

17. THE NOMENCLATURAL STATUS OF *HETEROMETRUS* AND *PALAMNAEUS* (SCORPIONIDAE)

Ehrenberg and Hemprich (1828) introduced into the literature a new subgenus *Heterometrus* of the genus *Buthus* represented by two new species *Buthus* (*Heterometrus*) *palmatus* and *B. (H.) spinifer*. The type localities of the former were given as Libya, Arabia and Syria (near Alexandria in Mount Sinai and in Mount Lebano). The single specimen upon which *B. (H.) spinifer* was described came as a gift from an Alexandrian physician, a Dr. Mopurgo, who brought it back dead from India.

In contemporary systematics these two species are recognized as belonging to two different genera in the family Scorpionidae. The question as to which of these two species should be the type species of *Heterometrus* has been the center of disagreement for about one hundred years.

Gervais (1844), in his relatively large work, simply lists *Buthus* (*Heterometrus*) *spinifer* E. & H. from India and adds to the original description from specimens taken on the Malabar Coast. These specimens had only eleven pectinal teeth whereas the original specimen had 19 and 20.

Peters (1861), in a discussion of some scorpions from Mozambique raises *Heterometrus* to a genus but lists only one species, *H. palmatus* E. & H.

Simon (1872) agrees with Peters in removing the *Heterometrus* from the genus *Buthus* in which it was originally placed. However, in his revision of the *Heterometrus* group he, understandably, fails to mention *B.(H.) spinifer* E. & H. but curiously includes both African and Indian forms in his *Heterometrus*.

Thorell (1876) is the first to distinguish between the African and Indian forms. He recognizes the genus *Heterometrus* and declares *Scorpio maurus* Linn. 1758 as the type-species and *H. palmatus* (E. & H.) as a synonym of this species. The Indian forms are placed in a new genus *Palamnaeus* with *P. petersi*, sp. n. as its species-type. Interestingly enough he discards *B. (H.) spinifer* E. & H. as a doubtful species because of the high pectinal tooth count (19 and 20) reported in the original description.

Karsch (1879) points out that Thorell erred in forming the genus *Palamnaeus*. He states that Thorell failed to recognize the genus *Scorpio* (1758) in his revision of the entire order even though he declared *Scorpio maurus* Linn. 1758 as synonymous with *Heterometrus palmatus* (E. & H.) and the type-species of his genus *Heterometrus* (E. & H.). Therefore, the Thorell concept of *Heterometrus* (E. & H.) must give way to the older genus *Scorpio* Linn. which will contain *Scorpio maurus*. This

leaves *Heterometrus* (E. & H.) with the one remaining species *spinifer* E. & H. The taxon represented by this species was declared by Thorell as the genus *Palamnaeus*. However, the genus *Heterometrus* (E. & H.) was still available and, therefore, *Palamnaeus* must be considered as a synonym of *Heterometrus* (E. & H.) 1828, with *H. spinifer* (E. & H.) 1828, as the type-species.

Pocock (1892a), without referring to the paper of Karsch, declares that Thorell's *Palamnaeus petersi* is a synonym of *B. (H.) spinifer* E. & H. and, therefore, the type-species of the genus *Palamnaeus* Thorell. In another paper (1892b) he refers to *P. spinifer* and *P. thorelli* but places other members of this taxon in the genus *Scorpio* Linn.

Kraepelin (1894), also apparently disregarding Karsch's paper, retains the taxonomy of Thorell but recognizes *H. palmatus* (E. & H.) as a valid species distinct from *Scorpio maurus* (Linn.) 1758, and treats *B. (H.) spinifer* E. & H. as a synonym of *Scorpio longimanus* Herbst, 1800, along with several other species of *Palamnaeus*.

Pocock (1896) retains the name *Palamnaeus* (type *petersii*) and clearly differentiates it from the genus *Scorpio* (type *africanus*). Regarding the *Palamnaeus* type he states, '*Petersii*—probably identical with *spinifer*, E. & H., and possibly with *longimanus*, Herbst.' He continues to recognize the genus *Heterometrus* as an African taxon.

Kraepelin (1899), in DAS TIERREICH, treats *Palamnaeus* as a synonym of *Heterometrus* which includes only the taxa of India and Indo-China. Interestingly, however, he considers *B. (H.) spinifer* E. & H. as a synonym of *H. longimanus* (Hbst.) 1800, and *H. palmatus* E. & H. now is considered as a synonym of *Scorpio maurus* Linn., 1758.

Pocock (1900) criticises Kraepelin's adding *Heterometrus* to the synonymy of *Scorpio* and the placing of *palmatus* in the synonymy of *maurus*. Accordingly, he recognizes *palmatus* as a valid species of *Heterometrus* E. & H. and does the same for *maurus*. Pocock's concept of *Heterometrus* contains eight species against two in Kraepelin's *Scorpio*. Essentially Pocock has repeated the condition to which Karsch referred in 1879 (above) by not recognizing the genus *Scorpio*.

In his greater work on the scorpions of India (1900) Pocock continues to use *Palamnaeus* as the genus name for the Indian taxon and listing as synonyms *Scorpio* and *Heterometrus*. Again he seems to ignore Karsch and recognizes sixteen species in the genus.

Simon (1910) continues to recognize *Heterometrus* as an African taxon and *palmatus* E. & H. as a valid species with *Scorpio maurus* in its synonymy. He seems to choose to ignore Karsch's revision.

Kopstein (1921) accepts the genus *Heterometrus* as representing the Indian taxon. In the synonymy of *Heterometrus longimanus* (Hbst.) he lists *Palamnaeus longimanus* and *P. spinifer*.

Meise (1932) and Werner (1934) accept the genus *Heterometrus* as representing the Indian taxon and give *Palamnaeus* as a synonym.

Vachon (1952) recognizes *Scorpio maurus* as the valid name and drops the designation of *Heterometrus* and recognizes the various forms of *B. (H.) palmatus* as subspecies of *Scorpio maurus* without retaining the name *palmatus*.

Thus following the reasoning of Karsch, since *B. (H.) palmatus* is removed from *Heterometrus* (E. & H.) the genus name must be applied to the remaining species *B. (H.) spinifer* E. & H. and the type species is *Heterometrus spinifer* (E. & H.). (Code 69B, example 3, choice by elimination).

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December 21, 1971.

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