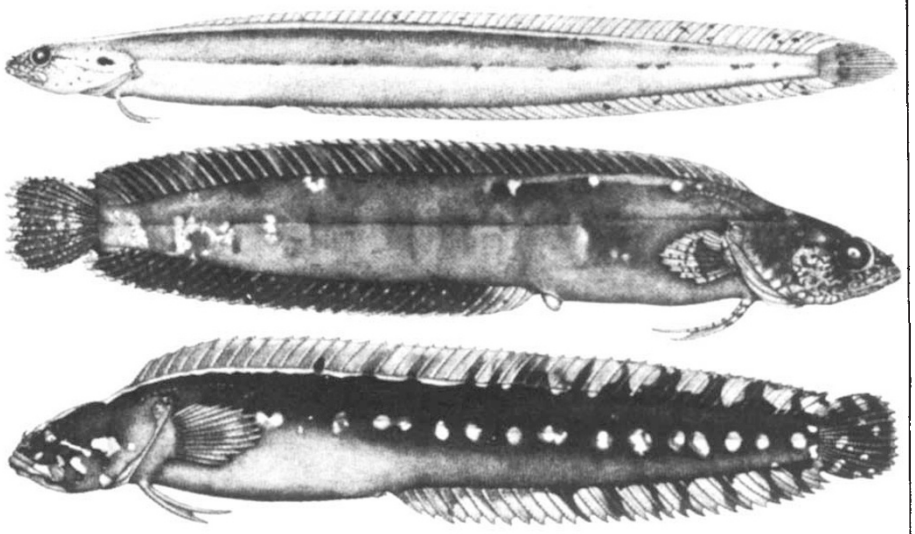
Snakeblennies

from Alwyne Wheeler

The snakeblennies (fishes of the tribe Ophiclinini within the family Clinidae) are small (up to 16 cm long) and live in shallow water along the cool, southern coasts of Australia. They can be captured in tidal rock pools and in bays at depths of 13 m and several species are known to burrow in mud.

A recent taxonomic study by George and Springer* has made a considerable contribution to our knowledge of these fishes, not least because they name no fewer than five previously undescribed species. They have also revised all the previously named species and produced a clarification of the relationships of these little-known fishes. Thus, the species *Peronedys anguillaris* which was previously assigned to a family on its own, and the genus *Sticharium* which hitherto had been placed in the Notograptidae, are now combined with the Ophiclinidae. These fishes are not, however, considered to be distinct from the members of the family Clinidae, which are widely distributed through the tropical and subtropical oceans. For this reason, these southern Australian fishes are placed in a tribe Ophiclinini within the Clinidae.



Ophiclinops hutchinsi, new species (89.0 mm); *Ophiclinus pectoralis*, new species (52.0 mm); *Ophiclinus gracilis* (68.0 mm). Drawings by J.R. Schroeder.

One of the pieces of evidence which substantiates the close relationship of *Peronedys* (which was thought to be distinguished by having no pectoral fins) is that several of the species of *Ophiclinops* have very minute pectoral fins, including the newly described *Ophiclinops hutchinsi* from Western Australia.

*Anita George & Victor G. Springer: Revision of the clinid fish tribe Ophiclinini, including five new species, and definition of the Family Clinidae. *Smithsonian Contributions to Zoology* 307 (Smithsonian Institution Press, City of Washington, 1980).

Alwyne Wheeler works on fishes at the British Museum (Natural History), London.

Sexual dimorphism and the evolution of higher primates

from R. D. Martin

In this issue of *Nature* Fleagle *et al.* report that three species of primate from Oligocene deposits at the Fayum fossil site show evidence of sexual dimorphism. This discovery has important implications for our understanding of the radiation of monkeys, apes and man as well as enabling us guess something of the social structure of the earliest known Old World anthropoids.

The Fayum fossil site in the Egyptian desert south-west of Cairo is of special significance for the reconstruction of primate evolution. Vertebrate fossils from these Oligocene deposits, dating back some 30 million years, include the first known representatives of the 'higher' primates (monkeys, apes and man). In fact, in the entire African continent, fossil primates from this site provide the only undisputed palaeontological evidence of primate evolution for the first half of the Tertiary epoch (Palaeocene–Eocene–Oligocene). The first fragmentary jaws and teeth of Fayum primates were recorded about 75 years ago and a series of collecting expeditions led by Elwyn Simons (then of Yale University) in 1963–1967 produced a wealth of fossil material from five primate genera (*Apidium; Parapithecus; Oligopithecus; Propliopithecus; Aegyptopithecus*). But soon afterwards events in the Middle East led to suspension of all palaeontological work in the Fayum, and it was not until 1977 that a new programme of joint expeditions was organised by the Geological Survey of Egypt and Duke University. The new initiative has yielded additional material throwing new light on the early evolution of the higher primates.

Interpretation of the initial radiation of the monkeys, apes and man has been thrown into turmoil by new information on continental drift. The traditional view, assuming stable continental positions is that the New World monkeys (platyrrhine) and the Old World monkeys and apes (catarrhines) are two quite distinct branches derived from a prosimian stock spanning the northern continents. The platyrrhines and catarrhines are held to have attained the 'simian grade' independently through parallel evolution. The acceptance of continental drift has, however, generated increasing support for the alternative view that the platyrrhines and catarrhines shared a common ancestor in Africa which had already attained the simian grade. Opponents of this interpretation point out that the first fossil evidence for New World monkeys appears only in the late Oligocene and that the South Atlantic undoubtedly represented a formidable barrier to invasion by terrestrial mammals at that stage. Conversely, reconstructions of continental positions indicate that invasion of South America from North America would have been at least equally unlikely during the Oligocene.

In all of this, the Fayum primates occupy a central position as the earliest relevant fossils. Interestingly, they do show numerous cranial and postcranial similarities to modern New World monkeys, but this is compatible with either monkey or ape origins since the similarities concern primitive features only to be expected in early representatives of the simian grade. It is therefore crucial to determine whether the Fayum primates exhibit specializations specifically linking them to Old World monkeys and apes. On the basis of previous evidence, Simons and his colleagues has already suggested this to be the case. Indeed, Simons proposed that the fossils could be divided into two groups (*Apidium* and *Parapithecus vs Oligopithecus, Propliopithecus* and *Aegyptopithecus*) related to the origins of the Old World monkeys and apes, respectively.

The new primate fossil material from the Fayum deposits has produced no great surprises in taxonomic terms; all of the new specimens can be confidently allocated to four of the five existing genera (*Apidium; Parapithecus; Propliopithecus; Aegyptopithecus*). But the increased sample sizes

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