MORPHOLOGY OF THE BONY STAPES IN PHILEPITTA AND NEODREPAonis: NEW EVIDENCE FOR SUBOSCINE AFFINITIES.—Two species of asities (Philepitta) and two of false sunbirds (Neodrepanis) are the only members of the family Philepitididae of Madagascar. The asities are small, plump birds that vaguely resemble the pittas, but are entirely arboreal. The false sunbirds, on the other hand, so closely resemble the true African sunbirds (with their long decurved beaks and metallic gloss) that they were classified as members of the true sunbird family, Nectariniidae, until Amadon in 1951 (Oiseau Rev. Franc. Ornithol. 21: 59) showed that Neodrepanis was not an oscine on the basis of the syringeal musculature, but closely allied to Philepitta. Ames (1971, Peabody Mus. Nat. Hist. Bull. 37) confirmed these findings, stating that (p. 153), “The syringeal structure of both Philepitta and Neodrepanis is remarkably like that of the broadbills Smithornis and Psarisomus . . ., even to minute details of the cartilaginous elements, but the whole organ is relatively unspecialized.” He further states, “Whatever their affinities, the Philepittidae appear to have retained a primitive syrinx while most other passerines have evolved some modifications for song.” Ames (op. cit.) suggested that the very simple nature of the syrinx of Pitta provides little evidence for affinities of the Pittidae.

Thus the Philepittidae have been considered suboscin e on the basis of retained primitive characters of the syringeal musculature, rather than on the basis of shared derived characters. This paper presents evidence from the morphology of the bony stapes providing the first derived character to illustrate the suboscine affinities of Philepitta and Neodrepanis.

I have recently examined the morphology of the bony stapes in more than 1000 avian species and have discovered that while the oscine passerines have retained a morphology of the stapes resembling the primitive condition, with the flat footplate, the suboscines possess a derived morphology characterized by the presence of a large bulbous footplate area perforated by one (often one large and small) fenestra (Feduccia 1974, Auk 91: 427). In my previous paper (Feduccia op. cit.) I argued that this derived morphology was strong evidence for common ancestry
Fig. 1. Alizarin-stained stapes of A, Philepitta castanea and B, Neodrepanis sp. Both are from American Museum of Natural History alcoholic specimens Nos. 2230 and 2231, respectively. Both approximately × 50.

Behavioral evidence on skimmers’ evolutionary relationships.—The suborder Lari (Charadriiformes) is composed of the families Stercorariidae (skuas and jaegers), Rynchopidae (skimmers), and Laridae (gulls and terns). It is generally accepted that within this suborder the gulls and terns are more closely related to one another than either is to the skuas (A.O.U. 1957), but the evolutionary position of the skimmers within the suborder is less certain.

Schnell (1970a, 1970b) concluded that skimmers are more closely related to terns than to gulls or skuas, based on a phenetic study of skeletal and external characters, as did Zusi (1962, 1971) on the basis of a comparative study of anatomical and behavioral feeding adaptations. We feel that many of the anatomical similarities between skimmers and terns may be the result of convergence caused by similarities in flight and feeding behavior. Mayr (1969) suggested that any set of features arising after the invasion of a new food niche will evolve very rapidly and therefore are poor characters for basing hypotheses of evolutionary relationship.