

spots on the feathers of the upper surface rufous-buff instead of whitish yellow.

		Total length.	Culmen.	Wing.	Tail.	Tarsus.
		in.	in.	in.	in.	in.
<i>N. mandibularis</i>	♀ ad. ..	18·5	2·9	9·9	3·7	3·3
	♂ imm....	18·0	2·10	9·7	3·6	3·1
<i>N. caledonicus</i> ,	♂ ad. ....	19·5	3·5	11·5	4·1	3·3
<i>N. manillensis</i>	.....	21·0	3·6	12·6	4·8	3·8

#### 66. STERNA LONGIPENNIS.

*Sterna longipennis*, Nordm.; Salvad. *t. c.* iii. p. 439.

*a.* ♂ ad. Rubiana; 4. 3. 87. Bill black; legs black; feet black. Food, fish.

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March 20, 1888.

Henry Seebohm, Esq., F.Z.S., in the Chair.

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The following papers were read:—

#### 1. Note on the Classification of the *Ranidæ*.

By G. A. BOULENGER.

[Received February 10, 1888.]

When revising the arrangement of the tailless Batrachians for the second edition of the British Museum Catalogue (1882), I had very great difficulty in dealing with the subdivision of the large family *Ranidæ*. I had to abandon the Platy- and Oxydactyle character as a generic one, finding that, to say nothing of the complete intergradation which destroys its usefulness as an artificial character, it did not, by itself, express affinity, and that in consequence satisfactory series could not be formed upon the degree of dilatation or acumination of the digits. As an instance, I may refer to *Ranæ malabarica*, *galamensis*, *macrodactyla*, and *lateralis*, which are unquestionably very intimately related to such forms as constitute the platydactyle group *Hylorana* of certain authors (*R. erythræa*, *temporalis*, *chalconota*, &c.), and yet are more 'oxydactyle' than *Ranæ macrodon*, *kuhlii*, and many others which have by all authors, and very justly, been regarded as true *Ranæ*. I cannot see that the union of all these species, however numerous, under one genus, *Rana*, presents any serious inconvenience. On the contrary, the systematist should form well-defined genera, regardless of the



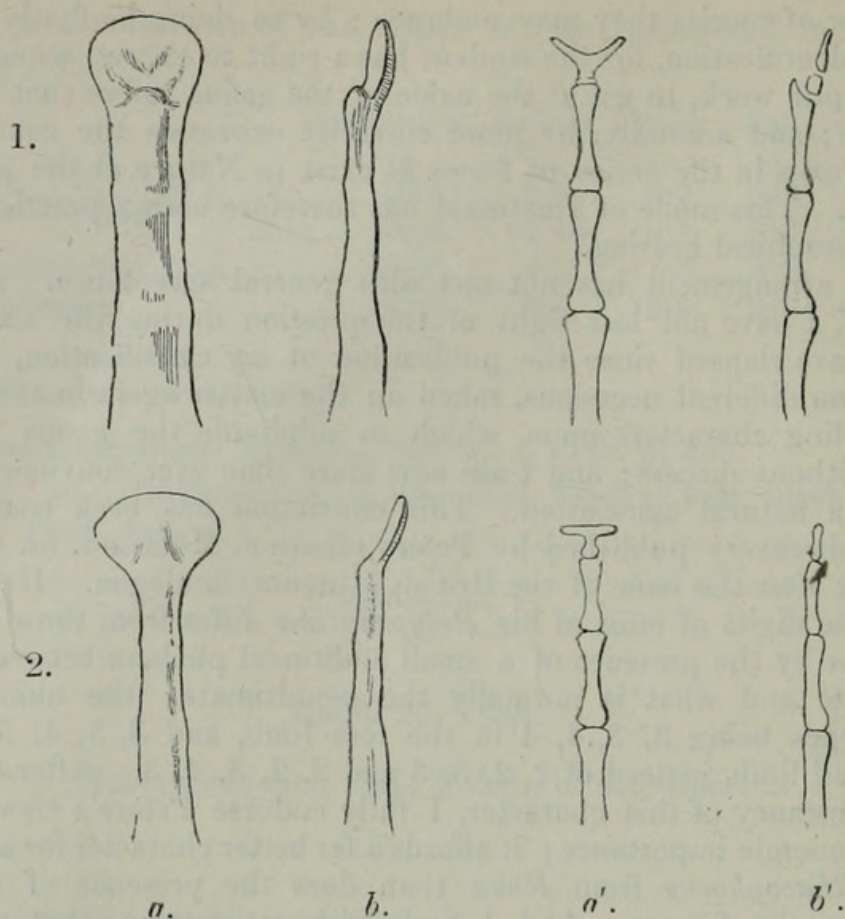
number of species they may embrace ; by so doing he firstly facilitates identification, for the student has a right to expect, when using a synoptic work, to get at the name of the genus before that of the species ; and secondly, he more correctly expresses the continuity and breaks in the series of forms as exist in Nature at the present period. This mode of treatment has therefore both a practical and a philosophical bearing.

My arrangement has not met with general acceptance. As for myself, I have not lost sight of the question during the six years that have elapsed since the publication of my classification, and I have, on different occasions, taken up the matter again in the hope of finding characters upon which to subdivide the genus *Rana*, but without success ; and I am now more than ever convinced that it is a natural association. This conviction has been confirmed by a discovery published by Peters (Reise n. Mossamb. iii. 1882), shortly after the issue of the British Museum Catalogue. He found that the digits of most of his *Polypedatinæ* differ from those of the *Raninæ* by the presence of a small additional phalanx between the ultimate and what is normally the penultimate ; the number of phalanges being 3, 3, 4, 4 in the fore limb, and 3, 3, 4, 5, 4 in the hind limb, instead of 2, 2, 3, 3 and 2, 2, 3, 4, 3. After testing the constancy of this character, I fully endorse Peters's view as to its taxonomic importance ; it affords a far better character for separating *Rhacophorus* from *Rana* than does the presence of a web between the fingers. And I find, with satisfaction, that all the species referred by me, from autoptic examination, to the genus *Rana* have the normal phalanges, irrespective of the presence or absence or size of the digital expansions. Two species which were formerly unknown to me, but of which specimens are now in the Museum, viz. *Hyla buergeri*, Schleg., and *Theloderma leprosum*, Tsch. (= *Polypedates leprosus*, Gthr.), must, in spite of their free fingers, be referred to *Rhacophorus*. I also find that *Cassina*, though oxydactyle, and therefore placed by Peters in his *Raninæ*, has the additional phalanx like its close ally *Hylambates* ; and that the genus *Ixalus*, as hitherto defined, is unnatural, the species *opisthorhodus*, Gthr., *silvaticus*, Blgr., *fuscus*, Blgr., *saxicola*, Jerd., and doubtless also *sarasinorum*, F. Müll., all from Southern India and Ceylon, standing in the same relation to *Rana* as the typical *Ixali* to *Rhacophorus*. For these species, characterized by the normal number of phalanges, I propose the generic name *Micrixalus*. Considering the importance of the character discovered by Peters, I would suggest the division of the *Ranidæ* into two groups, that which is characterized by the additional phalanx embracing the following genera :—

*Cassina*, Gir., *Hylambates*, A. Dum., *Rappia*, Gthr., *Megalixalus*, Gthr., *Rhacophorus*, Kuhl, *Chiromantis*, Ptrs., *Ixalus*, Tsch., and *Nyctixalus*, Blgr.

The following figures show that the character upon which these two groups are based is readily ascertainable.



1. Finger of *Rhacophorus maximus*.2. Finger of *Rana afghana*.

a. Upper view. b. Side view. a', b'. Skeleton.

I seize this opportunity to remark that the genus *Phyllobates*, Bibr., is a Ranoid, closely allied to and intermediate between *Hylaxalus*, Espada, and *Prostherapis*, Cope—differing from the former in the free toes, and from the latter in the notched tongue. The pectoral girdle of the type specimen of *Phyllobates bicolor*, Bibr., as well as of a specimen of *P. melanorhinus*, Berth., has been kindly examined at my request by Dr. Mocquard. That genus includes the following five species:—*P. bicolor*, Bibr., *limbatus*, Cope, *melanorhinus*, Berth., *trinitatis*, Garm., and *trilineatus*, Blgr.

There probably exists, however, a group of Cystignathoids answering to Cope's definition of *Phyllobates* (Journ. Ac. Philad. vi. 1866, p. 96)—that is, *Hylodes* without vomerine teeth, which would bear the name *Syrrhopus*, Cope (Am. Nat. 1878, p. 253), and include *Malachylodes*, Cope, and *Hypodictyon*, Cope. Not having seen examples of any of the following species, I only suggest that they may be united provisionally under the term *Syrrhopus*, and with the generic definition given on p. 195 of my Catalogue:—*S. marnockii*, Cope, *leprus*, Cope, *cystignathoides*, Cope, *verrucipes*, Cope, *guttulatus*, Cope, *hylæformis*, Cope, *ridens*, Cope, *chalceus*, Ptrs., and *verruculatus*, Ptrs.



Boulenger, George Albert. 1888. "Note on the classification of the Ranidae." *Proceedings of the Zoological Society of London* 1888, 204–206.

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