

known to have discontinued feeding its juveniles from 5 to 7 days before entering the flightless period. The Dippers, when pursued in this condition, attempted to evade capture by hiding among tumbled logs or in streamside vegetation, or by swimming away on or under the water. Balat (p. 262) found a partial molt in juveniles of *C. cinclus* in which the rectrices, remiges, and greater wing coverts are retained. On August 30 a fourth Dipper, believed to be a juvenile, was captured in a mist net. Body molt was in progress; the rectrices and remiges were not molting. The availability of water as an escape medium seems to permit the dipper to telescope its molt into a short, late summer period.—JOHN O. SULLIVAN, *Department of Zoology, University of Montana, Missoula, Montana, February 24, 1965.*

The Syrinxal Structure of the Asiatic Owl *Phodilus*.—The owls are divided into two families, the Tytonidae and the Strigidae, in most currently employed systems of classification. The reduction of these families to subfamilies by some authors does not alter the fact that the two are distinct assemblages evidently representing separate phyletic lines. The barn owls of the family Tytonidae in a number of respects stand well apart from the true owls. However, the genus *Phodilus*, which Peters (Birds World, 4, 1940:86) included in the Tytonidae but which Ridgway (U. S. Nat. Mus. Bull. 50, pt. 6, 1914:599–600) excluded, remains to be thoroughly studied in order to relate it properly to the two natural familial groups. I do not have material that would allow me to make a general evaluation of the problem of relationships, but dissection of the syrinx of *phodilus* has recently been possible, and it has revealed certain points of similarity and difference which will need to be taken into account later in drawing conclusions on affinities.

A body of *Phodilus badius*, preserved in formalin, was recently made available for study to Loye Miller and me through the kindness of Joe T. Marshall, Jr. The bird was a male, taken on April 26, 1964, by Ben King, at Chieng Khong, Chieng Rai, Thailand.

In studying the vocal apparatus of owls on several occasions (Condor, 36, 1934:204–213, with references to earlier literature; *ibid.*, 37, 1935:288; *ibid.*, 65, 1963:440–441; Auk, 64, 1947:133–135) I have been impressed with the fundamental similarity of structure of the syrinx among the genera of the Strigidae even though I was concerned with reporting certain specific and generic differences and sexual dimorphism in correlation with vocal differences. Initially in commenting on *Tyto* I mentioned but did not stress (1934, *op. cit.*:205, 211–212) its departure from the true owls in greater fusion of cartilaginous units, in the presence of a ligamentous connection between the bronchi, and in the lack of sexual dimorphism. These differences and others here to be reported do not appear in any of the true owls which I have examined (12 species of 9 genera).

A recently dissected specimen of a male *Tyto alba* permits elaboration and illustration (figs. 1, 2) of the following features which distinguish it from the Strigidae: (1) The bronchial tubes of *Tyto* are held together in parallel position in the region immediately behind the trachea rather than spreading laterally; this is accomplished by a strong ligament on the dorsal side. (2) The two semirings of the syrinx posterior to the pessulus are broadened at their dorsal ends and extensively fused with one another at both their dorsal and ventral tips and with the first complete bronchial ring anteriorly; this contrasts with parallel sided and unfused rings in the strigids. (3) The internal vibratile membrane does not show a thickened area opposite the ring on which the intrinsic tracheal muscle (*M. tracheolateralis*) attaches. (4) The mid-ventral area of the syrinx anterior to the ring on which this muscle attaches is a broad plate of cartilage, in which ring units are obliterated rather than a region of closely fitted but separate rings. (5) The expansion of the bronchial part of the syrinx at the point of muscle attachment reaches about 180 per cent of the bronchial diameter farther posteriorly rather than 200 per cent or greater as in the Strigidae.

When *Phodilus* is compared with *Tyto*, it unexpectedly shows distinct departures from it and yet no close conformity with the Strigidae. It has several peculiarities of its own. The important points in contrast with *Tyto* are: (1) There is less fusion of the rings of the syrinx on the dorsal side. (2) The pessulus is connected dorsally with a simple tracheal ring whereas it is connected in *Tyto* with a tracheal ring that has an anteriorly directed arch that invades the medial area of the adjacent anterior ring and interrupts the latter in the mid-line. (3) The internal membrane is more rounded and drumlike. (4) The *M. sternotrachealis* attaches to the trachea on a ring 11 units in

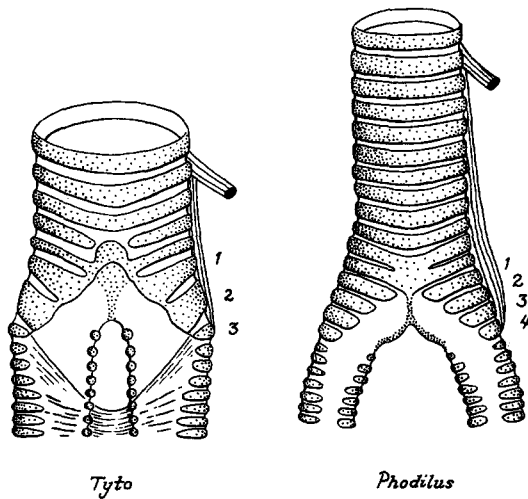


Fig. 1. Dorsal views, $\times 4$, of the syringes of the owl genera *Tyto* and *Phodilus*. The numbers at the right indicate the bronchial rings numbered posteriorly from the pessulus. Musculature is shown diagrammatically on right side only. Cartilage is represented by stippling.

front of the pessulus rather than on the 4th unit. (5) The bronchi are not bound in a parallel position by a ligament. In points 1, 2, and 5, *Phodilus* agrees with the Strigidae; point 4 is variable in the Strigidae. In point 3 there is an approach to the condition in the Strigidae but *Phodilus* is somewhat intermediate.

Phodilus like *Tyto* shows no thickening of the internal membrane at the point of greatest bronchial expansion. Also it has a relatively slight degree (170 per cent) of enlargement at the point of greatest expansion of the bronchus. It is similar to *Tyto* in the fusion of rings on the ventral side of the trachea and indeed surpasses it and thus diverges even more from the Strigidae than does *Tyto* in this respect.

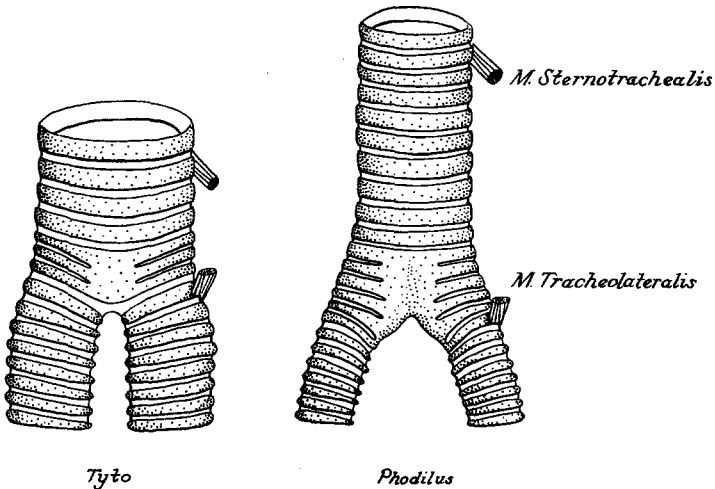


Fig. 2. Ventral views of syringes.

Features peculiar to *Phodilus* in contrast to all other owls examined is the extension of its bronchial rings so that they are much more nearly full rings, constituting about 5/6 of a circle rather than 3/5. Possibly related to this feature is the peculiar somewhat concave dorsal border of the tympanic membrane which is encroached upon by the bronchial rings.

The evidence from the structure of the syrinx indicates, then, that *Phodilus* has more points of resemblance to the Strigidae than to *Tyto* although there are some departures from the Strigidae which are suggestive of *Tyto*. *Phodilus* is not, however, clearly intermediate between them. The several features which are peculiar to it contrast with the relatively uniform structural plan of the Strigidae. It should be emphasized that these points of similarity and divergence must be weighed with many other features of morphologic evidence before definitive conclusions can be drawn about the affinities of *Phodilus* within the Strigiformes.—ALDEN H. MILLER, *Museum of Vertebrate Zoology, Berkeley, California, April 10, 1965.*

A Nest of the Double-banded Pygmy Tyrant.—The Double-banded Pygmy Tyrant (*Lophotriccus vitiuosus*) is one of the numerous, tiny flycatchers of the neotropical rain forest. It is olive green above and the feathers on the crown have dark centers and are elongated, forming a small crest. The tail is brown. The bird has a distinct yellowish double wing bar and the bend of the wing is yellow. The throat and breast are grayish white with narrow black shafts to the feathers. The lower breast and abdomen are pale yellow or whitish, which varies greatly in intensity. The wing is from 47 to 49 mm. long. The bird weighs from 6 to 7 gm.

This species is confined to southeastern Colombia, Surinam, French Guiana, northern Brazil, eastern Ecuador, and eastern Perú. The subspecies *guianensis* is found in Colombia, Surinam, and French Guiana.

In Surinam this flycatcher is a rather common bird in savanna forests and in dark parts of forests of the interior where it inhabits the undergrowth and lower branches of trees. Here it lives alone, and it would seldom be noticed if it were not for its often repeated, soft-sounding call note *tsch, tsch*. It eats small insects, as the gizzards of the specimens I collected contained: Coleoptera (Chrysomelidae, Curculionidae); Hemiptera, Homoptera (Cercopidae); Arachnoidea (Araneidae), and small Lepidoptera. Nothing seems to be known of its nesting habits or of its nest and eggs.



Fig. 1. Nest of the Double-banded Pygmy Tyrant (*Lophotriccus vitiuosus*). Photograph taken at Phedra, Surinam, September 13, 1964.