

COMMENTS ON THE PROPOSED STABILIZATION
OF *MACROPUS* SHAW, 1790. (Z.N. (S.) 1584)

(See volume 20, pages 376-379)

By T. H. Kirkpatrick (*Queensland Department of Primary Industries, Brisbane*) and
J. T. Woods (*Queensland Museum, Brisbane*)

The stabilization of the generic name *Macropus* Shaw, 1790 (*The Naturalists' Miscellany*, Pl. 33 and text), because of its particular and long-standing application to the Grey Kangaroo, is desirable, but to achieve this an alternative to the synonymy of its type species, *Macropus giganteus* Shaw, 1790 (*loc. cit.*), with *Mus canguru* Statius Müller, 1776 (*Des Ritters C. von Linné . . . Supplementsband* : 62, Nürnberg) is proposed. This is necessitated by a suggested alternative identification of the holotype of *Mus canguru*.

As Calaby, Mack and Ride (1962, *Mem. Qd. Mus.* 14 : 25-31) have pointed out, the holotype of *Mus canguru* is the 38 pound specimen obtained by Cook's party, in the collection recorded by Hawkesworth (1773, *An account of the voyage . . . in the Southern Hemisphere . . . by . . . Captain Cook* 3). The results of Kirkpatrick (in press, *Qd. J. Agric. Sci.* 20) on the correlation of stages of dental eruption with weights of large macropodids indicate that a Grey Kangaroo, with a cranium such as the Hunterian specimen described by Owen (1853, *Descriptive Catalogue of the Osteological Series . . . Museum . . . Royal College of Surgeons of England* 1 : 322) and figured by Morrison-Scott and Sawyer (1950, *Bull. Brit. Mus. Nat. Hist.* 1 : plate 5) would normally weigh 72 ± 9 pounds, with an observed range of 72 ± 20 pounds. On this basis, it is suggested that this cranium did not belong to the holotype. On the other hand, if the lower cheek-teeth of the skull of the Grey Wallaroo depicted in Nathaniel Dance's drawing, reproduced by Morrison-Scott and Sawyer (1950, plate 4) are interpreted, as has been done by Kirkpatrick (*loc. cit.*) as P_3 dP_4 M_1 M_2 , and not P_4 M_1 M_2 M_3 (by analogy with the designation of the upper cheek-teeth by Calaby *et al.* (*loc. cit.*)), then the animal on this basis would normally have weighed 40 ± 7 pounds. It is therefore considered more probable that the Wallaroo skull drawn by Dance belonged to the holotype of *Mus canguru*, and the Hunterian cranium to the 84 pound animal mentioned in the account of Hawkesworth (*loc. cit.*). It might be pertinent to add that a Grey Wallaroo with cheek-teeth as assigned by Calaby *et al.* (*loc. cit.*) would normally weigh 61 ± 7 pounds.

This interpretation of the stage of dental eruption, indicated in Dance's drawing of the Grey Wallaroo skull, is based on the shape of the premolar and its size relative to the first molariform tooth, the lack of wear on the lower incisors, and the relative depth of the ramus. Unpublished work (R. H. Kirkpatrick) indicates the exposure of cementum on the root of I^3 is not unusual in prepared skulls of young macropodids with fully erupted incisors. Similarly the portrayed development of the supraorbital ridges is not considered anomalous for a young male Grey Wallaroo of weight 38 pounds.

It is conceded that the obvious imperfections in Dance's drawing weaken any detailed argument on many of the characters depicted.

We would therefore submit to the Commission that:

1. With reference to our interpretation of the original usage of the name *Mus canguru* Statius Müller, 1776, for the Grey Wallaroo it would be more desirable to designate as the neotype a young Grey Wallaroo from the Cooktown area. We nominate the Queensland Museum specimen J.10734, a young male of weight 20 pounds. *Jaculus giganteus* Erxleben, 1777 (*Syst. Règn. Anim.* : 409) is to be maintained as an objective synonym of *Mus canguru*.
2. To conserve the generic name *Macropus* for the Grey Kangaroo, it will be necessary then to designate a Grey Kangaroo as the lectotype of *Macropus giganteus* Shaw, 1790. Among the original syntypic material, the Hunterian specimen figured by Morrison-Scott and Sawyer (*loc. cit.*) is available for this purpose, and for a neotype, since the above specimen has been destroyed, Queens-

land Museum specimen, J.10749, from the Cookstown area, figured by Calaby *et al.* (1962, pls. 5-7) is designated.

3. As the generic distinction between the Grey Kangaroo and Grey Wallaroo is supported by us, the question of homonymy between *Jaculus giganteus* Erxleben, 1777, and *Macropus giganteus* Shaw, 1790, is held not to arise.

We support the request for a ruling, but now ask the Commission to:

- (1) place the following specific names on the Official List of Specific Names in Zoology:
 - (a) *canguru* Statius Müller, 1776, as published in the binomen *Mus canguru*, as defined by our neotype designated in paragraph 1 above.
 - (b) *giganteus* Shaw, 1790, as published in the binomen *Macropus giganteus*, as defined by our neotype designated in paragraph 2 above.
- (2) place the generic name *Macropus* Shaw, 1790 (gender : masculine), type species, by monotypy, *Macropus giganteus* Shaw, 1790, on the Official List of Generic Names in Zoology.

By Ernst Mayr (*Museum of Comparative Zoology, Harvard College, Cambridge, Mass., U.S.A.*)

I am frankly puzzled about the recommendation 2(b) in this application. On page 379 the Commission is requested to place the name *major* Shaw, 1800, on the Official List, and yet in paragraph 7, on page 377, it states that this same name *major* is an objective synonym of *Mus canguru*. I do feel that this should be clarified before the Commission can vote on this request.

By Henning Lemche (*Universitets Zoologiske Museum, Copenhagen, Denmark*)

It is stated by the applicants that the name *Macropus giganteus* Shaw is universally accepted as a junior synonym of *Mus canguru* Statius Müller—but also that there is no agreement on the applicability of the name *Mus canguru*. How can a synonymisation be made without knowing what one of the names involved stands for?

Also, if I read the application correctly, the much misunderstood name *Mus canguru* Statius Müller—apparently a nomen dubium—is now asked to be validated through a neotype selection so that it can be substituted for the well-known name *Macropus giganteus* Shaw, 1790, type by monotypy of *Macropus* Shaw, 1790. Why is it that the Commission is asked to reintroduce the specific name *canguru* Statius Müller? Is it generally accepted now?

By W. D. L. Ride (*Western Australian Museum, Perth*)

1. (a) Replying to Commissioner Lemche's query *Mus canguru* Statius Müller and *Jaculus giganteus* Erxleben are objective synonyms (the latter being a replacement name for the former), as are *Macropus giganteus* Shaw and *Macropus major* Shaw (for the same reason). *M. giganteus* and *M. canguru* are also objective synonyms through the selection of the holotype of *M. canguru* Statius Müller as the lectotype of *M. giganteus* Shaw (Ride, J. Roy. Soc. W. Aust. 1963, p. 126).
- (b) Our proposal (*Bull. zool. Nomencl.* 20, pt. 5, p. 376) was based on the belief that the animal species described by Statius Müller as *Mus canguru* is the Grey Kangaroo and, since its junior objective synonym *M. giganteus* Shaw is the type species of *Macropus*, it attempts to achieve stability through selecting an undoubted Grey Kangaroo, collected at the type locality, as its neotype.
2. (a) With regard to the proposal of Kirkpatrick and Woods, Kirkpatrick's work suggests that it is even more likely that the species originally described as *Mus canguru* is a Grey Wallaroo (or Hill Kangaroo). The name *Macropus* (or *Osphranter*) *robustus* Gould, 1841, has been used invariably for this species.
- (b) There are two reasons as to why I cannot agree with their solution to the problem. The first is that it upsets the very stable name *robustus* (see 5 and 6 below); and the second is that whether Kirkpatrick and Woods

- support the generic distinction between *Macropus* and *Osphranter* or not, the names *Jaculus giganteus* Erxleben and *Macropus giganteus* Shaw are secondary homonyms through their publication as subjective synonyms of *Macropus giganteus* Zimmerman prior to 1960 (Thomas 1888, p. 15 and other authors) and must be rejected permanently (Art. 59).
3. It would now seem that the Commission has three alternatives if it is to retain *Macropus* for the Grey Kangaroo.
 - (a) To proceed in an arbitrary fashion to recognize a specimen of the Grey Kangaroo as the neotype of *Mus canguru* (the original proposal of Calaby, Mack & Ride).
 - (b) To use the plenary powers to set aside the designation by Ride of a lectotype for *Macropus giganteus* Shaw in favour of the lectotype and neotypes proposed by Kirkpatrick and Woods, and declare that the citation (by Thomas 1888, p. 15, and other authors) of the names *Jaculus giganteus* Erxleben (or other usages of *gigantaeus*) and *Macropus giganteus* Shaw in synonymy under the generic name *Macropus* does not result in secondary homonymy between them. (This achieves the result desired by Kirkpatrick and Woods).
 - (c) To use the plenary powers to set aside *M. canguru* Statius Müller and *J. giganteus* Erxleben and nominate as the neotype of *Macropus giganteus* Shaw an undoubted specimen of a Grey Kangaroo.
 4. Kirkpatrick & Woods and ourselves are agreed that if a Grey Kangaroo is to be used as a neotype, it should be the specimen nominated by Calaby, Mack & Ride (1962, Mem. Qd. Mus. 14 : 25-31).
 5. Although the proposals (in 4 above) all result in stability for *Macropus*, they are not identical in their effect upon the species names. The results of their application would be
 - (a) The Grey Kangaroo would be *Macropus canguru* Statius Müller; the Grey Wallaroo would be *Osphranter* (or *Macropus*) *robustus* Gould;
 - (b) The Grey Kangaroo would be *Macropus giganteus* Shaw; the Grey Wallaroo would be *Osphranter* (or *Macropus*) *canguru* Statius Müller;
 - (c) The Grey Kangaroo would be *Macropus giganteus* Shaw; the Grey Wallaroo would be *Osphranter* (or *Macropus*) *robustus* Gould.
 6. So that the Commission may decide between these on grounds of usage, I have examined the relevant literature and present an analysis below. Since the Whiptail Wallaby is involved in the case as originally presented (*Bull. zool. Nomencl.* Vol. 20 pp. 376-379) it is included here.

| Publications Since 1888 | Grey Kangaroo | Whiptail Wallaby | Grey Wallaroo |
|---|------------------|---------------------|------------------|
| A. Purely Taxonomic Works | | | |
| 1 Thomas 1888-1909 Cat. Marsup. in B.M.(N.H.) and papers | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 2 Spencer 1896 Horn Expedition | <i>giganteus</i> | — — | <i>robustus</i> |
| 3 Bensley 1902 Trans. Linn. Soc. Lond. | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 4 Cabrera 1919 Genera Mammalium | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |

| Publications Since 1888 | Grey Kangaroo | Whiptail Wallaby | Grey Wallaroo |
|--|------------------|---------------------|------------------|
| 5 Simpson 1930 Post Mesozoic Mammalia. Foss. Catalogus. | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 6 Finlayson 1931-1964 papers | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 7 Glauert 1933 J. roy. Soc. W. Aust. | <i>giganteus</i> | — | <i>robustus</i> |
| 8 Iredale & Troughton 1934 Checklist Aust. Mammalia | <i>major</i> | <i>elegans*</i> | <i>robustus</i> |
| 9 Troughton Post 1937 papers | <i>major</i> | <i>canguru</i> | <i>robustus</i> |
| 10 Raven 1935-1946 papers | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 11 Tate 1948 Macropodidae Bull. Amer. M. Nat. Hist. | <i>canguru</i> | <i>parryi</i> | <i>robustus</i> |
| 12 Morrison-Scott & Sawyer 1950 | <i>canguru</i> | <i>parryi</i> | <i>robustus</i> |
| 13 Ride 1957-1964 papers | <i>canguru</i> | <i>parryi</i> | <i>robustus</i> |
| B. Regional and Popular Works | | | |
| 1 Lydekker 1894 Marsupials: Handbook | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 2 Lucas & Le Souef 1909 Animals of Australia | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 3 Scott & Lord 1924 Vertebrates of Tasmania | <i>giganteus</i> | — | — |

* Prior to 1888 *elegans* was used in the combination *Macropus elegans* for more than one species of wallaby. There are:

M. elegans Lambert 1807, a *nomen dubium* which is dismissed as such by all authors since 1888 except Iredale & Troughton who ascribe it to the Whiptail. Recently Troughton has used it for southern populations of the Whiptail (he uses *canguru* for its northern populations).

M. elegans Cuvier 1817, a junior homonym of *M. elegans* Lambert and a synonym of *Kangurus fasciatus* Peron & Lesueur, 1807, the banded hare-wallaby.

According to Thomas 1888, p. 33, *elegans* has also been used in combination with *Halmaurus* (an objective synonym of *Macropus*) for the Eastern Brush Wallaby by Gray 1841 and Gerrard 1862.

| Publications Since 1888 | Grey Kangaroo | Whiptail Wallaby | Grey Walleroo |
|---|---|---------------------|------------------|
| 4 Wood Jones 1924 Mammals of South Australia | <i>giganteus</i> | — | <i>robustus</i> |
| 5 Le Souef, Burrell & Troughton Wild Animals of Australasia | <i>giganteus</i> | <i>parryi</i> | <i>robustus</i> |
| 6 Troughton 1941 Furred Animals of Australia | <i>major</i> | <i>canguru</i> | <i>robustus</i> |
| 7 Carter, Hill & Tate 1945 Mammals of the Pacific World | <i>major</i> | — | — |
| 8 Guiler 1960 Marsupials of Tasmania | <i>giganteus</i> | — | — |
| 9 Marlow 1962 Marsupials of Australia | <i>major</i> | <i>parryi</i> | <i>robustus</i> |
| 10 Burton 1962 Syst. Dict. Mammals | <i>major</i> | — | — |
| C. Student texts, etc. | | | |
| 1 Cambridge Nat. Hist. 1902 | both <i>giganteus</i> and <i>major</i> | — | — |
| 2 Grassé et al. Traité de Zool. 1945 | <i>canguru</i> | — | <i>robustus</i> |
| 3 Haltenorth in Kükenthal Handbuch der Zool. 1958 | <i>gigantea</i> | <i>canguru</i> | <i>robustus</i> |
| 4 Parker & Haswell, Textbook of Zool. 1962 | <i>canguru</i> | — | — |
| 7. Conclusions: | | | |
| (a) Prior to 1934 <i>giganteus</i> , <i>parryi</i> and <i>robustus</i> were universally and uniformly applied. Since that time, <i>canguru</i> has been applied both to the Grey Kangaroo and the Whiptail (and now by Kirkpatrick and Woods to the Grey Wallaroo). | | | |
| (b) <i>robustus</i> is completely unambiguous having been continuously applied to no animal but the Grey Wallaroo from 1888 to the present. | | | |

- (c) *giganteus* and *major* are unambiguous having been applied to no animal but the Grey Kangaroo. Of these *giganteus* has been most used.
- (d) *parryi* and *elegans* are unambiguous in the literature since 1888 having been applied to no other animal but the Whiptail Wallaby. Of these *parryi* has been used by all but one author and prior to 1888 *elegans* has been used in an ambiguous fashion.
8. Accordingly, I now submit a revised application in the name of Calaby and myself* requesting the Commission to:
- (1) Use the plenary powers to set aside:
 - (a) for the purposes of Priority but not Homonymy *M. canguru* Statius Müller 1776 and all usages of *canguru* (and its various spellings *kangaru*, *kanguro*, *kanguru*, *caenguru*, *cangaru*, *cangura*) in the combinations *Mus*, *Yerboa*, *Jaculus*, *Zerbua*, *Didelphis*, *Didelphys*, and *Macropus*.
 - (b) for the purposes of both Priority and Homonymy *Jaculus giganteus* Erxleben 1777 and all usages of *giganteus* in the combinations *Yerboa*, *Jaculus*, *Didelphis*, and *Didelphys* prior to 1790.
 - (c) and place all the above names on the Official Index of Rejected and Invalid species-group names in Zoology.
 - (2) Place the generic name *Macropus* Shaw, 1790 (gender : masculine), type-species, by monotypy, *Macropus giganteus* Shaw, 1790 on the Official List of Generic Names in Zoology;
 - (3) Place the following specific name on the Official List of Specific Names in Zoology:
giganteus Shaw 1790 as published in the binomen *Macropus giganteus* as defined by a neotype, i.e., the specimen nominated as the neotype of *Mus canguru* Statius Müller in Calaby, Mack & Ride (1962, Mem. Qd. Mus. 14 : 25-31, pls. V-VIII).
- Macropus major* Shaw, 1800
9. (a) Regarding the enquiry from Commissioner Mayr on our request to have *major* preserved for use for the Grey Kangaroo of the Sydney District, a brief explanation was included in our original submission but an editorial reshuffle inadvertently led to its omission. We stated that *Macropus major* Shaw 1800 is in current use for the New South Wales subspecies of the Grey Kangaroo and has been so used for 25 years and we requested the Commission to preserve it for this reason. We should have included a request for the use of the plenary powers here but omitted to do so.
- (b) The history of this case is that Iredale & Troughton's 1934 action in making *canguru* and *giganteus* nomina dubia (and subsequently applying them to the Whiptail) led them also to use *major* (actually an objective synonym of *Macropus giganteus* Shaw) for the Grey Kangaroo. To this they applied a type locality of Sydney, New South Wales. This has been followed by most authors: some even using it in a subspecific sense for the Grey Kangaroo of the Sydney District in combination with *canguru* (e.g. Tate 1948, Bull. Amer. Mus. Nat. Hist.) or with *giganteus* (e.g. Haltenorth in Kükenthal Handbuch der Zool. 1958). We consider it desirable that this usage should be maintained.
10. Accordingly we recommend (as a separate issue from that concerning *M. canguru* and *M. giganteus* above) that the Commission:

* Mr. George Mack died on 24th October, 1963.

- (a) use its plenary powers to declare that *M. giganteus* Shaw and *M. major* Shaw are not objective synonyms and may have separate type localities and type specimens.
 - (b) place on the Official List of Specific Names in Zoology the name *major* Shaw, 1800, as published in the binomen *Macropus major* (type locality Sydney, New South Wales, as restricted by Iredale & Troughton 1934, and supported by Tate 1948).
11. We request that the action set out in 8 and 10 above should replace Section 15 of our former application. It will be noted that mention of the Family-Group Name MACROPODIDAE has been deleted. This will form the subject of a separate application respecting all family-group names in PHALANGEROIDEA.

By E. Le G. Troughton and Donald F. McMichael (*The Australian Museum, Sydney*).

The proposals of Calaby, Mack and Ride are claimed to bring stability to the nomenclature of the eastern Australian Kangaroos. In support of these proposals certain claims are made and certain actions proposed which, in our opinion, are not upheld by the facts of the case, and in some cases are not in conformity with the Articles and Recommendations of the International Code of Zoological Nomenclature. Indeed, one of the contributing factors to the complexity of the case is largely the result of the action of Ride (1963) which unnecessarily links the generic name *Macropus* to the specific name *canguru* Müller, and we propose alternative actions which will yield results more in keeping with the current taxonomic position and which, at the same time, are in conformity with the actual taxa originally described by the early workers.

There are two quite separate matters to be determined. These are:

- (A) The type species of the nominal genus *Macropus* Shaw, 1790, and the identity of that species.
- (B) The identity of *Mus canguru* Statius Müller, 1776 (Captain Cook's Kangaroo).
 - (a) The type species of the nominal genus *Macropus* Shaw, 1790, and the identity of that species

The genus *Macropus* Shaw, 1790 (which, along with the specific name *M. giganteus* should probably be attributed to Shaw and Nodder, since the two names appear jointly on the title page and there is no evidence in the work that Shaw alone was responsible for both the names and the conditions which make them available) is unquestionably based on only one nominal species, viz. *Macropus giganteus* Shaw, 1790, as Calaby, Mack and Ride claim (1963, p. 377, par. 6). This species is therefore the type species of *Macropus* by monotypy. However, it is clear from the original work that Shaw's species *giganteus* is a composite, which included all macropods known at the time from eastern Australia. Among these were the Great Grey Kangaroo, clearly illustrated in the plate accompanying Shaw's first use of the name, and also all the animals seen by Captain Cook's party. We believe that Ride's action (1963, p. 126) in selecting as lectotype of *Macropus giganteus* Shaw "the holotype of *Mus canguru* Statius Müller" complicated the matter, because it unnecessarily linked the generic name *Macropus* Shaw with the identity of Captain Cook's Kangaroo, and furthermore his action is not in conformity with Recommendation 74A of the International Code, since:

(a) There has, for more than 25 years, been controversy as to the identity of *Mus canguru*, and even though its holotype was undoubtedly one of the syntypes of *M. giganteus* and thus available for selection, it does not now exist and it is not known that it was ever illustrated.

(b) The name *giganteus* Shaw and its replacement name *major* Shaw, 1800, have always been applied to the Great Grey Kangaroo, so that in order to "preserve stability of nomenclature" a syntype which is undoubtedly a Great Grey Kangaroo should have been chosen by Ride as lectotype. Such a syntype was available, viz. the specimen figured by Shaw (1790, pl. 33).

An added reason why this should have been chosen as lectotype is the fact that it is the specimen which Shaw was actually describing. This is born out only by the title of the work, "The Naturalist's Miscellany, or Coloured Figures of Natural Objects, Drawn and Described from Nature". (Our italics). This specimen is unquestionably a Great Grey Kangaroo, and must have been drawn from a living specimen obtained at the recently established colony at Port Jackson (Sydney). Numbers of living specimens of the Great Grey Kangaroo were returned to England very soon after settlement as the records prove.

We therefore ask the International Commission:

(a) To set aside Ride's selection of the "holotype of *Mus canguru* S. Müller" as the lectotype of *Macropus giganteus* Shaw.

(b) To designate instead the specimen figured by Shaw (1790, pl. 33) as the lectotype of *Macropus giganteus* Shaw, 1790, for the reasons stated above.

If this is done, the specific name *giganteus* Shaw, 1790, will be available for the Great Grey Kangaroo and *Macropus major* Shaw, 1800, will be an available, junior objective synonym of *M. giganteus* Shaw.

If it is felt, that in the interests of stability, the name *Macropus major* should be retained for the Great Grey Kangaroo (since it has been in use since 1934) then the name *Macropus giganteus* Shaw should be suppressed by the Commission in favour of *M. major* Shaw, its junior objective synonym. In view of the fact that the name *giganteus* is also involved in the synonymy of *Mus canguru*, though in a different combination and with different authorship, the latter course is the one we recommend.

(b) The identity of *Mus Canguru* Statius Müller, 1776, Captain Cook's Kangaroo

Calaby, Mack and Ride (1963, p.376, par. 1) claim that *Macropus giganteus* Shaw, 1790, is universally accepted as a junior synonym of *Mus canguru* Müller. This we emphatically deny, as is quite clear from the fact that the name was specifically excluded from the strict synonymy of Captain Cook's Kangaroo in Iredale and Troughton's Checklist (1934, p. 55) because the description was obviously a composite, and the name was not listed in the synonymy of *Wallabia canguru* (Müller) by Iredale and Troughton (1937, p. 70). The identity of *Mus canguru* Müller (of which there can be no doubt that *Jaculus giganteus* Erxleben and *Didelphys gigantea* Schreber are synonyms, but neither of which preoccupy *Macropus giganteus* Shaw) has been the subject of extensive discussion in literature. The arguments of Iredale and Troughton are contained in their papers on the subject (1925, 1937 and 1962). We submit that these papers clearly establish that the 38lb. animal shot by Cook's party, which is undoubtedly the holotype of *Mus canguru* Müller, was in fact a Whiptail Wallaby, of which a manuscript description was written at the time by Solander and which was published by Iredale and Troughton in 1925. We consider that Calaby, Mack and Ride's contention that the holotype was a Great Grey Kangaroo has been completely refuted by Iredale and Troughton's evidence. In order to stabilise the nomenclature of this group of animals in accordance with the facts of the case as set out by Iredale and Troughton in their papers, we submit the following comments for consideration by the Commission.

We oppose the designation of the Queensland and Museum specimen No. J.10749 as Neotype of *Mus canguru* Müller on the grounds that its selection does not conform with Article 75 (c) of the Code, in particular, with paragraphs 4 and 5. These state that a Neotype is validly designated only when it is published with . . . evidence that the neotype is consistent with what is known of the original type-material, from its description and from other sources . . . evidence that the neotype came as nearly as practicable from the original type-locality.

It is clear from the papers of Iredale and Troughton that there are compelling reasons to believe that a Great Grey Kangaroo is not consistent with what is known of the original type material. In a previous publication Calaby, Mack and Ride (1962, p. 30) stated that they proposed to ask "that the specimen [whose skull was] given by Sir

Joseph Banks to John Hunter and became No. 3703 in the collections of the Royal College of Surgeons" be declared to be the holotype of *Mus canguru* Müller. This was in fact not done in their subsequent application to the International Commission, but it is clear that their selection of Queensland Museum specimen No. J.10749 as proposed neotype is based on the fact that it is a Great Grey Kangaroo of roughly equal age to the Banks/Hunter skull (which is known to have been destroyed). In view of the importance which has been placed on this skull, we wish to present the following evidence which we believe throws so much doubt on its authenticity as to make it worthless in evidence.

(a) The photograph of the skull of a Great Grey Kangaroo (No. 1732 in Owen's Catalogue of the Royal College of Surgeons Osteological Series) published by Morrison-Scott and Sawyer (1950, pl. 5) proves it to represent a mismatched cranium and mandible, showing that at least two skulls of *similar size* were available at the time of cataloguing, thus casting doubt on the authenticity of either part. Subsequent numbering of the cranial part (No. 3703) shown in the photograph does not confirm its authenticity since the renumbering took place at the time Flower's R.C.S. Catalogue (1884) was prepared some 30 years later.

(b) No statement as to the actual origin of this Hunterian skull is extant in either Banks' or Hunter's handwriting. This view is reinforced by Banks' statement in a letter to the Comte de Lauraguais in 1771 (Mitchell Library MS, Beaglehole, 1962, pp. 328-329) that "I have put all the Papers relative to y^e adventure of it into y^e hands of Dr. Hawkersworth [*sic*] who I doubt not will do justice to y^e work . . .". It seems incredible that Banks, aware of Solander's description of the original specimen, should fail either to mention it or tender any relevant parts in his possession, thus leaving Hawkesworth solely dependent upon his Narrative and the Parkinson drawings for the descriptive matter upon which *Mus canguru* S. Müller is indubitably based.

What positive evidence is there regarding the origin of the Hunterian skull (Owen's Catalogue No. 1732). None whatever. The only link between this skull and that which Hunter (in White, 1790) said he was "favoured with" by Sir Joseph Banks, is the footnote in Owen's edition of the Hunter papers (1861, p. 250). This specimen may have been the one referred to by Hunter or it may not. We have only Owen's indication to rely on, without original labels or other verifiable evidence.

(c) Even if it were the skull referred to by Hunter, there is no proof that it came from Cook's voyages. Hunter (in White) simply states in reference to the Kangaroo that "the only parts at first brought home were some skins and skulls". What he meant by the phrase "at first brought home" is obviously debatable, but it could easily and with good reason be interpreted as meaning *brought to England after the settlement at Port Jackson*. That skins and skulls were sent to England soon after settlement is clearly established from the published *Historical Records of New South Wales*, where it is shown that numerous specimens (alive and dead) were sent home prior to 1790. Among these were two specimens shipped to Sir Joseph Banks on the "Golden Grove" in November, 1788 (*Historical Records*, vol. 1, pt. 2., p. 221). Another fourteen kangaroo specimens, as noted in a memo to Mr. Nepean from the Home Department, reached England in the "Golden Grove" by November, 1779, (*Hist. Records*, p. 283) and we know that the French Botanist, Broussonet acknowledged receipt of a kangaroo from Banks as early as July, 1789 (Dawson, 1958, p. 166).

Iredale & Troughton have demonstrated that certain major diagnostic characters of the holotype of *Mus canguru* Müller are in direct contrast with those of the Great Grey Kangaroo, as evidenced in Solander's M.S. field description which can legitimately be used as evidence on the diagnostic characters of the Holotype by virtue of Article 75 (c) par. 4., which admits the use of "other sources" apart from the original description. Characters conforming with the identity of the Holotype as a Whiptail Wallaby, in contrast with those of a Great Grey Kangaroo, as already stressed by Iredale & Troughton, are:

(a) The rhinarium (or muzzle) according to Solander's description (as accepted by Raven *et al.*) was "bare between the nostrils and the skin covered with very black fine wrinkles", a characteristic of the Whiptail Wallaby. In the Great

Grey, the rostral fur extends down over the muzzle to the philtrum-base so that the rhinarium is closely haired *between* the nostril rims, a character diagnostic of all members of the Great Grey group.

- (b) Analysis of Solander's description of the dentition indicates that the 3rd upper incisor was simply bilobate as in the wallaby. Alternatively, the description does not establish the presence of the anterior "double-ridge" on the outer surface of the 3rd incisor, which distinguishes the Great Grey absolutely from all other macropods.
- (c) The original comparisons of the "slender made" kangaroo with a greyhound is indicative of the body and tail proportions of a Whiptail Wallaby, rather than those of even a sub-adult Great Grey, while the maximum weight (38 lb.) of the Holotype is within the range of 32–49 lb., recorded for the Whiptail Wallaby.
- (d) The evenly cylindrical form of the tail, as shown in the Parkinson sketches (Morrison-Scott & Sawyer) and the Hawkesworth figure (basis of the Müller illustration), conforms to the "whip-like" tail of the wallaby in contrast with the heavily-based and relatively shorter tail of the Great Grey. (See Raven, 1939, Figs. 1–3).
- (e) The original descriptions of the general colour as "ashy to mouse-grey" conforms with both northern and southern specimens of the Whiptail Wallaby, rather than the grey-brown of the Great Grey. Absence of the Whiptail facial markings in the Hawkesworth figure has no diagnostic significance since there is also no sign of the blackish haired apical third of the tail characteristic of the Great Grey (see Raven, 1939, fig. 3).

Iredale & Troughton (1962, pp. 180–181) have also detailed reasons why they consider that a Great Grey Kangaroo is not acceptable as Neotype on the grounds that such an animal could not have come "as nearly as practicable from the original type locality".

Briefly this is that, although the Great Grey has in recent years extended its range as the result of clearing of land for grazing, and thus has been collected south of the Endeavour River, it has not been recorded or taken closer than 22 miles from the River. There is no proof at all that it ever lived within the restricted area near Cook's landing place, bounded by the Endeavour River, where the Holotype was shot by 2nd Lieutenant Gore, on a day's outing from the ship, on July 14th, 1770. (Beaglehole, 1962, pp. 93–94).

Therefore, as an alternative to Calaby, Mack and Ride's proposals to confirm their selection of a Neotype from a locality beyond the immediate vicinity of the mouth of the Endeavour River, we wish to submit the following counter proposals which, in our opinion are more compatible with the International Code and with the true identity of Captain Cook's Kangaroo.

We therefore:

- (a) Ask the Commission to set aside Calaby, Mack, and Ride's designation (1962, p. 30 : 1963, p. 378) of a Neotype of *Mus canguru* Müller.
- (b) Ask the Commission to accept instead as Neotype of *Mus canguru* Müller a specimen of the Whiptail Wallaby in the Australian Museum, Sydney, registered No. M.4607, which was described by Iredale & Troughton (1937, p. 17) under the name *Wallabia canguru* (Müller, 1776) from within 12 miles of the town of Cookstown, Queensland.

If these proposals are accepted, the valid specific name of the Whiptail Wallaby will be *canguru* Statius Müller, 1776. The generic placement of this species has been the subject of discussion in literature, but for the present purpose it is referable to the genus *Wallabia* Trouessart, 1905.

If our proposals in Section A of these submissions are adopted, then the name *Macropus major* Shaw, 1800, will still be available for the Great Grey Kangaroo, a name which all parties wish to retain.

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