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The affinities of the falconid genus *Spiziapteryx*.—The Spot-winged "Falconet," *Spiziapteryx circumcinctus*, the only species of its genus, is restricted to the rather dry chaco and monte areas of Argentina where it is apparently rare. It was first described in 1852 by Kaup, who placed it in the genus *Harpagus*, although he considered it distinct enough to merit its own subgenus for which he proposed the unfortunate name *Spiziapteryx*. Sclater (1862) briefly reviewed the history of this bird and ventured to doubt that it belonged with *Harpagus*, deeming it "safer to use for it the generic appellation *Spiziapteryx*, or leave it under the more general designation of *Falco circumcinctus*." Sharpe (1874) included *Spiziapteryx* in a subfamily Falconinae, which then embraced several genera of Accipitridae. He placed *Spiziapteryx* between the falconid genus *Polihierax* and *Falco novaezealandiae*, which species he placed in the monotypic genus *Harpa*. Martorelli (1900) discussed the relationships of *Spiziapteryx* and concluded that the bird was so distinct from *Harpagus* that it deserved its own subfamily, the "Spiziapteryxinae" (sic). His conclusions were based entirely on external features and his comparisons were evidently made chiefly with *Harpagus*, which is now known to belong to the Accipitridae.

The modern concept of the Falconidae and its various subfamilies has emerged largely through the work of Suschkin (1905). His study was based on the examination of skeletons of 140 species of Falconiformes. His list of material examined does not include *Spiziapteryx* and clearly his determination of its relationships was based on external characters only. Suschkin recognized four subfamilies of Falconidae: Herpetotherinae for the two primitive neotropical forest-dwelling genera *Herpetotheres* and *Micrastur*; Polyborinae for the exclusively New World caracaras of which four genera are usually recognized (*Polyborus*, *Phalcobaenus*, *Daptrius*, and *Milvago*); Falconinae for several genera now included in the single cosmopolitan

genus *Falco*; and Polihieracinae for the two Old World genera of falconets *Polihierax* and *Microhierax* along with the New World *Spiziapteryx*.

The treatment of Peters (1931) was essentially identical except that he included the neotropical genus *Gampsonyx* in the Polihieracinae. A similar classification was adopted by Hellmayr and Conover (1949: 288) who commented that *Spiziapteryx* seemed to have "very close affinities to *Gampsonyx*, *Polihierax*, *Microhierax*, and *Neohierax* [now usually included in *Polihierax*], and should be kept in the same group." Since then it has been shown that *Gampsonyx* does not belong in the Falconidae, and it is now thought to be a kite (Accipitridae) not far removed from *Elanus* (Friedmann 1950, Plótnick 1956, Clay 1958, Stresemann 1959, Brodkorb 1960).

The most recent classification of the Falconidae is that of Brown and Amadon (1968). They refrained from using formal subfamilial divisions of the family but instead recognized two major "groups" of falconids. The first of these, the "aberrant Neotropical falcons," contains *Herpetotheres*, *Micrastur*, and the four genera of caracaras. The second group comprises two subgroups; the true falcons (*Falco*) and the falconets (*Microhierax*, *Polihierax*, and *Spiziapteryx*). The genera of this last subgroup were thought to be closely related, *Spiziapteryx* being said "scarcely to be separated generically" from *Polihierax*.

The small size and the toothed bill of *Spiziapteryx*, together with the resemblance of its streaked crown and white rump to females of *Polihierax insignis*, probably account for its having been associated with the Polihieracinae rather than the neotropical endemics, none of which has a toothed bill. In contrast to the other members of the Polihieracinae, *Spiziapteryx* is not sexually dimorphic, does not have a distinctive juvenal plumage, and is heavily streaked below rather than immaculate. Taken by themselves, these differences would probably not be considered significant, but examination of three skeletons of *Spiziapteryx* in the Smithsonian Institution collections bears out the distinctiveness of the genus and reveals that it cannot be allied to the Polihieracinae but must instead be counted among the aberrant neotropical genera.

In *Spiziapteryx* the maxillopalatines are highly inflated and cancellous, largely filling the vacuity between the lacrimal and the rostrum. In this respect it agrees with *Herpetotheres*, *Micrastur*, and the caracaras and differs from *Falco*, *Polihierax*, and *Microhierax* in which the maxillopalatines are reduced noncancellous cups or shelves. The interorbital septum is less ossified in *Spiziapteryx* than in any of the other genera of falconids except the caracaras, to which it is similar. The development of the superciliary process of the lacrimal in *Spiziapteryx* is intermediate between the reduced condition characteristic of the caracaras and the greater development seen in the other genera of Falconidae.

Spiziapteryx, *Herpetotheres*, *Micrastur* and the caracaras all have a well-developed procoracoid foramen set within the procoracoid process well away from the internal margin of the bone. In *Polihierax*, *Microhierax*, and *Falco* this feature is represented by a notch placed lower on the internal margin of the procoracoid, either open or closed off only by a tenuous thread that may or may not be ossified.

The tarsometatarsus of *Spiziapteryx* is quite distinct from those of all falconid genera except the caracaras; except for its smaller size it is scarcely separable from the tarsometatarsus of *Milvago*. The tarsometatarsi of *Spiziapteryx* and the caracaras are distinguished from those of other falconids by their very long slender proportions and by the short ridge of the hypotarsus, the distal end of which is set off abruptly from the shaft. In other falconids, including *Polihierax* and

SHARPE, R. B. 1874. Catalogue of the birds in the British Museum, vol. 1, London, Brit. Mus.

STRESEMANN, V. 1959. The wing molt and systematic position of the genus *Gampsonyx*. Auk 76: 360–361.

SUSCHKIN, P. 1905. Zur Morphologie des Vogelskelets. Vergleichende Osteologie der normalen Tagraubvögel (Accipitres) und die Fragen der Classification. Nouv. Mem. Soc. Imp. Nat. Moscou 16 (4): 1–247.

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Microhierax, the tarsometatarsus is shorter and heavier and the ridge of the hypotarsus is long, its distal end tapering very gradually into the shaft.

These characters indicate that *Spiziapteryx* has no affinity with the Polihieracinae and that it belongs with the other genera of falconids endemic to the Neotropics. Such a treatment is also in better accord with the geographic distribution of the various forms. Nothing indicates that *Spiziapteryx* is particularly closely related to either *Herpetotheres* or *Micrastur*; the characters it shares with these genera are also found in the caracaras and are probably primitive. In the conformation of the tarsometatarsus, the interorbital septum, and to a lesser extent the lacrimal, *Spiziapteryx* is markedly similar to the caracaras. The overall shape of the skull is not elongate as in the caracaras, but instead is more similar to that of *Falco* and the true falconets. Likewise the toothed bill is shared with that group, although the development of the "tooth" appears to be rather variable in *Spiziapteryx*, as in some individuals it is only an indistinct sinuation in the tomium. *Spiziapteryx* thus belongs with the "aberrant Neotropical falcons," within which group it is closest to the caracaras. It also exhibits certain similarities to the true falcons. Its nature is such as to affirm the essential correctness of Brown and Amadon's hesitance to recognize subfamilies within the Falconidae, as apparently no group of genera share enough unique characters to merit their separation from the other members of the family.

Unless one regards the endemic neotropical genera as relicts, it would appear that much of the evolution and history of the Falconidae took place in South America. The true falcons (*Falco*) seem to have been derived from the primitive neotropical forms, perhaps through a stage similar to *Spiziapteryx*, and then secondarily gave rise to the falconets of the Old World.

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