

Family CHÆRILIDÆ.

Palal spurs two, as in the *Butlidae*; but the anterior never double. *Sternum* of cephalothorax pentagonal, parallel-sided, with a posterior rounded median pit: as long as wide or longer than wide. *Pectines* very short, scarcely segmented. *Maxillary processes* of 1st pair of legs (fig. 15, *a*) expanded at the anterior extremity, with broadly truncate anterior border. *Stigmata* (fig. 15, *c*) circular. *Carapaces* narrowed in front, its anterior border transversely truncate;

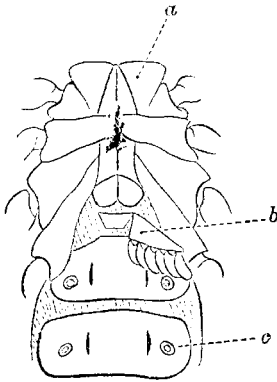


Fig. 15.—Lower side of cephalothorax and of anterior abdominal somites of *Cherilus*, showing (*a*) the expanded maxillary process of the 1st leg; (*b*) the unsegmented shaft of the pecten, and (*c*) the circular stigma.

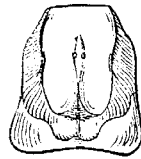


Fig. 16.
Carapace of *Cherilus*.

two lateral eyes on each side, and beneath them an amber-coloured spot. Movable and immovable fingers of *mandible* armed below with a series of small teeth. Fingers of *chela* never lobate, furnished with many overlapping rows of small teeth, the terminal tooth of each series on the outer side enlarged. *Tarsi* (fig. 5 B, p. 8) furnished beneath with two series of stout bristles and a median series of very fine spicules. Males usually with longer narrower *chela* than females, and slightly or considerably longer tail; vesicle of tail sometimes much modified in male.

Genus CHÆRILUS, Simon.

- Cherilus*, Simon, *Ann. Soc. Ent. France* (5), vii, p. 238, 1877; Karsch, *MT. Münch. Ent. Ver.* iii, p. 101, 1879; Pocock, in *Weber's Reise Niedert. O.-Ind.* iii, p. 91, 1890; Kraepelin, *Jb. Hamb. Wiss. Anst.* xi, p. 141, 1894; *id. Tierr., Scorp. etc.* p. 157, 1899. *Chelomachus*, Thorell, *Ann. Mus. Genova*, xxvii, p. 583, 1889. *Uromachus*, Pocock, *A. M. N. H.* (6) v, p. 250, 1890.

Characters of the family.

Distribution. Ceylon: Himalayas from Kashmir to Assam; Burma, Malacca, Sumatra, Java, Borneo, and Celebes.

The genus *Chelomachus* was based upon a character occurring in an immature individual; *Uromachus* upon the peculiar form of vesicle found in the male of the species described below as *Chorilus pictus*.

Synopsis of Indian Species.

- a.* Hand furnished with only five keels, three above and two bordering the underhand below; last abdominal sternum with four granular crests; crests on hand marked with a single row of shining granules, which are much more conspicuous than those covering the rest of the surface; length of fingers and granulation of carapace as under *b'* *C. tricosatus*, p. 59.
- b.* Hand furnished with seven keels (in addition to a weak crest on its inner surface), five on its upper surface and two bordering the underhand below; last abdominal sternum without crests; granules on keels of hand small and close-set, not or hardly larger than those covering the rest of its surface.
- a'*. Ocular tubercle and antecular area of carapace closely covered with granules; fingers very short, the movable strongly curved, shorter than width of hand and much shorter than carapace; width of immovable at base about two-thirds of its length *C. ceylonensis*, p. 62.
- b'*. Ocular tubercle and at least the posterior half of the antecular area of the carapace smooth; fingers longer, the movable lightly curved, exceeding the width of the hand, and at most only a little less than the carapace; basal width of immovable less than half its length.
- a*². Vesicle inflated, when viewed from the side not passing gradually and without constriction into the aculeus; base of aculeus subcylindrical, much narrower than adjacent portion of the vesicle and much longer than wide.
- a*³. Chelæ long; humerus, brachium, and underhand subequal to or longer than the carapace; pectines large, their length from base of shaft to tip of apical tooth about as long as patella of 3rd leg.
- a*⁴. Width of 1st caudal segment exceeding length of 4th; 2nd caudal segment longer than wide:

- humerus, brachium, and underhand all exceeding length of carapace; humerus more than twice as long as wide; width of hand less than half the length of the underhand; terga smooth *C. insignis* ♂, p. 58.
- b*¹. Width of 1st caudal segment equal to length of 4th, 2nd wider than long; humerus shorter than brachium, and underhand equal to length of carapace; width of hand always more than half the length of underhand.
- a*⁵. Terga smooth, only obsoletely granular; frontal area of carapace weakly granular anteriorly; inferior median keels of 2nd caudal segment granular *C. margaritatus* ♂, [p. 58.
- b*⁵. Terga very distinctly and closely granular throughout, frontal area of carapace coarsely granular anteriorly; inferior median keel of 2nd caudal segment smooth *C. anthracinus* ♂, [p. 57.
- b*³. Chelæ short; humerus, brachium, and underhand considerably shorter than carapace; pectines small, length from base of shaft to tip of apical tooth much less than patella of 3rd leg.
- a*⁶. Abdominal terga so densely and uniformly covered throughout with granules that no visible interspaces are left; trunk and chelæ blackish, legs yellowish brown *C. anthracinus* ♀, [p. 57.
- b*⁶. Abdominal terga studded with pearl-like granules separated by very distinct interspaces; body and chelæ dull brown.
- a*⁷. Frontal area of carapace weakly granular throughout, the granules at most only a little coarser anteriorly; hand wider, its width about equal to length of humerus; trunk and limbs uniformly coloured *C. margaritatus* ♀, [p. 58.
- b*⁷. Frontal area of carapace smooth behind, coarsely granular anteriorly; hand narrower, its width noticeably less than length of humerus; trunk and limbs variegated *C. granosus*, p. 56.
- b*². Vesicle much less inflated, flatter beneath, as high as 5th caudal segment, and, when viewed from the side, passing gradually and without constriction into the aculeus; aculeus less

- than half the length of the vesicle; its basal portion, seen laterally, broad, triangular, about as wide as long.
- a. Upper side of body in ♀ closely covered with large pearl-like granules; intercarinal spaces of tail very distinctly granular; much darker. *C. gemmifer*, p. 60.
- b. Upper surface of body furnished with only a few coarse granules scattered here and there; intercarinal spaces of tail and of hand almost smooth; much paler and more distinctly variegated. *C. pictus*, p. 61.

41. *Chærilus granosus*, sp. n.

♀. *Colour*. Upper side of body blackish brown, mottled with yellowish red; terga with median and lateral yellow patch and ><-shaped yellow mark; tail and chelæ reddish brown with black keels, fingers black; vesicle reddish yellow, usually mottled below with blackish grey; legs mostly fuscous with yellowish-red markings, paler towards the apex. *Carapace* for the most part covered with granules, especially at the sides, the ocular tubercle and the posterior half of the anteocular area, as well as the portion of the upper surface on the inner side of the two crests smooth: a little longer than the 1st and 2nd caudal segments, to about the same extent shorter than the 3rd and 4th, and about as long as the 5th. *Terga* coarsely granular throughout, the granules shining and separated from each other by very distinct, almost smooth interspaces, from the 3rd to the 6th furnished on each side with a larger marginal granule representing an incipient lateral keel; the last with four granular crests. *Sterna* smooth, the last granular at the sides, not crested. *Tail* about four times as long as the carapace; the upper surface sparsely granular in the middle, the granules showing a tendency to run into a pair of converging longitudinal series; sides of tail and keels coarsely granular except the inferior median crests of the 1st segment, which are smooth and obsolete; median lateral crest present on 1st segment and extending throughout half the length of the 5th, practically absent on the rest; width of 1st about equal to length of 4th, 2nd as wide as long; upper edges of 5th square and coarsely granular; lower keels of 5th denticulate, the median posteriorly bifid; anal border denticulate, with lateral bifid lobe; *vesicle* (see fig. 18, A) granular at the sides, smooth above and in the middle line below; piriform and subglobular, a little wider than high, width equal to that of 4th segment, height exceeding that of 5th and more than half the length of the vesicle; basal half of aculeus slender, subcylindrical, much longer than thick, and marked off from vesicle by a distinct constriction, so that when viewed from the side the two do not pass continuously into each other. *Chelæ* with humerus, brachium, and underband all shorter than carapace; humerus coarsely granular and crested above and in front, less

strongly but distinctly granular below, mostly smooth behind except for a granular crest on its upper half; brachium furnished with five granular crests above, behind, and below, with the interspaces also granular; hand granular throughout, furnished with eight strong granular keels in addition to a small crest on the middle of its inner surface, the keels more coarsely and closely granular than the interspaces; width of hand less than length of underhand by about one fifth of its length; underhand less than movable finger, which almost equals carapace; inner edge of hand lightly convex, subparallel to the outer border, posterior lobe rounded, not surpassing posterior border of the outer side of the upper surface; movable finger with 9 rows of teeth. *Legs* with pro-tarsi, except of 4th, spined posteriorly, and including that of the 4th armed with a posterior distal spine; femora of 3rd and 4th and also patella of 4th finely granular externally. *Pectinal teeth* 4.

Measurements in mm.—♀. Total length 52, carapace 7, tail 28, brachium 5·8, underhand 5, movable finger 6, width of hand 4.

Loc. Western Himalayas: Mussooree (*Rattray*).

42. *Chærilus anthracinus*, sp. n.

Closely allied to the preceding, of which perhaps it will prove to be a subspecies.

♀. *Colour* of body much more uniformly black or deep brown, the yellowish-red mottling being scarcely traceable; legs also much more uniformly coloured, but yellowish brown and contrasting with the dark tint of the body much more forcibly than in *C. margaritatus*. Upper side of *trunk* granular as in that species, but much more closely, the terga being almost entirely covered, with scarcely any interspaces between the granules. *Chele*, on the contrary, distinctly less coarsely granular than in *C. margaritatus*; the keels on the hand and the posterior side of the brachium being nearly smooth, the granulation presenting a scale-like appearance as if rubbed down; hand distinctly wider, its width about equal to the length of the humerus and almost equal to the length of the underhand. *Pectinal teeth* 4.

♂. Sexual characters as in *C. margaritatus*. Tergal plates more finely, and even a little more closely granular than in the ♀, coarsely shagreened. *Pectinal teeth* 6.

Measurements in mm.—♀. Total length 51, carapace 7, tail 30, brachium 6, underhand 6, movable finger 6·5, width of hand 5·2.

♂. Total length 44, carapace 6·5, tail 27, brachium 6·5, underhand 6·5, movable finger 6, width of hand 4·5.

Loc. Dalhousie in the Western Himalayas (*Townsend*).

Subspecies *rufescens*, nov.

♂. Differing from the typical form in being more coarsely and less closely granular. Not so dark in colour, the chele reddish brown, with black crests and the legs lightly variegated as in *C. granosus*; terga dark, with a very indistinct ><-shaped

mark and with three distinct reddish spots—one on the posterior border, one in the middle line, and one on the lateral angle. *Pectinal teeth* 5.

Measurements in mm.—Total length 45, carapace 6.3, tail 25, brachium 6.2, underhand 6, movable finger 5.6, width of hand 4.

Loc. Dharmasāla in the Western Himalayas (*Fulton*).

43. *Chærilus margaritatus*, *Pocock*, *A. M. N. H.* (6) xiii, p. 79, 1894.

Colour of ♂ and ♀ tolerably uniform brown, the legs paler; not so dark as in *C. anthracinus* and not variegated as in *C. granosus*. Male differing from that of *C. anthracinus* in having the upper side of the abdomen almost smooth, at most very finely granular, with a row of coarser granules along the posterior border whereon the two tubercles are very prominent; the granules on the anterior half of the frontal area of the carapace not so coarse. *Tail* rather more than four times as long as carapace; width of 1st segment about equal to length of 4th, 2nd a little wider than long; inferior median keels on 2nd granular. *Chelæ* much like those of *C. anthracinus*, the hand a little narrower as compared with its length (*cf.* measurements).

♀. Resembling ♀ of *C. granosus* in granulation of terga, but with the granules not extending to the lateral borders as they do almost invariably in that species; differing from the latter and from ♀ of *C. anthracinus* in having the frontal area of the carapace granular behind as well as in front, sometimes evenly but sparsely granular throughout, at others more coarsely granular in front. *Hand* of very much the same shape and size as in *C. anthracinus*. *Pectinal teeth* 5 in ♂, 3-4 in ♀.

Measurements in mm.—♀. Total length 50, carapace 6.5, tail 26, brachium 5.5, underhand 5.5, movable finger 6, width of hand 4.9.

♂. Total length 53, carapace 7, tail 30, brachium 7.2, underhand 7, movable finger 7, width of hand 4.5.

Loc. India: Kasauli, near Simla (*Waller Barrow*).

44. *Chærilus insignis*, *Pocock*, *A. M. N. H.* (6) xiii, p. 82, 1894.

♂. *Colour* (dry specimen) apparently as in *C. margaritatus*. *Carapace* with the same distribution of granules as in the preceding two species, but the granulation less distinct. *Terga* not coarsely or closely but only very finely granular under the lens, the lateral keels marked by a large tubercle. *Tail* much longer than in male of *C. margaritatus* and *C. anthracinus*, more than four times the length of carapace; width of 1st segment considerably less than length of 4th, 2nd segment longer than wide; upper side practically smooth, lateral surface much less granular than in *C. margaritatus*; inferior median keels of 1st standing up as distinct, though only obsoletely granular crests. *Chelæ* granular and keeled as in *C. margaritatus*, very long; humerus longer than carapace, more than twice as long as wide, but shorter than brachium and under-

hand, both of which are thus much longer than carapace; hand (fig. 17, C) long and narrow, the width considerably less than half the length of the underhand, its inner edge straight and parallel with the outer edge; movable finger a little longer than the carapace. *Pectinal teeth* 6.

Measurements in mm.—Total length 64, carapace 9, tail 39, brachium 10·5, underhand 11, movable finger 9·5, width of hand 4·5.

Loc. Ladákh.

45. *Charilus tricostatus*. Pocock, *Jour. Bom. N. H. Soc.* xii, p. 266, 1899.

Colour (dry specimen) a tolerably uniform reddish brown, with blacker markings. *Carapace* granular at the sides, mostly smooth above except for the anteocular triangle, which is granular at

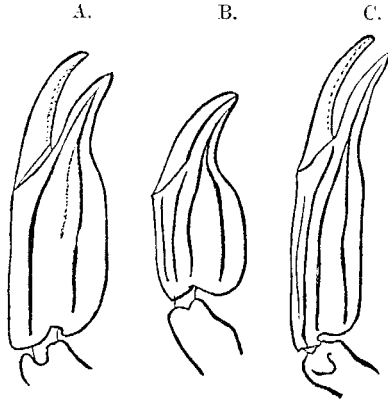


Fig. 17.—A. Hand of *Charilus tricostatus* ♂. B. Hand of *C. pictus* ♂.
C. Hand of *C. insignis* ♂.

least in front; longer than 1st and 2nd caudal segments, about equal to 3rd and 4th and a little longer than 5th. *Sterna* as in the other species, but the last furnished with four short crests, each consisting of a few large granules. *Terga* finely granular, with a few larger pearl-like granules scattered here and there, and a series of them along the posterior border; with distinct lateral crests, those on the 3rd consisting of a single large pearl-like granule, those on the 4th, 5th, and 6th of three similar granules. *Tail* rather less than three times the length of the carapace, width of 1st segment about equal to length of 4th; 2nd about as wide as long; dorsal surface very sparsely granular, lateral and inferior surfaces weakly but not so sparsely granular as the upper surface; all the keels normal and denticulated; the inferior median keels of the 1st segment distinct and consisting of coarse granules like those on the 2nd and on the last abdominal sternum; *vesicle* finely granular below and laterally, of much the same form as in *C. margaritatus* and *C. insignis*. *Chela* long; humerus as long as carapace and a little

more than twice as long as wide, weakly granular above and in front except for coarse granules along the keels, posterior surface smooth, inferior surface very weakly granular; brachium a little longer than carapace, the normal keels marked by a single series of low shining granules, the anterior surface furnished with a few large granules on its upper and lower prominences, for the rest the segment is almost entirely smooth; hand (fig. 17, A) finely and closely granular above and externally, more finely granular internally and smooth on the underhand, furnished with only five keels, three above and two bordering the underhand, the keels defined by a single row of shining granules which are much larger than the granules covering the rest of the upper surface; underhand a little longer than brachium and than movable finger; hand parallel-sided, its width a little more than half the length of the underhand; movable finger slightly longer than carapace, furnished with 4 rows of teeth. *Pectinal teeth* 5-6.

Measurements in mm.—Total length 50, carapace 7.5, tail 30, brachium 8, underhand 8.5, movable finger 7.8, width of hand 5.

Loc. Sadiya, Assam.

Female unknown.

46. *Chærilus gemmifer*, Pocock, *A. M. N. H.* (6) xiii. p. 81, 1894; *Kraep. Terr., Scorp. etc.* p. 159, 1899.

Colour nearly black, varied with yellow; terga with median and lateral marginal yellow spot and yellow ><-shaped mark; tail and chelæ deep reddish brown with black keels; fingers black.

Carapace with coarse shining granules on the sides, antecocular area weakly and sparsely granular throughout, the area behind the tubercle serially granular; relative length of carapace and caudal segments approximately as in *C. margaritatus*. *Terga* covered with coarse pearl-like granules, much larger and farther apart than in *C. margaritatus*; lateral crests represented by one or two still larger granules. *Sterna* as in *C. margaritatus*. *Tail* approximately as in that species, but smoother below, the four inferior keels of the 1st segment smooth, and the inferior medians of the 2nd at most very weakly granular; *vesicle* (fig. 18, B) not so globular, much less convex below, height less than that of 5th segment, granular above as well as at the sides and below; from

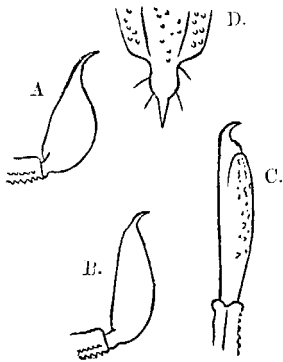


Fig. 18.—A. Vesicle of *Chærilus margaritatus* ♀. B. Vesicle of *C. gemmifer* ♀. C. Vesicle of *C. pictus* ♂, side view. D. Do., upper view of extremity.

the lateral aspect passing without constriction into the base of the

aculeus, which is short, nearly as wide at its proximal as at its distal end, where it merges with the spiniform portion; the whole aculeus much less than half the length of the vesicle. *Chelæ* with humerus much less coarsely granular above and in front than in *C. margaritatus*, very finely granular below, smooth behind; brachium with superior granular crest, posterior and inferior surface smooth, anterior surface smooth except for some coarse granules on the inferior crest and on the inferior prominence and two larger granules above; keels of hand normal in number, very finely granular, the interspace covered with a wide-meshed network of granules; width almost equal to length of underhand, the inner edge more strongly convex than in *C. margaritatus*, with much closer, less open concavity where it merges with the immovable finger; fingers more strongly curved. *Pectinal teeth* 4.

Measurements in mm.—Total length 38, carapace 6, tail 24, brachium 4.5, underhand 4.5, movable finger 5.3, width of hand 4.2.

Loc. Sylhet (*Bowring*).

47. *Chærilus pictus*, *Pocock. A. M. N. II.* (6) v, p. 259. pl. xi, figs. 1-1c (1890) (*Uromachus*); *id. in Weber, Reise Niederl. O.-Ind.* iii, p. 91. 1893; *Kraep. Jb. Hamb. Wiss. Anst.* xi, p. 143. 1894; *id. Tijds. Scorp. etc.* p. 159. 1899 (*Chærilus*).

♀. *Colour* somewhat as in *C. gemmifer*, but much paler; the yellow or red predominates so that the integument may be described as red varied with black; *chelæ* deep red with black keels. *Carapace* and *terga* with a few coarse pearl-like granules scattered here and there; antecular area practically smooth; relative length of carapace and tail-segments as in *C. gemmifer*; intercarinal spaces of tail almost smooth, those of the 5th weakly granular; *vesicle* as in *C. gemmifer*. *Chelæ* with humerus weakly granular, except for the upper and anterior crests, which are coarsely so; brachium almost wholly smooth except for a few coarse granules on the upper crest and a few in front; intercarinal spaces of hand with a very finely granular network, almost smooth; keels very weakly granular; shape of hand as in *C. gemmifer*. *Pectinal teeth* 5.

♂. With tail very long and slender; carapace as long as the 1st and half the 2nd segments, much shorter than the 5th. *Tail* more than six and a half times as long as the carapace, the 1st segment longer than wide, 2nd nearly twice as long as wide, 5th more than four times as long as wide; *vesicle* (fig. 18. C, D) very long, as long as the 5th segment of the tail, flat below, about as wide as the 4th segment, its height equal to that of the 5th, nearly parallel-sided, very coarsely granular, ending distally in a right and left shoulder-like prominence; base of aculeus when seen from above resembling a large cylindrical tubercle, upon the summit of which is situated the strongly bent spiniform distal extremity; when seen from the side the base of the aculeus merges without constriction with the adjacent end of the vesicle. *Chelæ* very much as in female; humerus, brachium, and underhand all shorter than

carapace; hand (fig. 17, B) a little longer than in female, its width about four-fifths its length.

Measurements in mm.—♀ (young). Total length 32, carapace 5, tail 20, brachium 4, underhand 3·8, movable finger 4, width of hand 3·3.

♂ (adult). Total length 61, carapace 6·5, tail 41, brachium 5·5, underhand 5·8, movable finger 5, width of hand 4·5.

Loc. Sylhet (*Stainsforth*).

The male of this species differs strikingly from that of all the others in the peculiar form of the vesicle and the great length of the tail.

48. *Chærilus ceylonensis*, *Pocock, A. M. N. II.* (6) xiii, p. 83 (1894); *Kraep. Tierr., Scorp.* p. 159 (1899).

♂. *Colour* dull brown; ocular tubercle, crests of hand, and digits infusate. *Carapace* longer than 1st and 2nd caudal segments, as long as 3rd and 4th, longer than 5th, granular throughout, with the exception of the grooves, which are smooth; ocular tubercle granular. *Terga* granular throughout, not or hardly distinctly crested. *Tail* about four times as long as carapace, finely granular; 2nd segment as long as wide, 5th more than twice as long as wide; inferior median keel nearly obsolete on 1st segment; median lateral keel distinct on 1st, represented by a few larger granules on the others, extending over half the lateral surface of the 5th; the rest of the keels distinct and granular; *vesicle* of approximately the same form as in *C. margaritatus*, wider and higher than 5th segment; coriaceous below, but not visibly granular. *Chelæ*: humerus and brachium much shorter than carapace, humerus coarsely granular above and in front, brachium granular above, almost smooth behind and below; hand covered with reticulation of fine granules, keels and base of digits thickly and very finely granular; keels normal in number, but low and very weakly granular; hand nearly parallel-sided; length of underhand greater than width of hand and greater than length of movable digit, which is a little shorter than width of hand; immovable digit furnished with 11–12 rows of teeth, its basal width equal to two-thirds its length. *Pectinal teeth* 5–6.

Measurements in mm.—Total length 44, carapace 5·5, tail 22, brachium 4, underhand 5·5, movable finger 4, width of hand 4·5.

Loc. Trincomali, Ceylon (*Barrett*).

The two following species have been omitted from the synoptical table, since I have had no opportunity of examining actual specimens.

49. *Chærilus birmanicus*, *Thorell, Ann. Mus. Genova.* xxvii, p. 584, 1889 (*Chelomachus*).

Colour subtestaceous, varied with black. *Carapace* tolerably

coarsely granular, a little shorter than caudal segments 1-3, longer than segment 5. *Terga* very finely coriaceous and granular, with larger granules forming lateral crests on terga 3-6, last tergum more coarsely granular at the sides. *Sterna* smooth, the last without crests. *Tail* about three times as long as the carapace; 2nd segment wider than long; inferior median keels of 1st segment obsolete; vesicle large, wider than segment 5, more than twice as long as wide, smooth. *Chelæ* with hand normally keeled, its width equal to the length of the underhand and less than the movable finger, which is a little shorter than the carapace; keels on hand finely granular, interspaces smooth.

Measurements in mm.—Total length 16, carapace $2\frac{1}{2}$, tail 7, underhand 1.5, movable finger 2, width of hand 1.5.

Loc. Burma: Rangoon (*Pea*).

Unfortunately the only known representative of *C. birmanicus*, which will doubtless prove to be a valid species, is the example of which an abridged description is given above. Judging from its size this example is not half grown. Hence it is not possible to form a just estimate of the characters of the adult, and it is superfluous to attempt to locate the species in our synoptical table.

50. *Chærilus truncatus*, Karsch. *MT. Münch. ent. Ver.* iii, p. 108, 1879; *Kraep. Jb. Hamb. Wiss. Anst.* xi, p. 146, pl. ii, fig. 54, 1894; *id. Tierr., Scorp. etc.* p. 160, 1899 (excluding suggested synonymy).

So far as it goes, the description of this species, published by Kraepelin, is not inapplicable to *C. margaritatus*, *C. granosus*, and also perhaps to *C. anthracinus*, except as regards the form of the hand. The width of this organ in the male is said to be less than half the length of the underhand, and in the female a little more than half; whereas in *C. margaritatus*, *C. granosus*, and *C. anthracinus* (♂, ♀) the width of the hand is much more than half the length of the underhand. The hand of the male of *C. truncatus*, in fact, seems to resemble that of *C. insignis*; but the upper side of the abdomen of the former appears to be much more granular. Presumably also the chelæ and tail are shorter, since nothing is said in the description touching their length.

Loc. Dehra Dun, in the Western Himalayas.

Family VEJOVIDÆ.

With two *pedal spurs* and no *tibial spurs*, as in the Chærilidæ. *Sternum* of cephalothorax pentagonal, nearly always wider than

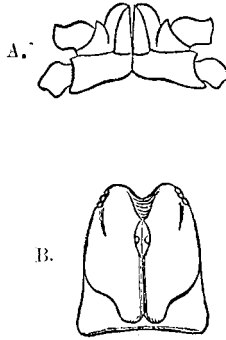


Fig. 19.—A. Coxæ and maxillary lobes of 1st and 2nd legs of *Scorpiops*.
B. Carapace of *Scorpiops*.

long. *Pectines* segmented. *Stigmata* elongate. Three lateral *eyes* on each side of carapace. *Maxillary lobes* of 1st pair of legs narrowed, not truncate along the anterior border.

Distribution. Eastern Mediterranean area: North India and Burma; California, Texas, Central America, and along the chain of the Andes to Peru.

Genus SCORPIOPS, Peters.

Scorpiops, Peters, *Mon. Akad. Berl.* 1861, p. 510; *Karsch, MT. Münch. ent. Ver.* iii, p. 101, 1879; *Kraepelin, Jb. Hamb. Wiss. Anst.* xi, p. 185, 1894; *id. Tierr., Scorp. etc.* p. 179, 1899.

Anterior border of *carapace* deeply excised in the middle line. Movable finger of *mandible* with a row of 4-6 small teeth below. Movable finger of *chela* furnished along the middle line with numerous small teeth arranged in a double row; an outer series consisting of small teeth arranged in pairs, and an inner series consisting of a few larger teeth confined to the distal half of the finger. *Hand* generally large, flattish above, with usually strong finger-keel dividing the upper surface into an outer vertical and an inner horizontal portion. *Tarsi* with median inferior row of spinules and a row of setæ on each side.

Type, *Scorpio hardwickii*, Gervais.

Distribution. The Deccan; Himalayas from Punjab to Assam, thence through Burma to S. Tenasserim.

Synopsis of Indian Species.

- a. Brachium of chela armed at base in front with a pair of small tubercles.
 - a¹. Upper and posterior crests upon the hand and brachium very strong and smooth.
 - a². Upper surface of hand without a smooth crest lying longitudinally between the finger-keel and the inner border and ornamented with granules which frequently run together into ridges; length of underhand exceeding width of hand, especially in ♂, in which the chelæ are elongate *S. hardwickii*, p. 66.
 - b². Upper surface of hand with a smooth longitudinal crest between the finger-keel and the inner border and ornamented with a coarse network of perfectly smooth ridges resulting from the anastomosis of low tubercles; width of hand exceeding length of underhand, especially in ♂, in which the chelæ are not elongate *S. insculptus*, p. 68.
- b¹. Upper and posterior crests upon hand and brachium distinctly, often coarsely granular.
 - a³. Length of underhand in ♀ about equal to width of hand; keel forming inner edge of upper surface of hand projecting so as to conceal upper crest on inner surface of hand *S. crassimanus*, p. 68.
 - b³. Length of underhand in both sexes much greater than width of hand; crest forming inner edge of upper surface weak and not projecting so as to conceal upper crest on inner surface of hand .. *S. leptochirus*, p. 69.
- b. Brachium of chela armed in front at base with one or more, usually two, long sharp spiniform tubercles.
 - a⁴. Tail almost four times (♀) or more than four times (♂) as long as the carapace; superior keels of segments 2-4 posteriorly depressed, not spiniform; brachial pores 7; vesicle, especially in ♂, large *S. petersii*, p. 70.
 - b⁴. Tail shorter; superior keels of segments 2-4 or 3-4 posteriorly spiniform and, except in *S. asthenurus*, elevated; vesicle smaller; brachial pores not fewer than 9.
 - a⁵. Aculeus not defined at the base on each side by a semicircular groove; tail short and slender, with strongly spiniform superior keels; hands and carapace flatter; width of area on hand between finger-keel and inner edge not less in adult ♀ than half the movable finger .. *S. montanus*, p. 70.

- b*⁵. Aculeus defined at base by a conspicuous semicircular groove; fingers longer, length of movable more than twice as great as width of area of upper hand between finger-keel and inner edge.
- a*⁶. With only 3 large setal pores on underhand in addition to the two set transversely close to the base of the movable finger.
- a*⁷. Superior keels on caudal segments 3-4 weakly spiniform and not elevated at their posterior ends; tail very short in ♂, segments 1-5 only twice as long as carapace, 1st segment not wider than humerus *S. asthenurus*, p. 73.
- b*⁷. Superior keels on caudal segments 2-4 strongly spiniform and elevated posteriorly; caudal segments 1-5 in ♂ much more than twice the length of carapace; 1st caudal segment wider than width of humerus.
- a*⁸. Brachial pores 9-10 or very rarely 11; fingers less strongly lobate in both sexes *S. longimanus*, p. 72.
- b*⁸. Brachial pores 14-15; fingers more strongly lobate *S. binghamii*, p. 74.
- b*⁸. With 9-10 large setal pores on underhand in adult; in addition to the two near the base of the finger.
- a*⁹. 1st caudal segment narrower than humerus; 15 setal pores on brachium; pectinal teeth 8 *S. lindstroemi*, p. 74.
- b*⁹. 1st caudal segment wider than humerus; 19 setal pores on brachium; pectinal teeth 10-11 *S. anthracinus*, p. 74.
51. **Scorpiops hardwickii**, *Gervais in Walck. Ins. Apt.* iii. p. 66, 1844 (Scorpio); *Pocock, A. M. N. H.* (6) xii, p. 325, 1893; *Kraepelin, Jb. Hamb. wiss. Anst.* xi, p. 188, 1894; *id. Tierr., Scorp. etc.* p. 181, 1899 (Scorpiops); *solidus, Karsch, M T. Münch. ent. Ver.* iii. p. 106, 1879 (Scorpiops).

♀. *Colour* generally a tolerably uniform black, the underside and tips of legs paler; chelæ sometimes deep reddish. *Carapace* finely granular, a few coarser granules here and there, especially on the frontal lobes; as long as the 1st, 2nd, and half the 3rd caudal segments, considerably longer than the 5th. *Terga* coarsely granular, the granules often showing a tendency to fuse together into series; a median granular keel; last tergum more coarsely granular than the others, with median and two lateral crests. *Sterna* smooth, with a few large punctures; the last granular, with four subequal granular keels. *Tail* about three and a half times as long as carapace; 1st segment nearly twice as wide as long, 3rd as wide as

long, 5th twice as long as wide; intercarinal spaces granular; keels strong and subdentifurcate, the upper keels of segments 2-4 not posteriorly enlarged and spiniform; *vesicle* finely granular, about as wide as the 5th caudal segment. *Chelæ* granular; humerus granular and granularly keeled above and below; upper side of brachium granular, bounded in front by a granular keel and behind by a strong smooth or almost smooth keel; a similar smooth crest running along the posterior surface, which is studded with a few large granules; anterior surface finely granular and armed with a pair of small widely-separated tubercles: lower side granular, bounded behind and in front by a granular crest, with a row of 7 setal pores along its hind border; hand thick, width nearly as great as length of underhand, with very strong and smooth finger-keel dividing its upper surface into an outer subvertical area and an inner horizontal area, both of them covered with granules showing a tendency to run into ridges and form an indistinct network; the outer area furnished in addition with a median smooth irregular subdivided crest; no distinct granular crest on the inner edge of the horizontal area; inner surface granular; underhand more finely granular and bounded externally by a smooth crest, furnished with a curved series of 3 large setal pores and 2 smaller, one between the 1st and 2nd, the other close to the keel beyond the 2nd, also 2 large setal pores set transversely close to the base of the finger; movable finger not lobate, scarcely exceeding underhand. *Pectinal teeth* 5-6; much larger in male.

♂ with tail, and especially chelæ, much longer than in female. *Tail* about four times as long as carapace. *Chelæ* elongate; brachium longer than carapace; width of hand distinctly less than length of underhand; the movable finger frequently without a lobe; when present, the lobe consists of a thick subtubercular prominence situated just behind the middle of the finger but well on the inner side of the median line of teeth; both movable and immovable digits are then lightly sinuate along the biting-edge. *Pectinal teeth* 5-6.

Measurements in mm :—

	Total length.	Carapace.	Tail.	Underhand.	Movable finger.	Width of hand.
♀	32	4.6	18	4	4.5	4
♂	33	5	20	5	5	4
♂	43	5.8	23	6	5.5	4.2

Loc. Western Himalayas: Kashmir (*Leach*); Jaunsár, 6000-9000 ft.; Dehra Dún, 2000 ft. (*Gamble & Smythies*); Kasauli (*Waller-Barrow*); Nepal (*Hardwicke*).

The measurements quoted above in the first and second lines are taken from the type (♀) specimen and another (♂) example, ticketed Nepal, from which Gervais drew up his description of the species. The measurements in the last line, showing the size to which the species may attain, are taken from an example from Jaunsár. The locality Nepal needs confirmation.

52. *Scorpiops insculptus*, n. sp.

♀. In size, colour, and most structural features resembling *S. hardwickii*. Upper side of trunk smoother, the granulation much less distinct, consisting of low, smooth, squamiform tubercles fusing and running into ridges to a much greater extent than in *S. hardwickii*, especially on the anterior terga. Tail granular and carinate as in the latter. Chelæ with humerus and brachium more coarsely granular above; the three posterior crests on the brachium quite smooth, as in *S. hardwickii*; 7 brachial pores and 3 normal pores on underhand; hand very wide, its width exceeding the length of the underhand and equal to the length of the movable finger; sculpturing on the upper side of the hand consisting of perfectly smooth, shining tubercles, forming in places an irregular network of ridges, but showing no separate tubercles and granules as in *S. hardwickii*; moreover, the inner horizontal area of the upper side of the hand is divided throughout by a smooth crest, which rises from the finger-keel near the base of the immovable finger and runs to the notch of the posterior border, where the expanded portion of the hand arises; underhand almost entirely smooth.

♂. Resembling the ♀ more than in the case of *S. hardwickii*; the hand of the chelæ not elongate as in the latter, but very broad, the width being equal to the movable finger and exceeding the length of the underhand; movable finger much more strongly curved than in *S. hardwickii*, its basal half with a deep and long excavation behind a low long lobe, which is situated in the distal half of the finger; immovable finger with large basal lobe, the rest of its biting-edge nearly straight, only lightly convex. Pectinal teeth 5-6 (♂, ♀).

Measurements in mm.—♂. Total length 35, carapace 5, tail 19, underhand 4, movable finger 4.5, width of hand 4.2.

♀. Total length 37, carapace 4.5, tail 20.5, underhand 3.6, movable finger 4, width of hand 4.3.

Loc. Western Himalayas: Jaunsár, 6000-9000 ft. (Gamble & Smythies); Dehra Dún, 2000 ft. (Gleadow).

53. *Scorpiops crassimanus*, Pocock, Jour. Bom. N. H. Soc. xii, p. 267, 1899.

♀. Allied to the preceding, but larger. Colour black, with reddish tinge on chelæ; median keel of terga yellowish anteriorly, and there is a transverse reddish stripe on each side in the middle of the terga. Upper side of trunk more finely granular than in *S. hardwickii*, crest on last tergum and sternum also weaker. Tail more powerful, about three and a half times as long as carapace, which is only a little longer than the 5th segment; intercarinal spaces of tail not so coarsely granular, and keels not so strongly denticulated, except the inferior laterals of the 5th, which are more sharply and coarsely denticulated; superior keels of 3rd and 4th

segments subspiniiform distally. *Cheleæ* (fig. 2 A, B, p. 7) with all the crests on the brachium and hand, which are smooth in *S. hardwickii*, very distinctly and coarsely granular; brachium and hand, moreover, much more closely granular, the granules more distinct and showing less tendency to run into ridges and networks; the crest forming the inner edge of the upper surface of the hand strong, consisting of a single row of coarse bead-like granules, and projecting as far inwards as the upper granular crest on the inner surface of the hand and practically concealing it from view when the hand is seen from above in the position of rest. *Pectinal teeth* 5-6.

Measurements in mm.—Total length 48, carapace 7.5, tail 28, width of hand 6, length of underhand 5.8, of movable finger 7.

Loc. Probably India: exact locality unknown.

54. *Scorpiops leptochirus*, *Pocock, A. M. N. II.* (6) xii, p. 325, pl. xiv. fig. 11; *id. A. M. N. II.* (6) xiii, p. 79, 1894; *Kracpelin, Tierr., Scorp. etc.* p. 181, 1899.

Resembling the preceding two species in having the brachium armed in front at the base with small granuliform tubercles, and approaching most nearly to *S. crassimanus* in size, granulation, strength of keels, &c.

♀. *Colour* black, tarsi and pectines yellow, vesicle and sterna reddish brown. *Carapace, terga, and tail* granular and carinate, practically as in *S. crassimanus*; last sternum with four distinctly granular keels; tail less than four times as long as the carapace, the superior keels of segments 2-4 subspiniiform apically. *Cheleæ* granular, practically as in *S. crassimanus*, but not quite so coarsely; inferior row of brachial pores 7; all the crests granular, as in that species, but the crests on the inner edge of the upper surface of the hand consisting of irregularly arranged granules, and not projecting as in *S. crassimanus*, but forming an obtuse angle with the upper area of the inner surface of the hand, so that when viewed from above the superior granular crest on the inner surface is plainly visible; hand much narrower than in *S. crassimanus*, its width much less than length of underhand and of movable finger, the two latter subequal but barely so long as the carapace; fingers without trace of lobation and sinuation; row of three pores on underhand.

♂. Resembling ♀ in general characters, but with the tail a little and the cheleæ much longer. *Tail* about four times as long as carapace; *vesicle* a little larger than in ♀. *Humerus* as long as carapace; brachium a little, underhand much longer than carapace; width of hand equal to half the length of the underhand or a little more, the latter longer than the movable digit, which slightly exceeds the carapace and is without trace of lobe. *Pectinal teeth* 8-9.

Measurements in mm.—♀. Total length 58, carapace 7.5, tail 26, brachium 5.8, underhand 6.5, width of hand 4.8.

♂. Total length 55, carapace 7·6, tail 31, brachium 8, underhand 9, width of hand 4·8.

Loc. Assam: Tura in the Gáro Hills (*Long*); Sadiya.

55. *Scorpiops petersii*, *Pocock*, *A. M. N. H.* (6) xii, p. 323, pl. xiv, fig. 10, 1893; *Kraepelin*, *Jb. Hamb. wiss. Anst.* xi, p. 190, 1894; *id.* *Tierr., Scorp. etc.* p. 181, 1899: *hardwickii*, *Karsch*, *MT. Münch. ent. Ver.* iii, p. 106, 1879 (*not hardwickii*, *Gervais*).

♀. *Colour* of trunk and chelæ blackish, legs yellowish or reddish, vesicle and mandible yellow. Upper side of *trunk* granular and carinate, almost as in the preceding species; ocular tubercle smaller. *Tail* almost four times as long as carapace, thinner, 2nd segment longer than wide, 4th twice, 5th rather more than three times as long as wide; superior keels posteriorly depressed, not spiniform; *vesicle* large, its height equal to its width, its width equal to that of the 2nd segment of the tail. *Chelæ* granular; brachium shorter than carapace, with granular crests, its anterior surface armed basally with two strong spiniform teeth; 7 setal pores on lower side of brachium; crests on hand granular, the crests much stronger than in *S. leptochirus*, the granulation of the intercarinal spaces much weaker than in *S. crassimanus*; outer finger-keel on hand very strong; keel running along inner edge of upper side of hand also strong and beaded, but not projecting so far as the upper crest of the inner surface; underhand with curved series of 3 normal large setal pores and three smaller ones, one between 1st and 2nd and two beyond 2nd along inner edge of keel: width of hand about two-thirds the length of the underhand, the latter about as long as the movable finger and a little shorter than carapace; fingers strongly and mesially lobate and sinuate; 7 teeth on outer series as far back as lobe, 4 on inner series at distal end. *Pectinal teeth* 5-7.

♂. Not strikingly different from the ♀, except that the caudal vesicle is more inflated, the height and width being almost equal to width of 1st caudal segment, and the tail itself a little longer. Humerus, brachium, and underhand about as long as carapace. *Pectinal teeth* 6-7.

Measurements in mm.—♀. Total length 70, carapace 9·5, tail 36, underhand 9, width of hand 6.

♂. Total length 50, carapace 8, tail 36, underhand 8, width of hand 5·5.

Loc. Western Himalayas: Dehra Dún, 2000 ft.; Jaunsár, 6000-9000 ft. (*Gamble & Smythies*); Mussooree (*Rattray*); Simla.

56. *Scorpiops montanus*, *Karsch*, *MT. Münch. ent. Ver.* iii, p. 107, 1879; *Kraepelin*, *Jb. Hamb. wiss. Anst.* xi, p. 192, 1894, and *Tierr., Scorp. etc.* p. 180, 1899 (in part and excluding synonymy).

♀. *Colour* as in *S. petersii*; carapace flatter than in that species

the groove shallower, as long as the first three segments of the tail or as the 3rd and 4th, very much longer than the 5th. Last abdominal *sternum* with obsolete median keels. *Tail* very short and slender, width of 1st segment less than that of humerus, considerably less than three times as long as the carapace, 2nd segment about as wide as long, 4th one-third longer than wide, 5th about three times as long as wide; inferior keels of 1st and 2nd scarcely granular; superior keels of 2nd, 3rd, and 4th posteriorly elevated and strongly spiniform; *vesicle* compressed, slightly higher than wide, as wide as the 5th segment, without an annular constriction at base of aculeus. *Chele* and especially the hand lower, more depressed than in *S. petersii* and the foregoing species; the crests strong and granular; brachium with two basal teeth, the inferior frequently much the larger of the two; brachium shorter, underhand a little longer than carapace, the former furnished below with about 15 pores, the hand with four, one of which is smaller than the others; hand narrow, its width barely two-thirds the length of the underhand; movable finger shorter than underhand and only twice the length of the area between the upper keels of the hand, lobate in the basal half, but not so strongly as in *S. petersii*. *Pectinal teeth* 6-7.

♂. With much longer chelæ and a slightly longer tail than in female. *Tail* about three times as long as the carapace, which is slightly shorter than the 4th and 5th segments, and barely as long as the 5th and half the vesicle. Humerus a little longer than carapace, brachium scarcely so long; underhand longer, sometimes much longer and twice as long as width of hand; movable digit as long as carapace, more strongly lobate than in female. *Pectinal teeth* 8.

Measurements in mm.—♀. Total length 56, carapace 8.5, tail 23, underhand 9, width of hand 5.

♂. Total length 51, carapace 9, tail 27, underhand 11, width of hand 5.2.

Loc. Western Himalayas: Jaunsar, 6000-9000 ft. (*Gamble & Smythies*); Dehra Dún, 2000 ft. (*Gamble, Smythies, & Gleadow*); Kasauli (*Waller-Barrow*); Dharmasila (*Fulton*).

Subspecies *satarensis*, nov.

♀. Resembling the typical form in size and colour, but very much smoother, the carapace and terga being at most finely granular, leaving the median keel and area of the posterior border immediately behind it smooth; in some cases the terga are finely granulated only at the sides, smooth and punctured elsewhere. The chelæ, too, are much less coarsely granular both on the keels and on the intercarinal spaces; digits very slightly lobate.

Sexual features of male much less developed than in typical form; humerus about as long as carapace, underhand only a little longer and less than twice the width of the hand. Brachial pores 13-14.

Measurements in mm.—♀. Total length 60, carapace 8·3, tail 2·3, underhand 9, width of hand 5·8.

♂. Total length 57, carapace 8, tail 2·4, underhand 8·5, width of hand 5·3.

Loc. Mahableshwar, Satára district (*Wroughton*).

Subspecies *tenuicauda*, *Pocock*, *A. M. N. H.* (6) xiii, p. 77, 1894; *Kraep. Tierr., Scorp. etc.* p. 181, 1899.

Differing from the preceding subspecies as well as from the principal form in being very much smaller and in having the legs, with the exception of the tarsi, which are yellow, fuscous instead of yellowish red. *Terga* smooth mesially in ♀, as in *S. satarensis*; finely granular in ♂. *Chelæ* in ♀ with fingers scarcely noticeably lobate; *chelæ* in ♂ very long and slender, being even more modified than in the typical form of the species; fingers strongly lobate. Brachial pores 12–13.

Measurements in mm.—♀. Total length 36, carapace 6, tail 1·6, underhand 6·8, width of hand 4.

♂. Total length 38, carapace 5·8, tail 1·7·5, underhand 7·2, width of hand 3.

Loc. The Deccan.

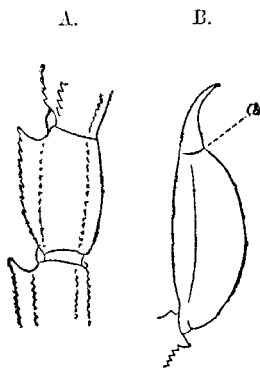


Fig. 20.—A. 4th with parts of 3rd and 5th caudal segments of *Scorpiops longimanus*.

B. Vesicle of tail of ditto, showing annular groove (a) at base of aculeus.

57. *Scorpiops longimanus*, *Pocock*, *A. M. N. H.* (6) xii, p. 326, pl. xiv, fig. 12, 1893; *Kraep. Jb. Hamb. wiss. Anst.* xi, p. 191, 1894; *id. Tierr., Scorp. etc.* p. 180, 1899.

♀. *Colour* entirely black on the dorsal surface and tail. *Carapace* not so depressed as in *S. montanus* and with deeper grooves, not so long as the first three caudal segments, considerably shorter than the 4th and 5th, and less than the 5th and half the vesicle. *Tail*

thicker and longer than in *S. montanus*, about three times as long as the carapace, 1st segment at least as wide as the humerus; keels and granulation as in *S. montanus*; *vesicle* as in that species, but with a distinct semicircular sulcus at the base of the aculeus on each side. *Chela* more resembling those of *S. leptochirus* than those of *S. montanus*, except for two spiniform teeth on the brachium; brachium shorter than carapace, with inferior rows of 9-10 (in one case 11) setal pores, 9 commonly occurring in young; the crests weaker and the area at the base of the anterior spines not so prominent; *hand* constantly with only three pores in a curved series below, all its crests much weaker than in *S. montanus*, width of its dorsal area between the keels much less than half the movable finger; the underhand almost twice the width of the hand, but not quite so long as the movable finger, which is at least as long as the carapace, but is scarcely noticeably lobate, outer row of supernumerary teeth, as far back as lobe, 12, inner row 6. Granular crests on under side of *femora* of legs weaker than in *S. montanus*. *Pectinal teeth* 6-8.

♂. Very like the female; *tail* scarcely if at all longer; *chela* a little longer, hand thicker, and fingers lobate; underhand a little longer than carapace and longer than movable finger, which is about equal to carapace.

Measurements in mm.—♀. Total length 51, carapace 7·5, tail 25, underhand 7·5, movable finger 8, width of hand 4.

♂. Total length 47, carapace 7·5, tail 26·5, underhand 8·2, movable finger 7·6, width of hand 4·8.

Loc. Assam. Sylhet; Dhubri (*Smart*); North Cachar Hills; Sadiya; Naga Hills.

This species was based upon a single female example from Sylhet. The measurements given above are taken from an adult male and female of the same species from Dhubri. These specimens are smaller than the type and than most of the adult examples that have come to hand.

58. *Scorpiops asthenurus*, sp. n.

♂. Belonging to the same category of species as *S. longimanus*, which it resembles in colour, sculpturing, &c. The *tail*, however, is shorter and weaker, being only about twice as long as the carapace, which is almost as long as its first three segments or as the 4th and 5th; dorsal keels of the 3rd and 4th weakly spiniform, but not elevated, being lightly depressed at the posterior end; 1st segment only as wide as the brachium; a distinct annuliform sulcus at base of aculeus. *Chela* as in *S. longimanus*; brachial pores 9; hand much wider than in *S. longimanus*, its inner edge more strongly convex, its width more than half the length of the underhand; area between the keels of its dorsal surface less than half the length of the movable finger, which is not quite equal to the underhand or to the carapace; outer edge of finger not evenly curved, but showing a slight bend just on a level with the lobe;

lobe large; notch on immovable finger correspondingly deep, but when closed a very distinct nearly sigmoidal space is left between the bases of the fingers; 3 large setal pores on underside of hand, in addition to the invariable pair near base of finger. *Pectinal teeth* 6.

Measurements in mm.—Total length 35, carapace 5, tail 17, underhand 6, movable finger 5·5, width of hand 3·5.

Loc. Kalimpong near Darjiling (*Stebbing*).

59. *Scorpiops binghamii*, *Pocock, A. M. N. H.* (6) xii, p. 327, pl. xiv, fig. 13, 1893.

Very closely allied to the Assamese *S. longimanus*, but differing in having 14–15 setal pores on the underside of the brachium, and the hands more distinctly lobate both in ♂ and ♀.

Measurements in mm.—♀. Total length 60, carapace 9·8, tail 31, underhand 9·5, movable finger 9, width of hand 4·8.

♂. Total length 55, carapace 8, tail 27, underhand 9, movable finger 7, width of hand 5.

Loc. Lower Burma: Pegu Hills and Central Tenasserim (*Bingham*).

60. *Scorpiops anthracinus*, *Simon, J. A. S. B.* lvi, p. 112, 1887.

♀. Allied to the two preceding species, but easily recognizable from both by the extreme slenderness of the hand and by the larger number of setal pores upon the lower side of the brachium and hand. Brachial pores 19; a curved row of 10 pores on underhand. *Hand* very slender, its inner and outer edges nearly straight and parallel, its width less than half the length of the underhand, the width of its dorsal area between inner keel and the finger-keel less than one-third the length of the movable finger and less than width of humerus; movable finger equal to the carapace and slightly exceeding the underhand. *Pectinal teeth* 10–11. Upper crests of *tail* more elevated and spiniform than in the other species.

Measurements in mm.—♀. Total length 57, carapace 8·5, tail 27, underhand 7·5, movable finger 8·5, width of hand 3·5.

Loc. Tavoy in Tenasserim.

61. *Scorpiops lindstroemii*, *Thorell, Ann. Mus. Genova*, xxvii, p. 573, 1889: lugubris, *id. ibid.* p. 579.

♀. Resembling *S. anthracinus* in having a row of 9–10 setal pores on the underhand in the adult, but differing principally in having only 15 instead of 19 brachial pores, and the chelæ both longer and stouter, &c. Dorsal crests on tail with terminal spine not so strong as in *S. anthracinus*; 1st segment narrower than

humerus, only as wide as the intercarinal area of its upper surface. *Chela* with humerus as long as carapace; width of hand almost half the length of the underhand, which is as long as the movable finger and longer than the carapace; width of dorsal area of hand between the keels about one-third the length of the movable finger; finger more strongly lobate than in *S. anthracinus*. *Pectinal teeth* 8.

Measurements in mm. of type.—Total length 68, carapace 12, tail 37, humerus 12.3, underhand 13, movable finger 13, width of hand 6.5, of its dorsal intercarinal area 4.2.

Loc. Mt. Mooleyit in Tenasserim (*Fau*), also the North Chin Hills in Upper Burma (*Watson*).

Scorpiops lugubris, Thorell (Ann. Mus. Genova, xxvii, p. 579), was based upon an immature specimen of the genus from the same locality as the type of *S. lindstroemii*. In all probability it is the young of that species. It has 7 pores on the lower side of the hand. An immature specimen from the North Chin Hills in Upper Burma closely resembles the type of *S. lugubris*.

The following species, which I have not seen, has been omitted from the table:—

62. *Scorpiops affinis*, *Kraep. Jb. Hamb. wiss. Anst.* xv, p. 44, 1898; *id. Terr., Scorp. etc.* p. 182, 1899.

“Resembling *Sc. hardwickii* in size, colour, &c., but with the keels of the chelæ granular. Hand with finger-keel and keel of underhand coarsely granular; inner border not limited throughout by a smooth keel, but marked with a row of stronger granules; inner horizontal portion of upper side of hand covered with numerous isolated rounded granules like those of the outer surface. Fourth abdominal sternum coarsely punctured, almost as in a thimble. *Pectinal teeth* 5-7.

“*Loc.* Himalaya.”

This species is evidently nearly related to *S. crassimanus*, and according to the characters cited should fall under heading α^3 of the synopsis. Nothing, however, is said respecting the prominence of the inner edge on the upper surface of the hand. *Sc. crassimanus*, moreover, is a larger species than *S. hardwickii*, and the 4th abdominal sternum is not punctured in the way described as characteristic of *S. affinis*. Hence the two species must for the present be regarded as distinct.