



## XXI.—The Tree-Shrews of the *Tupaia belangeri-chinensis* group

Oldfield Thomas

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XXI.—*The Tree-Shrews of the Tupaia belangeri-chinensis Group*. By OLDFIELD THOMAS.

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IN Dr. M. W. Lyon's recently issued Monograph of the Tupaiidæ, the Tree-Shrews of Burma and the neighbouring countries are all placed provisionally under the heading of *Tupaia chinensis*, with the admission, however, that they "constitute a somewhat heterogeneous collection." Dr. Lyon also "strongly suspects that future collections will show that *Tupaia chinensis* is a subspecies of *T. belangeri*."

In connection with the receipt of three specimens of this group from Tengyueh (= Momein), Yunnan, nearly topotypes of *T. chinensis*, presented by Mr. E. B. Howell, I have taken the opportunity of examining all the specimens in the Museum, in order to try and clear up the one group of Tupaiidæ left unworked in Dr. Lyon's most valuable Monograph. Except a few recent additions, the specimens have all been examined and enumerated by Dr. Lyon, and their localities inserted in the map on p. 75 of his Monograph.

In the first place, in regard to Dr. Lyon's suspicion as to the specific distinction of *T. chinensis*, I may express my opinion that no satisfactory dividing-line between *T. belangeri* and *chinensis*, as species, can be found. Tenasserim specimens of *belangeri* grade imperceptibly through those of Chiengmai, Siam, into the typical *chinensis* of the Shan States and Yunnan; and I therefore propose to treat all the members of the group as subspecies of *T. belangeri*.

The specimens from Nepal, Sikhim, Cachar, Manipur, Paheng, and Chiengmai—some of which are referred by Dr. Lyon to *T. chinensis*—I should call *T. belangeri belangeri*, as they have some fulvous suffusion on the hinder back, while true *chinensis* is pale olive, quite without warmer suffusion posteriorly.

To *T. belangeri chinensis* I should refer the specimens from Tengyueh and Meechee, Yunnan, and a small series—mostly immature—from the Northern Shan States.

Then, from an intermediate locality in the "dry area" of Burma, we get a form with all the characteristics produced by such dry areas, and distinct enough to form a special subspecies. It may be called

*Tupaia belangeri siccata*, subsp. n.

General colour rather darker than "tawny olive," the head

olive-grey, the posterior back, as in true *belangeri*, with a fulvous suffusion. Shoulder-streaks unusually white, sharply defined, and conspicuous. Under surface white, with scarcely a tinge of buffy, the hairs white to their roots; inner aspect of limbs white, not grey-mixed, the inner side of the hind legs particularly strongly contrasted and markedly different from what is found in the other subspecies.

Skull with the bullæ rather larger than in other subspecies.

Dimensions of type given on p. 66 of Dr. Lyon's Monograph.

*Hab.* Zibugaung, Lower Chindwin.

*Type.* Male. B.M. no. 6. 7. 5. 1. Collected 15th January, 1906, and presented by Capt. A. Mears.

This form is readily distinguishable by its conspicuous white shoulder-stripe, chest, and inner side of hind limbs.

Passing eastwards again from the region inhabited by *belangeri* and *chinensis*, we find the Tree-Shrews becoming darker and more rufous, two series—from Mōngtse, Yunnan, and Nan, Siam, respectively—being both distinguished from the more western forms in this way. But they also differ from each other in various ways, and I therefore base on them the two following new subspecies:—

*Tupaia belangeri yunalis*, subsp. n.

Colour much darker than in *belangeri* and *chinensis*, the back more rufous, the rump more blackish grey, therefore in direct contrast to *belangeri*, in which the rump is more rufous than the back. General tone near "mummy-brown," but there is a variation towards the olive-grey of *chinensis*. Rump distinctly darker than back. Under surface grey, washed with whitish, though in some cases the whitish goes to the root of the hairs; but there is never the distinctly contrasted white of subsp. *siccata*. Shoulder-stripes inconspicuous, dull whitish.

Measurements on p. 66 of Dr. Lyon's paper.

*Hab.* S.E. Yunnan. Type from Mōng-tsze.

*Type.* Adult female. B.M. no. 12. 7. 25. 45. Collected 10th July, 1910, by H. Orii. Seven specimens.

*Tupaia belangeri laotum*, subsp. n.

General colour rufous brown ("Brussels brown," Ridgway), the rump blackish grey—therefore, again, in contrast to true *belangeri*, in which the fore-back is grey and the hind-back rufous. As compared with *yunalis* the colour is

browner and less "saturate." Shoulder-stripe well marked, more buffy than in *yunalis*.

Skull with slightly larger teeth, larger bullæ, and smaller zygomatic vacuities than in *yunalis*. The differences are all slight, but constant throughout the series available.

Dimensions on p. 66 of Dr. Lyon's paper,

*Hab.* Nan, Siam. Alt. 290 m,

*Type.* Adult female, B.M. no. 98.2.8.12. Original number 23. Collected 19th August, 1897, and presented by Th. H. Lyle, Esq. Eight specimens (five young).

These two eastern subspecies differ from the other forms by their darker colour and tendency to be blackish or dark greyish on the rump. From each other they differ very much as do *chinensis* and *belangeri*, and, in fact, they may be looked upon as eastern representatives of these subspecies respectively, *yunalis* of the olive-grey *chinensis* and *laotum* of the more fulvous *belangeri*, each pair being in about the same latitude.

As Dr. Lyon has carefully recorded where the types of all the various forms of the Tupaiidæ are preserved, I may take this opportunity of mentioning that the typical specimens of *Tupaia lacernata wilkinsoni*, *obscura*, and *longicauda*, and *T. ferruginea penangensis*, described by Messrs. Robinson and Kloss, and hitherto in Selangor, have now been transferred to the British Museum, in accordance with the enlightened policy pursued by the authorities of the Federated Malay States Museum in regard to the preservation of types. In a temperate climate like that of England types do not deteriorate in the same way as, however well taken care of, they do in a tropical one.

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XXII.—*British Fossil Crinoids*.—X, *Sycocrinus Austin*,  
*Lower Carboniferous*. By F. A. BATHER, F.R.S.

[Plate X.]

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PREVIOUS HISTORY.

The name *Sycocrinites* (or *Sycocrinus*), from *σῦκρον* a fig, was introduced by T. & T. Austin in October, 1842 (*Ann. & Mag. Nat. Hist.* vol. x. p. 111), for a genus with three species; *S. clausus*, *S. jacksoni*, *S. anapeptamenus*. In that paper neither genus nor species were described, diagnosed,

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