	2.1	4.1	3.1	3.0	2.4	59.0	34.0	
P. p. incanens	Atherton, n. Queensland	B.M. No. 22.12.18.86	ad.	♀	17.0	2.7	2.1	4.0	3.3	3.1	2.6	56.0	34.0	Type
P. p. oralis	Bloomsbury, e. Queensland	B.M. No. 26.3.11.28	ad.	♂	16.0	2.7	2.3	3.7	2.7	3.0	2.6	60.0	35.0	Type
P. p. pulcher	Coastal n. N. S. Wales	Berlin No. 5534	ad.		18.5	—	—	4.1	3.8	3.3	3.0	64.3	38.0	Type
P. p. laniginosus	Evelyn, N. S. Wales	A.M.N.H. No. 65422	ad.	♀	18.6	3.2	2.6	4.4	3.6	3.4	3.0	62.0	35.0	
P. p. laniginosus	Hunter R., N. S. Wales	B.M. No. 58.11.24.12	ad.	♂	18.5	3.0	2.5	4.3	3.5	3.5	3.1	—	35.2	Topotype
P. rubidus	Bunya Range, s. Queensland	M.C.Z. No. 29323	ad.	♂♀	17.9	3.0	2.3	4.3	3.4	3.3	2.9	—	—	Topotype
P. rubidus	Bunya Range, s. Queensland	M.C.Z. No. 29323	ad.	♀	17.7	3.0	2.2	4.1	3.3	3.1	2.8	60.0	37.0	Topotype
P. victoriae	Mt. Koskiusko, N. S. Wales	M.C.Z. No. 27952	ad.	♂♀	17.6	3.1	2.3	4.2	3.5	3.0	2.8	62.5	37.0	
P. victoriae	Cape Ottway, Victoria	Berlin No. 20698	ad.	♀	17.6	—	—	4.3	3.3	3.0	2.6	—	34.0	Type
P. victoriae	Mt. Koskiusko, N. S. Wales	M.C.Z. No. 28050	ad.	♂	18.8	3.3	2.4	4.5	3.8	3.1	3.0	61.0	37.0	
P. v. notialis	Mt. Lofty, s. Australia	B.M. No. 23.5.11.1	y. ad.	♂	16.0	2.6	2.0	3.9	2.9	2.8	2.6	60.0	35.0	Type
P. caroli	Weyland Mts., N. Guinea	B.M. No. 21.8.1.15	ad.	♂	16.2	3.1	2.1	3.7	3.0	—	2.8	61.0	35.2	Type
P. caroli	Weyland Mts., N. Guinea	A.M.N.H. No. 101992	ad.	♂	16.7	3.1	2.2	3.8	3.0	3.0	2.7	58.0	34.0	
P. caroli	Weyland Mts., N. Guinea	A.M.N.H. No. 101995	o. ad.	♂	16.7	3.0	2.2	3.7	2.8	3.1	2.9	60.0	36.0	
P. caroli	Weyland Mts., N. Guinea	A.M.N.H. No. 101993	o. ad.	♀	16.1	3.0	1.9	3.6	2.8	3.1	2.7	59.5	35.5	
P. caroli	Weyland Mts., N. Guinea	A.M.N.H. No. 101994	ad.	♀	16.8	3.1	2.2	3.9	3.0	3.0	2.5	60.0	35.0	
P. versteegi	Noord R., N. Guinea	B.M. No. 22.3.22.3	ad.	♀	16.5	3.1	2.1	3.9	2.9	2.9	2.7	60.3	34.0	Type
P. f. forbesi	Astrolabe Mts., Papua	B.M. No. 88.3.16.7	y. ad.	♂	13.6	2.5	1.7	3.0	2.2	2.6	2.1	49.8	29.6	Type
P. f. forbesi	Central Range, Papua	A.M.N.H. No. 104131	ad.	♂	14.2	2.5	1.8	3.2	2.6	2.6	2.4	57.0	32.0	
P. f. forbesi	Central Range, Papua	A.M.N.H. No. 104133	ad.	♂	14.6	2.7	1.9	3.4	2.7	2.7	2.3	51.0	29.5	
P. f. forbesi	Central Range, Papua	A.M.N.H. No. 104132	ad.	♂	14.4	2.7	1.9	3.3	2.4	2.7	2.4	55.0	31.0	
P. f. forbesi	Central Range, Papua	A.M.N.H. No. 104130	ad.	♂	14.6	2.5	1.9	3.3	2.6	2.9	2.5	53.0	30.0	
P. f. forbesi	Central Range, Papua	A.M.N.H. No. 104037	ad.	♂	14.6	2.6	1.8	3.6	2.7	2.7	2.3	50.0	29.0	Type
P. f. longipilis	Central Range, Papua	A.M.N.H. No. 104036	ad.	♂	13.9	2.4	1.8	3.2	2.4	2.7	2.3	53.0	31.0	
P. f. longipilis	Central Range, Papua	B.M. No. 11.10.13.2	y. ad.	♂	15.4	2.4	1.8	3.5	2.5	2.9	2.6	—	32.0	Cotype
P. f. larvatus	Huon Peninsula, N. Guinea	B.M. No. 28.10.1.22	ad.	♂	15.7	2.6	1.9	3.6	2.6	3.0	2.6	—	—	Cotype
P. f. larvatus	Huon Peninsula, N. Guinea	A.M.N.H. No. 79784	ad.	♂	16.2	2.8	2.1	3.7	2.9	3.2	2.8	62.0	35.0	
P. f. larvatus	Huon Peninsula, N. Guinea	A.M.N.H. No. 79775	ad.	♂	16.0	2.8	2.1	3.5	3.0	3.0	2.8	62.0	34.0	
P. f. larvatus	Huon Peninsula, N. Guinea	A.M.N.H. No. 79776	juv.	♂	—	2.6	2.0	3.7	2.7	—	—	47.0	29.0	
P. f. larvatus	Huon Peninsula, N. Guinea	B.M. No. 29.5.27.51	ad.	♂	13.8	2.5	1.8	3.0	2.5	2.5	2.3	51.0	30.0	Type
P. f. lewisi	Arfak, N. Guinea	A.M.N.H. No. 100886	ad.	♂	13.7	2.6	1.7	2.8	2.4	2.5	2.3	51.0	28.0	
P. f. lewisi	Arfak, N. Guinea	Leiden, spec. "a"	ad.	♂	15.0	2.8	1.9	3.5	2.5	2.6	2.3	—	30.0	Type
P. schlegeli	Arfak, N. Guinea	Berlin No. 20751	juv.	♀	—	—	—	3.6	2.8	—	—	42.0	26.0	Type
P. capistratus	Schrader Mts., N. Guinea	Berlin No. 44278	ad.	♀	11.8	2.1	1.4	2.6	2.0	2.2	2.0	40.0	23.0	Type
P. pygmaeus	Sumuriberg, N. Guinea	B.M. No. 33.6.1.61	o. ad.	♀	11.6	2.1	1.3	2.5	1.9	2.1	1.8	40.0	24.0	Type
P. mayeri	Weyland Range, N. Guinea	A.M.N.H. No. 109596	y. ad.	♀	11.9	2.2	1.7	2.7	2.1	2.3	1.8	43.0	25.0	
P. pygmaeus	Mt. Wilhelmina, N. Guinea													

* L. is length; W., width.

Species and Race	Locality	Catalogue No.	Age	Sex	p^4–m^4	L. p^4	W. p^4	L. m^1	W. m^1	L. m^4	W. m^4	Cond.-basal Length	Zyg. Width	Remarks
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109600	juv.	♀	—	2.1	1.5	2.8	2.1	—	—	38.0	23.0	
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109605	o. ad.	♀	11.5	2.0	1.4	2.6	2.0	2.4	1.9	45.0	27.0	
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109608	ad.	♀	11.2	2.1	1.3	2.6	2.0	2.2	1.8	43.0	26.0	
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109607	ad.	♀	11.5	2.1	1.5	2.7	2.1	2.2	1.8	46.5	26.5	
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109601	o. ad.	♂	11.3	2.1	1.5	2.7	2.0	2.1	1.8	43.0	26.0	
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109599	ad.	♂	12.0	2.1	1.6	2.8	2.0	2.3	2.0	43.0	26.0	
P. pygmaeus	Mt. Wilhelmina, N. Guinea	A.M.N.H. No. 109602	ad.	♂	12.0	2.2	1.5	2.9	2.0	2.2	1.8	44.5	26.0	
P. canescens	Triton Bay, w. N. Guinea	Paris No. 227 (191A) = skin Paris No. A2572 = skull	ad.	♀	13.0	2.4	1.7	2.9	2.4	2.5	2.2	54.0	31.0	Type
P. canescens	Idenburg R., 300 ft., N. Guinea	A.M.N.H. No. 15168	ad.	♂	13.2	2.3	1.7	2.9	2.4	2.7	2.3	56.0	35.0	
P. canescens	Idenburg R., 300 ft., N. Guinea	A.M.N.H. No. 151967	ad.	♀	13.0	2.4	1.6	2.9	2.3	2.6	2.2	49.0	28.5	
P. dammermani	South N. Guinea	B.M. No. 22.2.2.69	juv.		12.5	2.4	1.7	2.8	2.1	2.1	2.1	46.0	28.0	Type
P. avarus	Port Moresby area	B.M. No. 6.1.26.2	y. ad.	♂	12.0	2.1	1.4	2.6	2.1	2.3	2.0	—	30.0	Type
P. avarus	Near Port Moresby	A.M.N.H. No. 104124	ad.	♂	12.6	2.4	1.5	2.8	2.3	2.5	2.1	54.0	31.0	
P. avarus	Near Port Moresby	A.M.N.H. No. 104128	y. ad.	♂	12.8	2.3	1.6	2.8	2.3	2.5	2.2	49.0	31.0	
P. avarus	Near Port Moresby	A.M.N.H. No. 108540	ad.	♀	11.0	2.2	1.3	2.7	2.1	2.5	1.9	47.5	28.0	
P. avarus	Near Port Moresby	A.M.N.H. No. 104125	ad.	♀	12.5	2.4	1.6	2.8	2.3	2.4	2.2	51.0	30.0	
P. avarus	Near Port Moresby	A.M.N.H. No. 104126	y. ad.	♀	12.8	2.6	1.6	3.0	2.5	—	—	46.0	26.5	
P. gyrator	Gira R. district, Papua	B.M. No. 6.1.8.27	ad.	♂	12.5	2.4	1.6	2.8	2.1	2.1	2.1	46.0	28.0	Type
P. bernsteinii	Salawatti, w. N. Guinea	Leiden, spec. "a"	ad.	♀	11.6	2.2	1.3	2.5	1.4	2.0	1.9	—	32.0	Cotype
P. bernsteinii	Salawatti, w. N. Guinea	Leiden, spec. "b"	juv.	♂	—	2.3	1.5	2.8	1.6	—	—	—	—	Cotype
P. occidentalis	Perth, W. Australia	B.M. No. 41.1189	ad.	♀	19.7	3.2	2.5	4.7	3.8	3.7	3.4	68.6	38.4	Type
P. occidentalis	W. Australia	U.S.N.M. No. 237710	ad.	♀	20.3	3.4	2.6	5.0	3.9	3.8	3.3	71.0	39.0	
P. occidentalis	W. Australia	U.S.N.M. No. 237695	ad.	♀	20.0	3.3	2.7	4.8	3.8	3.7	3.3	68.0	37.0	
P. occidentalis	W. Australia	U.S.N.M. No. 237697	y. ad.	♀	19.0	3.2	2.5	4.6	3.6	3.7	3.2	66.0	37.0	
P. occidentalis	W. Australia	U.S.N.M. No. 237708	o. ad.	♀	19.8	3.3	2.5	4.7	3.7	3.7	3.2	72.0	40.0	
P. convolutor	Tasmania				—	—	—	—	—	—	—	—	—	Type, probably not in existence
P. viverrinus	Tasmania	B.M. No. 55.12.24.213	ad.	♀	19.4	3.4	2.5	4.6	3.8	3.7	3.2	69.0	37.0	Type
P. convolutor	Near Hobart, Tasmania	A.M.N.H. No. 65466			18.5	3.4	2.5	4.5	3.7	3.4	2.9	66.0	38.0	
P. convolutor	Near Hobart, Tasmania	A.M.N.H. No. 65478			19.1	3.5	2.6	4.6	3.7	3.4	2.8	64.0	38.0	
P. convolutor	Near Hobart, Tasmania	A.M.N.H. No. 65467			19.0	3.2	2.4	4.7	3.7	3.5	3.0	67.0	37.5	
P. convolutor	Near Hobart, Tasmania	A.M.N.H. No. 65474			19.0	3.4	2.8	4.8	3.9	3.5	3.3	68.5	37.0	
P. convolutor	Near Hobart, Tasmania	A.M.N.H. No. 65476			19.0	3.3	2.4	4.7	3.5	3.4	3.3	66.5	37.0	
P. convolutor	Near Hobart, Tasmania	A.M.N.H. No. 65477			19.0	3.4	2.5	4.7	3.7	3.3	3.2	67.5	37.5	
P. convolutor	Perkins I., Tasmania	U.S.N.M. No. 238387	y. ad.	♀	18.4	3.3	2.5	4.4	3.5	3.4	3.2	63.0	35.5	
P. convolutor	Perkins I., Tasmania	U.S.N.M. No. 238389	ad.	♂	18.2	3.3	2.4	4.3	3.5	3.4	2.8	—	39.0	
P. convolutor	Perkins I., Tasmania	U.S.N.M. No. 238390	ad.	♀	18.5	3.3	2.6	4.5	3.6	3.5	3.2	—	37.0	

Species and Race	Locality	Catalogue No.	Age	Sex	p^4–m^4	L. p^4	W. p^4	L. m^1	W. m^1	L. m	W. m^4	Cond.-basal Length	Zyg. Width	Remarks
P. convolutor	Perkins I., Tasmania	U.S.N.M. No. 238388	y. ad.	♂	18.3	3.3	2.5	4.5	3.7	3.5	3.0	—	36.0	
P. h. herbertensis	N. Queensland	B.M. No. 84.8.19.3	ad.	♀	17.2	—	—	—	—	—	—	70.0	37.2	Cotype, black form
P. h. herbertensis	N. Queensland	B.M. No. 84.8.19.4	ad.	♀	17.4	—	—	—	—	—	—	70.2	37.7	Cotype
P. h. herbertensis	Evelyn, n. Queensland	A.M.N.H. No. 107187	ad.	♀	18.0	3.1	2.5	4.0	3.1	3.8	3.0	61.0	35.0	
P. h. herbertensis	Evelyn, n. Queensland	A.M.N.H. No. 107188	o. ad.	♀	17.7	3.2	2.3	3.8	3.2	3.6	3.1	69.0	37.5	
P. h. herbertensis	Evelyn, n. Queensland	A.M.N.H. No. 107189	o. ad.	♀	17.5	3.2	2.3	3.8	3.0	3.7	2.9	67.0	36.0	
P. h. herbertensis	Evelyn, n. Queensland	A.M.N.H. No. 107191	ad.	♀	17.7	3.3	2.2	3.9	3.3	3.5	2.8	67.0	39.0	
P. h. herbertensis	Dimboola, 2400 ft., n. Queensland	A.M.N.H. No. 107194	ad.	♀	16.8	3.0	2.2	4.0	2.9	3.4	3.1	66.0	37.0	
P. h. herbertensis	Dimboola, 2400 ft., n. Queensland	A.M.N.H. No. 107192	y.	♂	17.7	3.3	2.4	4.0	3.1	3.6	2.9	62.0	35.0	
P. h. herbertensis	Dimboola, 2400 ft., n. Queensland	A.M.N.H. No. 107195	ad.	♂	17.9	3.3	2.4	4.1	3.2	3.7	3.0	69.0	39.0	
P. h. herbertensis	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107193	ad.	♂	17.8	3.2	2.3	4.2	3.2	3.5	3.2	70.0	36.5	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107269	ad.	♀	18.8	3.3	2.2	4.2	3.2	3.8	3.0	65.0	36.0	Gray form
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107270	ad.	♀	18.6	3.4	2.4	4.3	3.3	3.9	3.2	68.0	37.0	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107271	o. ad.	♀	18.2	3.3	2.3	4.2	3.3	3.5	2.9	65.5	39.0	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107272	ad.	♀	17.5	3.1	2.3	4.1	3.2	3.4	2.9	64.0	35.0	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107273	ad.	♀	18.5	3.3	2.3	4.2	3.3	3.8	3.0	65.0	36.0	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107274	ad.	♂	18.2	3.2	2.4	4.1	3.2	3.8	3.2	—	36.0	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107275	ad.	♂	18.3	3.3	2.1	4.1	3.2	3.8	3.0	69.0	39.0	Type
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107276	o. ad.	♂	18.4	3.5	2.3	4.0	3.2	3.7	3.2	—	—	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107277	ad.	♂	18.4	3.4	2.3	4.1	3.1	3.8	3.1	68.5	37.0	
P. h. cinereus	Mt. Spurgeon, n. Queensland	A.M.N.H. No. 107240	juv.	♂	—	3.4	2.5	4.0	3.1	—	—	49.0	28.0	
P. archeri	N. Queensland	B.M. No. 87.8.19.5	ad.	♂	—	—	—	—	3.7	—	3.4	65.0	40.0	Plaster cast of type
P. archeri	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107196	ad.	♂	21.1	4.5	3.3	5.2	4.5	3.7	3.7	61.0	39.5	
P. archeri	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107199	ad.	♂	20.9	4.3	3.1	5.0	4.0	3.8	3.6	63.0	38.0	
P. archeri	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107200	y. ad.	♂	20.8	4.5	2.9	4.9	3.9	3.9	3.7	60.0	37.5	
P. archeri	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107197	o. ad.	♂	20.6	4.6	3.1	4.4[a]	4.3	3.7	3.7	—	40.5	
P. archeri	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107201	ad.	♀	20.7	4.5	3.2	5.2	4.1	3.9	3.5	61.0	40.0	
P. archeri	L. Barrine, 2400 ft., n. Queensland	A.M.N.H. No. 107202	ad.	♀	20.1	4.4	3.0	4.8	4.0	3.7	3.6	62.0	39.5	
P. corinnae	South of Mt. Albert Edward, Papua	Genoa C.E. 10458/-17630	ad.	♀	19.5	—	—	4.2	3.7	3.2	3.4	63.0	39.0	Type
P. corinnae	South of Mt. Albert Edward, Papua	Genoa C.E. 10459	ad.	♂	20.0	—	—	4.3	3.9	3.4	3.4	67.0	41.0	Paratype
P. corinnae	South of Mt. Albert Edward, Papua	B.M. No. 97.8.7.86	ad.	♂	20.1	4.0	2.9	4.5	4.1	3.3	3.7	66.0	41.0	Cotype
P. corinnae	Port Moresby region	A.M.N.H. No. 104111	ad.	♂	21.0	4.4	3.0	5.0	4.0	3.6	3.6	63.0	38.5	
P. corinnae	Port Moresby region	A.M.N.H. No. 104116	ad.	♂	20.5	4.2	2.9	4.9	3.7	3.5	3.6	65.0	39.5	
P. corinnae	Port Moresby region	A.M.N.H. No. 104152	ad.	♂	20.7	4.1	2.9	4.9	3.9	3.8	3.8	66.0	40.0	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109642	ad.	♂	20.6	4.1	—	4.7	3.8	3.6	3.5	67.0	39.0	

[a] Much worn.

Species and Race	Locality	Catalogue No.	Age	Sex	p^4–m^4	L. p^4	W. p^4	L. m^1	W. m^1	L. m^4	W. m^4	Cond.-basal Length	Zyg. Width	Remarks
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109643	ad.	♂	19.8	4.0	2.8	4.6	3.8	3.5	3.4	67.0	39.0	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109646	ad.	♂	20.1	4.0	2.9	4.5	3.9	3.7	3.7	68.0	40.5	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109649	juv.	♂	—	4.0	2.9	4.7	3.9	—	—	45.5	27.5	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109650	ad.	♂	19.7	3.9	2.8	4.5	3.8	3.4	3.3	66.0	39.0	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109644	ad.	♀	19.8	4.0	2.8	4.7	3.7	3.5	3.2	66.0	36.0	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109645	ad.	♀	19.4	4.0	2.9	4.4	3.6	3.5	3.3	65.0	37.0	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109647	o. ad.	♀	20	4.2	2.8	4.4	3.7	3.6	3.3	65.0	39.0	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109648	ad.	♀	20.3	4.2	2.9	4.8	4.0	3.5	3.3	66.0	37.5	
P. corinnae	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109651	ad.	♀	19.6	4.0	2.8	4.6	3.8	3.4	3.3	66.0	38.0	
P. corinnae caecias	Mambaré R., Papua	B.M. No. 7.5.22.8	y. ad.	♀	19.0	4.1	2.5	4.3	3.6	3.1	3.1	—	35.5	Type
P. bürgersi	Schrader Mts., N. Guinea	Berlin No. 18401	ad.	♂	20.0	—	—	4.7	3.9	3.5	3.4	62.4	40.0	Type
P. cupreus	Owen Stanley Range, N. Guinea	B.M. No. 96.1.25.4	o. ad.	♂	24.3	5.3	3.2	5.8	5.0	4.2	4.0	74.0	47.0	Type
P. cupreus	Mt. Tafa, Papua	A.M.N.H. No. 104109	ad.	♂	23.4	5.2	3.3	5.8	4.5	4.2	4.0	74.0	45.0	
P. cupreus	Murray Pass, Central Range, N. Guinea	A.M.N.H. No. 104112	ad.	♀	23.7	5.3	3.6	5.9	4.5	4.2	3.9	72.0	46.0	
P. cupreus	Murray Pass, Central Range, N. Guinea	A.M.N.H. No. 104035	juv.	♂	—	5.3	3.3	6.0	4.7	—	—	—	—	
P. cupreus	Kagi, Central Range, N. Guinea	A.M.N.H. No. 108574	ad.	♂	23.2	5.0	3.4	5.4	4.3	4.1	3.9	71.0	44.0	
P. cupreus obscurior	Mafulu, Central Range, N. Guinea	A.M.N.H. No. 104114	ad.	♀	22.4	4.8	3.3	5.4	4.3	4.1	3.7	70.0	44.0	Type
P. cupreus obscurior	Mafulu, Central Range, N. Guinea	A.M.N.H. No. 104113	ad.	♂	22.9	5.5	3.4	5.5	4.6	4.1	3.9	—	43.0	
P. cupreus obscurior	Mafulu, Central Range, N. Guinea	A.M.N.H. No. 104038	juv.	♂	—	4.8	3.3	5.3	4.2	—	—	—	—	
P. cupreus beauforti	Lorentz R., N. Guinea	B.M. No. 22.3.22.2	ad.	♂	22.5	4.9	3.2	5.0	4.2	3.7	3.6	67.1	40.5	Type
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109631	ad.	♂	23.7	5.2	3.5	5.7	4.3	4.2	3.9	71.0	45.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109632	ad.	♂	23.5	5.1	3.4	5.3	4.5	4.4	4.0	71.0	46.0	

Species and Race	Locality	Catalogue No.	Age	Sex	p^4–m^4	L. p^4	W. p^4	L. m^1	W. m^1	L. m^4	W. m^4	Cond.-basal Length	Zyg. Width	Remarks
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109635	ad.	♂	22.8	5.0	3.7	5.3	4.5	4.0	4.0	71.0	43.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109638	ad.	♀	23.3	5.0	3.3	5.5	4.3	4.2	3.8	70.0	43.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109640	ad.	♀	24.5	5.2	3.3	5.9	4.9	4.1	3.7	75.0	47.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109637	y. ad.	♀	22.5	4.8	3.4	5.2	4.3	4.0	3.8	67.0	42.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109636	ad.	♀	21.8	4.7	3.3	5.1	4.5	4.1	3.6	71.0	44.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109639	ad.	♂	24.1	5.2	3.4	5.5	4.7	4.4	4.0	77.0	46.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109641	ad.	♂	24.6	5.3	3.6	6.0	4.7	4.2	3.8	73.0	45.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109633	juv.	♂	—	5.3	3.7	6.2	4.7	—	—	64.0	39.0	
P. cupreus beauforti	Bele R., L. Habbema, 7000 ft., N. Guinea	A.M.N.H. No. 109634	ad.	♀	25.0	5.2	3.5	6.2	5.0	4.2	4.1	73.0	47.0	
P. cupreus beauforti	Idenburg R. area, 5500 ft., N. Guinea	A.M.N.H. No. 151829	ad.	♂	21.3	4.4	3.1	5.1	4.3	3.6	3.6	67.0	43.0	
P. cupreus beauforti	Idenburg R. area, 5500 ft., N. Guinea	A.M.N.H. No. 151836	ad.	♂	21.4	4.5	3.1	5.2	4.1	3.8	3.5	—	41.0	
P. cupreus beauforti	Idenburg R. area, 5500 ft., N. Guinea	A.M.N.H. No. 151826	ad.	♀	21.8	4.5	3.2	5.2	4.2	4.1	3.8	66.0	40.5	
Petropseudes dahlii	Northwest Australia	B.M. No. 4.1.3.72	ad.	♂	19.6	3.5	2.7	4.9	4.1	3.1	3.6	65.7	42.4	
Pseudocheirus albertisii	Hatam, Arfak, w. N. Guinea	Genoa C.E. No. 1547	ad.	♂	19.6	—	—	4.5	4.1	3.2	3.2	62.8	36.8	Cotype
P. albertisii	Hatam, Arfak, w. N. Guinea	Genoa C.E. No. 3897	ad.	♂	19.0	—	—	5.0	3.8	3.2	3.3	63.4	38.3	Cotype
P. albertisii	Arfak, w. N. Guinea	Berlin No. 5742	ad.	♂	18.5	—	—	4.5	3.8	3.1	3.0	—	38.7	
P. coronatus	Arfak, 6000 ft., w. N. Guinea	B.M. No. 94.2.14.4	juv.		—	4.2	2.9	5.1	3.8	—	—	52.0	32.0	Type
P. paradoxus	Arfak, 6300 ft., w. N. Guinea	B.M. No. 29.5.27.52	ad.	♂	21.4	4.5	3.1	5.0	3.9	3.5	3.5	65.4	38.6	Type
P. paradoxus	Siwi, Arfak Mts., N. Guinea	A.M.N.H. No. 100880	ad.	♂	19.5	4.1	2.9	4.8	3.8	3.2	2.9	61.5	37.5	
P. paradoxus	Siwi, Arfak Mts., N. Guinea	A.M.N.H. No. 100887	ad.		19.0	4.0	2.9	4.4	3.5	3.3	3.2	59.5	38.0	
P. paradoxus	Weyland Mts., N. Guinea	A.M.N.H. No. 103260	ad.	♂	18.4	3.8	3.0	4.6	3.9	3.3	3.1	65.0	38.0	
P. paradoxus	Weyland Mts., N. Guinea	A.M.N.H. No. 101996	ad.	♀	18.5	3.9	2.9	4.6	3.4	3.0	2.7	60.5	37.0	
P. paradoxus	Weyland Mts., N. Guinea	A.M.N.H. No. 101997	ad.	♀	19.6	4.5	3.1	4.7	4.0	3.1	3.0	60.0	39.0	
P. insularis	Japen I., N. Guinea	Berlin No. 44404	y. ad.	♂	19.3	3.5	3.0	4.6	4.1	3.5	3.1	—	—	Type
P. schultzei	Sepik R. region, N. Guinea	Berlin field No. 85	y. ad.	♂	18.8	—	—	4.7	3.8	—	—	57.0	26.0	Type

Species and Race	Locality	Catalogue No.	Age	Sex	p^4–m^4	L. p^4	W. p^4	L. m^1	W. m^1	L. m^4	W. m^4	Cond.-basal Length	Zyg. Width	Remarks
Hemibelideus lemuroides	N. Queensland	B.M. No. 84.8.19.1	y. ad.	♀	17.1	—	—	—	3.0	—	2.8	55.0	37.6	Cotype
H. lemuroides	N. Queensland	A.M.N.H. No. 107208	ad.	♀	16.7	3.0	2.4	4.1	3.1	3.3	3.0	54.0	37.5	