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RESULTS OF THE ARCHBOLD EXPEDITIONS.

NO. 63

THE CRUSTACEA DECAPODA MACRURA COLLECTED BY THE ARCHBOLD NEW GUINEA EXPEDITIONS

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As was to be expected, the collection of macrurous decapod Crustacea gathered by the three Archbold expeditions (1933–1934 to southeast Papua, 1936–1937 to the Fly River region of southwest Papua, and 1938–1939 to the central mountain range of Netherlands New Guinea) is very small, since during these expeditions the emphasis was placed on the collecting of vertebrates, insects, and plants, while no special attention was given to the Crustacea. No macrurous decapods were collected at all by the first Archbold expedition, while the collections of that group made by the second and third expeditions consist of only three species (one belonging to the prawns and two to the crayfishes). All species are fresh-water forms. The number of specimens totals 33 (seven prawns and 26 crayfishes). The prawns belong to a widely distributed species, but both species of crayfish are new to science.

The material of the second Archbold expedition is preserved in the American Museum of Natural History in New York, that of the third expedition in the Zoological Museum at Buitenzorg, Java. I wish to express my sincere gratitude to Mr. John C. Armstrong, Assistant Curator of Invertebrates of the American Museum of Natural History, for the privilege of examining the material of the American Museum, and to Mr. M. A. Lieftinck,

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Director of the Zoological Museum at Buitenzorg, for allowing me to study the material of his museum.

It was my good fortune that at the time I examined the present material, Dr. L. J. Toxopeus, at present Professor of Zoology at the University of Indonesia, Bandung, Java, was visiting the Leiden Museum. Dr. Toxopeus, who was the entomologist of the Third Archbold Expedition and in that capacity collected the crayfishes of the Balim and Ibele rivers, provided me with valuable information concerning these animals.

An itinerary of the Second Archbold Expedition has been given by Rand and Brass (1940), of the third expedition by Archbold, Rand, and Brass (1942), and Toxopeus (1938-1941) has also published his impressions as an entomologist of the latter expedition.

For the photographs reproduced in this paper I am much indebted to Mr. H. C. Cornet, of the Rijksmuseum van Natuurlijke Historie at Leiden.

SUBORDER MACRURA

DIVISION NATANTIA

Only one species of prawn was collected:

Macrobrachium rosenbergii (De Man)

MATERIAL EXAMINED: Upper Fly River, 5 miles below Palmer Junction, Western Division of Papua, latitude $5^{\circ} 58' S.$, longitude $141^{\circ} 28' E.$; May, 1936; 1936-1937 Archbold New Guinea Expedition; one male specimen, *ca.* 260 mm.

Lower Fly River, opposite Sturt Island, Western Division of Papua, latitude $8^{\circ} 13' S.$, longitude $142^{\circ} 14' E.$; October 7, 1936; 1936-1937 Archbold New Guinea Expedition; six specimens (two males and four females), 85-100 mm.

The large male specimen lacks the tip of the rostrum and both second legs. Some of the smaller specimens too are damaged, but the identity of the material could be established beyond doubt.

Macrobrachium rosenbergii (De Man), which in older literature generally is named *Palaemon carcinus* Fabricius (for a discussion of the correct name of this species, see Holthuis, in press), has a rather wide range of distribution. It is known from India, Malaya, Siam, the Malay Archipelago (including the Philippines and New Guinea), and also has been found in western and northern Australia (the American Museum of Natural History possesses several specimens of this species from Archer River, Queensland).

The species lives in fresh and brackish water (very often in large rivers), and has also been recorded from the sea.

SUBORDER MACRURA

DIVISION REPTANTIA

The two species of crayfish dealt with here both belong to the parastacid genus *Cherax*. This is the only genus of Parastacidae known to inhabit New Guinea. A revision of the New Guinea crayfishes has been given recently by the present author (Holt-huis, 1949). In this revision 10 species and one variety were described and figured. Neither species collected by the Archbold expeditions can be identified with any of these published New Guinea Parastacidae, and therefore each is described here as new.

***Cherax divergens*, new species**

Figure 1

MATERIAL EXAMINED: Upper Fly River, 5 miles below Palmer Junction, Western Division of Papua, latitude $5^{\circ} 58' S.$, longitude $141^{\circ} 28' E.$; May, 1936; 1936-1937 Archbold New Guinea Expedition; one male, 168 mm.

DESCRIPTION: The rostrum is slender and reaches distinctly beyond the end of the antennular peduncle and almost attains the tip of the scaphocerite. It is 3.2 times as long as its basal breadth.¹ The upper surface of the rostrum is distinctly concave, and the tip is directed straight forward. The lateral margins of the rostrum each bear two well-developed teeth, which are placed in about the middle and at three-fourths of the length of the rostrum. The broadest part of the rostrum lies a small distance behind the proximal teeth. From that point the rostrum regularly tapers towards the apex. The rostral carinae are very strong and continue a good distance on the carapace; at about one-fourth of the distance between the cervical groove and the posterior limit of the orbit they become inconspicuous and disappear. Caudally these carinae are converging slightly. The postorbital spines are strong and continue posteriorly in strong postorbital carinae which almost reach as far backward as the rostral carinae. No median carina is present. The carapace is finely pitted, each pit bearing a few short hairs. In the lateral part of the carapace behind the

¹ The basal breadth is considered here to be the distance between the rostral carinae at the level of the postorbital spines. The length of the rostrum is measured from the postorbital spines to the tip of the rostrum.

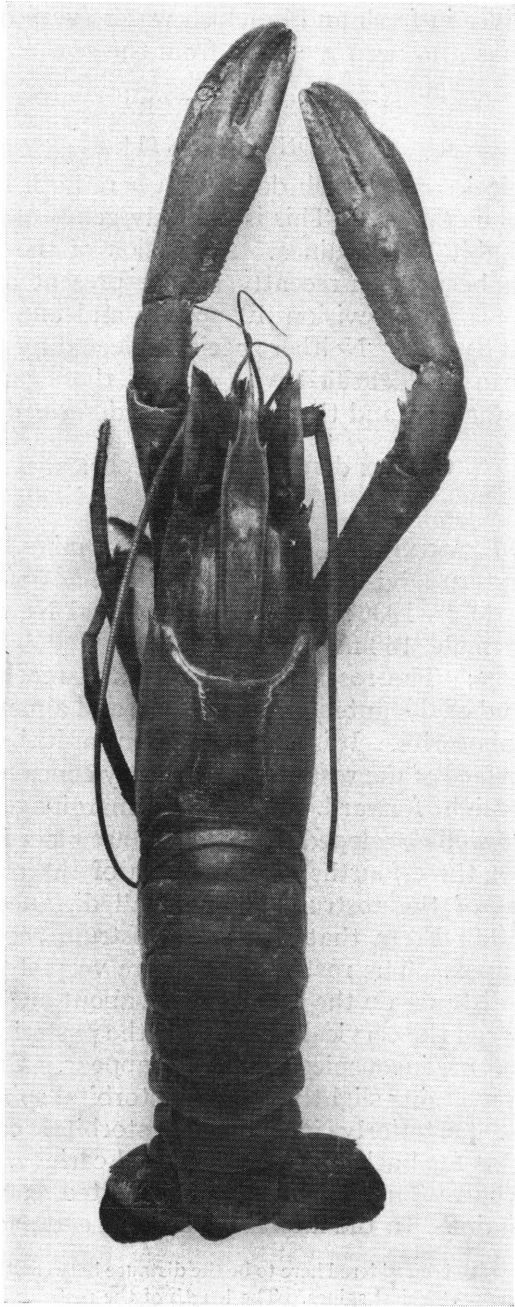


FIG. 1. *Cherax divergens*, new species, holotype. Dorsal view. $\times 0.76$.

cervical groove, small tubercular elevations are present immediately behind the pits, giving this part of the carapace a rather rough appearance. The cervical groove is very deep. Three heavy, anteriorly directed spines are placed close behind the cervical groove in the middle of each of the lateral surfaces of the carapace.

The epistome is smooth but for a short row of tubercles, which runs laterally from each anterolateral angle of the oral field. The sternal keels are sharp, and the last is evenly rounded. No perforations are visible in the lateral processes.

The abdomen is smooth, the pleurae are provided with rather numerous pits, while a few pits also may be observed on the rest of the dorsal surface of the segments. The telson is normal in shape.

The eyes have the cornea slightly broader and shorter than the eye stalk.

The antennula is normal in shape. The antenna has the scaphocerite long and slender, triangular in shape. The scaphocerite is broadest in the basal half and gradually narrows into the final tooth. It is 3.1 times as long as broad. The antennal peduncle reaches about as far forward as the rostrum. Each of the first, second, and third joints of the peduncle is provided with a well-developed sharp spine.

The third maxilliped just fails to reach the base of the last segment of the antennal peduncle.

The first legs reach, with the end of the merus, to the tip of the scaphocerite. The chela is almost four times as long as wide. The fingers are 0.8 times as long as the palm. The cutting edge bears in the middle of its length a distinct sharp tooth. Behind this tooth the edge bears six to eight smaller teeth, while before it five or six very small teeth are visible. The dactylus also bears one fairly large tooth, which is situated behind the large tooth of the fixed finger. Behind this tooth there are four or five smaller teeth, and before it eight very small teeth. Short hairs are present along both sides of the cutting edges, being most distinct in the basal part. The palm is elongate, being twice as long as broad; both margins are straight and diverge from the base. The upper margin is sharp and serrate by the presence of a single row of some 16 or 17 anteriorly directed sharp teeth. The lower margin is rounded. Both surfaces of the palm are convex; the outer is rather evenly convex, but the inner bears a median longitudinal

elevation, at both sides of which (and especially at the upper side) the surface is somewhat depressed. A large, uncalcified region is present on the lower surface of the fixed finger, extending a very small distance on the palm. This uncalcified area starts at 0.9 of the length of the palm (measured from the base) and extends all the way up to the tip of the finger. The carpus is somewhat more than half as long as the palm. Its anterior margin bears three strong spines at the inner and lower side, while a fourth spine is present in the middle of the inner surface of the carpus. The merus is about twice as long as the carpus, and somewhat less than four times as long as high. Its upper margin bears a strong spine at about one-fifth of its length from the anterior margin. Behind this spine a small tubercle is visible; the rest of the upper margin is quite smooth. The inner margin of the lower surface of the merus bears some indistinct tubercles in the basal part; the outer margin is vague but bears two or three very strong spines in the middle. The anterior margin of the merus bears one spine at the inner and one at the outer side of its lower part. The ischium is about one-third of the length of the merus and bears a strong spine at the inner margin.

The second pereopod reaches as far forward as the tip of the rostrum. The fingers are as long as the palm and two-thirds of the length of the carpus. The merus is about 1.5 times as long as the carpus. The third leg reaches with half the length of the fingers beyond the scaphocerite. The fingers are three-fourths of the length of the palm, half as long as the carpus, and two-fifths of the length of the merus.

The fourth leg just fails to reach the end of the antennular peduncle. The dactylus is 3.5 times as long as high and bears at its lower margin about 40 spinules, arranged comb-like. The propodus is 2.5 times as long as the dactylus, 1.3 times as long as the carpus, and 0.8 times as long as the merus. The fifth leg reaches slightly beyond the base of the scaphocerite. The propodus is three times as long as the dactylus and 1.75 times as long as the carpus, while it is of about the same length as the merus.

The pleopods and uropods are normal.

The species belongs to the *Astaconephrops* section of the genus *Cherax*. This section is characterized by the strong development of the rostral carinae, and its New Guinea representatives have the scaphocerite triangular in shape. *Cherax divergens* is most closely related to *Cherax albertisii* (Nobili), and it even is not im-

possible that the present specimen is nothing but an adult male of *Cherax albertisii*. The differences from *Cherax albertisii* are:

1. The rostrum bears two lateral teeth at each side only (three in *C. albertisii*).
2. The rostral carinae are somewhat more pronounced.
3. The chela of the first leg is relatively broader and has the palm differently shaped.
4. The adult male has an uncalcified area on this chela.

Though the character of the number of lateral teeth of the rostrum in my material of the *Astaconephrops* group is pretty well constant within the species, it is possible that the first character mentioned here is not of much value. The absence of an uncalcified area in the chela of the only male specimen of *Cherax albertisii* (Nobili) seen by me (a specimen of 96 mm.), may be due to the fact that this male specimen was not fully developed. Young males of other species of this group (e.g., *Cherax lorentzi* Roux) also lack this uncalcified region, but the difference in the shape of the chela is far less than between the above male of *Cherax albertisii* and the present specimen. The question whether *Cherax divergens* is based on an adult male of *Cherax albertisii* or not can be solved only by much more material than that which is at my disposal.

As were *Cherax lorentzi* and *C. albertisii*, the present species was collected at a low altitude. Rand and Brass (1940, p. 368), in their itinerary, state that the Fly River at Palmer Junction Camp, which is very close to the locality where the present specimen was collected, is only about 30 meters above sea level.

Cherax monticola, new species

Figures 2-4

"Kreeften" KREMER, 1923, *Onze Vloot*, vol. 15, p. 30.

"Crayfish" ARCHBOLD, RAND, AND BRASS, 1942, *Bull. Amer. Mus. Nat. Hist.*, vol. 79, pp. 256, 268.

"een groot soort kreeften" LE ROUX, 1948, *De Bergpapoea's van Nieuw Guinea*, vol. 1, p. 317.

MATERIAL EXAMINED: Ibele River, 15 kilometers northeast of Habbema Lake, altitude 2250 meters, latitude 4° S., longitude 138° 44' E., November 26, 1938; Netherlands-American North New Guinea Expedition, 1938-1939 (i.e., the Third Archbold Expedition); four males, 102-112 mm.; nine females, 97-125 mm. (paratypes).

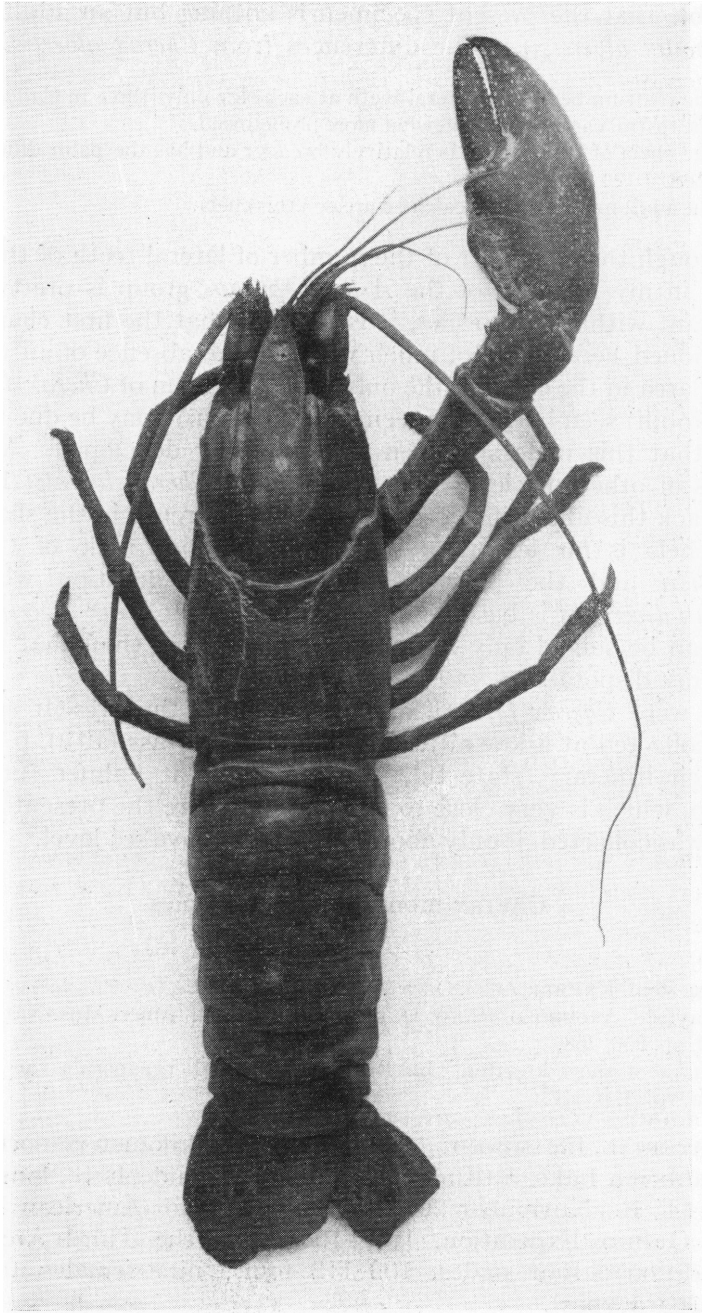


FIG. 2. *Cherax monticola*, new species, male, holotype. Dorsal view. Natural size.

Balim River Camp on Balim River, east of Habbema Lake, altitude 1700 meters, latitude $4^{\circ} 10'$ S., longitude 139° E.; November 28, 1938; Netherlands-American North New Guinea Expedition, 1938-1939; five males, 85-126 mm.; seven females, 81-177 mm. (holotypes and paratypes).

DESCRIPTION: The rostrum of the Balim River specimens almost reaches to the end of the antennular peduncle; even in young specimens it reaches beyond the middle of the last segment of that peduncle. In the Ibele River specimens, however, it reaches to or slightly beyond the base of the last joint of the antennular peduncle. The tip is curved downward a little. The upper surface is flat or somewhat hollowed, with the lateral margins elevated. These lateral margins are straight. The rostrum regularly tapers into a sharp apex, being elongate triangular in outline. It is about 1.8 to 1.9 times as long as broad at base. At each side one or two (seldom none or three) small, but distinct, lateral teeth are present in the ultimate third or quarter of the rostrum. The rostral carinae are distinct and reach to or slightly beyond the postorbital spines. The ultimate posterior part of the rostral carinae curves slightly inward. The postorbital carinae are distinct but fade away slightly before the middle of the distance between the postorbital spines and the cervical groove. A groove runs close along the outside of the postorbital carina. The carina curves somewhat outward posteriorly, and a blunt tubercle is present near the end of it. This tubercle is rather indistinct in juvenile specimens, while it moreover is more distinct in the Ibele River specimens than in those from the Balim River. The cervical groove is very distinct. Numerous rather widely separated tubercles are present on the lateral parts of the carapace behind the cervical groove. In the median region of the carapace the tubercles are absent, or faintly indicated in the posterior part. Numerous pits may, however, be observed in this median region. Also in the region anterior to the cervical groove only pits may be observed, except in a small area just behind the antennae, where there are some tubercles.

The epistome bears tubercles in the extreme lateral parts and just before the anterolateral angle of the oral field. These two tuberculated areas are connected posteriorly, but anteriorly they are separated by a smooth space. The epistome is smooth in the triangular median part and bears a deep pit in the anterior region. Behind this pit a shallow groove is present. The oblique margins

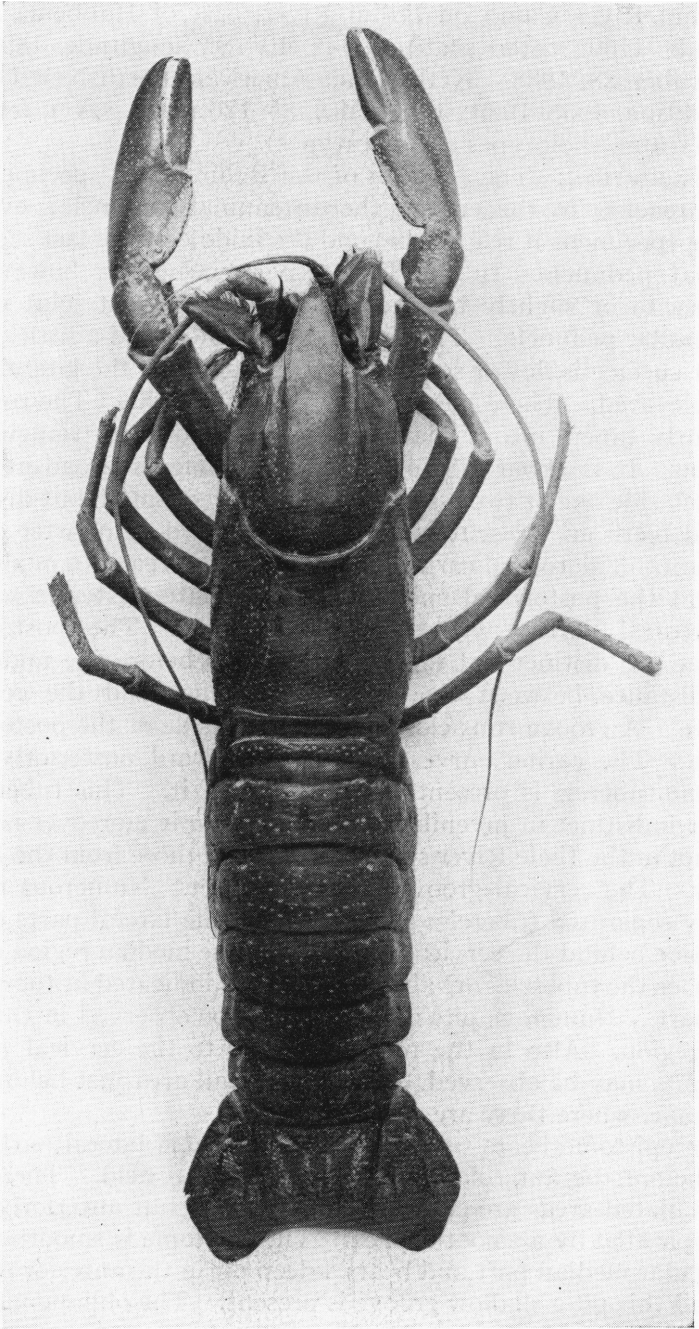


FIG. 3. *Cherax monticola*, new species, female, paratype. Dorsal view. $\times 0.76$.

of this median part are not elevated as they are in *Cherax communis* Holthuis. The rounded anterior part of the epistome is almost circular and ends in a minute anterior point. The keels of the sternum are sharp, and the lateral processes show no openings.

The abdomen is smooth but pitted in the median region. The pleurae are provided with some tubercles.

The eyes are small. The cornea is shorter than the stalk and narrower than the peduncular base.

The antennulae are normal in shape, resembling those of *Cherax communis*.

The antenna has a spine on the first and second joints of the peduncle. The scaphocerite has the outer margin somewhat convex, with the final tooth directed slightly outward. This final tooth overreaches the lamella. The shape of the lamella differs from that of *Cherax communis* by being not quite semicircular. The anterior part of the lamella is more narrow and more triangular in shape than in the other species. It shows, however, much more resemblance to the scaphocerite of *Cherax communis* and the other related forms from the Wissel Lakes region than to that of *Cherax lorentzi*, *C. albertisii*, or *C. divergens*. In the Balim River material the scaphocerite is more distinctly triangular than in the specimens from the Ibele River.

The oral parts are typical. The third maxilliped attains the base of the last segment of the antennal peduncle or overreaches it slightly.

The first legs are very heavy and are equal or subequal in shape. In the adult males they reach with almost the whole carpus, in females with only part of that joint, beyond the scaphocerite. The chela is strongly compressed. In my adult males it is about 2.3 times as long as broad, in my adult females 2.3 to 2.7 times. In juveniles this relation is 2.6 to 3. The fingers are as long as, or slightly longer than, the palm (in adult males they are relatively shorter than in the females). The fixed finger in adult males is about twice as high as the dactylus. In juveniles this difference is less marked. A row of small sharp tubercles extends over the entire cutting edge of both fingers, one or two tubercles being larger than the rest. In some cases all but the larger tubercles are inconspicuous. A single row of short oblique hairs may be present along the outside of the cutting edge, while tufts of longer hairs are visible on the inside, being especially numerous

near the base of the fingers. The palm is compressed and is shorter in the males than in the females. The outer surface is almost evenly convex and smooth, bearing only several pits. The inner surface is smooth and pitted, too, but has the median portion elevated to a low, broad ridge. The upper margin of the palm is serrate. A field of hairs is present on the outer surface, close along the upper margin. In my largest male (126 mm.) the larger part of the lower margin of the fixed finger is decalcified, showing as a whitish soft region. This soft region extends from the extreme anterior part of the palm proper to a short distance before the top of the fixed finger. In this same specimen a second area shows symptoms of decalcification, namely, a small region in the proximal half of the lower margin of the palm; here too the integument is soft (it is somewhat shriveled in this spirit specimen), but it still possesses the normal brown color of the chela and therefore is much less conspicuous than the decalcified area of the fixed finger. In smaller males (110 and 111 mm. in length) this second decalcified area is absent altogether, while the first is much smaller. In still smaller males (82, 90, 102, and 108 mm. in length) also the anterior soft region is absent. The carpus is slightly more than one-third of the length of the chela. The inner surface bears some tubercles and a conspicuous tuft of hairs; a sharp spine is placed just above this tuft of hairs. The anterior margin of the carpus bears three spines, one at the inner part of the upper side of the margin, the other two on the lower side. Two distinct tubercles are placed in the inner posterior part of the lower surface of the carpus. The merus is somewhat less than twice as long as the carpus and somewhat more than twice as long as high. The upper margin bears a serrate carina, which ends some distance before the anterior margin of the merus in a strong spine. The lower surface of the merus bears two almost parallel rows of spinules. The inner row is evenly serrate throughout; the outer row is formed by two strong spines, between which a smaller spinule often is present. A strong spine is placed at the inner lower part of the anterior margin of the merus. The ischium is slightly less than half as long as the merus. No hairs are present on either merus or ischium.

The second legs reach to the end of the scaphocerite. The fingers are slightly longer than the palm. The carpus is as long as the fingers and half the palm combined. The merus is 1.5 times as long as the carpus. The ischium is half as long as the merus.

The third leg reaches with part of the fingers beyond the scaphocerite. The fingers are slightly shorter than the palm. The carpus is somewhat longer than the palm. The merus is about 1.5 times as long as the carpus, and twice as long as the ischium.

The fourth leg reaches with part of the dactylus beyond the scaphocerite, or fails to reach that far. The dactylus is four times

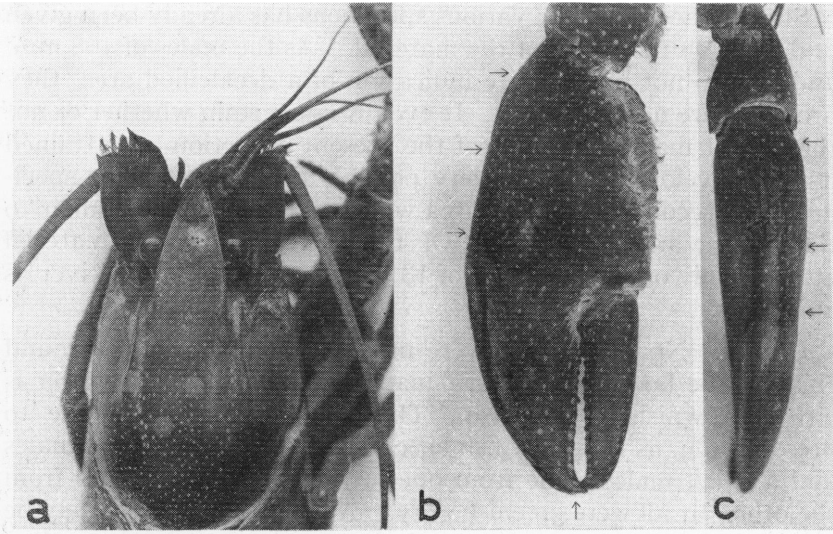


FIG. 4. *Cherax monticola*, new species, male, holotype. A. Anterior part of body in dorsal view. $\times 1.3$. B. Large chela, lateral view. $\times 1.5$. C. Large chela, ventral view. $\times 1.2$. Arrows in B and C indicate the extent of the uncalcified regions.

as long as high and bears a ventral row of 30 to 40 spinules, arranged comb-like. The propodus is twice to 2.5 times as long as the dactylus and about 1.3 times as long as the carpus. The merus is distinctly longer than the propodus and slightly less than twice as long as the ischium. The fifth leg reaches to the base of the scaphocerite or somewhat less far. The propodus is 2.5 times to thrice as long as the dactylus, 1.6 times to almost twice as long as the carpus, and as long as the merus.

The pleopods and uropods are normal in shape.

Very young specimens (e.g., a female of 81 mm.) differ from the adult material by having the tubercle at the end of the postorbital carina less distinct, the tubercles on carapace and abdomen less

conspicuous (though they always remain visible), and the first leg reaching with the chela only beyond the scaphocerite. Furthermore the chela of this leg is thrice as long as broad, the fingers are somewhat longer than the palm, the fixed finger is only a little higher than the dactylus, and the cutting edges of the fingers each bear only two teeth. Finally the second to fifth legs reach less far forward than in adult specimens.

SIZE: The size of the various specimens has already been given under the enumeration of the material. As the males of 108 mm. and less do not possess any indication of a decalcified area, they probably are not yet adult. It even is not certain whether or not the largest male (126 mm.) of the present collection has attained its full development; it is very possible that in still older specimens the second decalcified area will develop to a form similar to that of the anterior region. Of the 16 females of the material at hand only one, a specimen of 131 mm. from the Balim River, is ovigerous.

COLOR: No color notes were made in the field. The ground color of the body in my spirit material from the Balim River is either brownish or greenish. This difference may be due to preservation, as the brownish specimens (the two largest females and a small male) came from one jar, while the specimens from the other jar all were greenish gray. A violet or red tinge may be observed on the lateral parts of the carapace and the median region of the abdomen, the posterior margins of the segments excluded. The pleurae generally have a yellowish tinge. The chelipeds are brown. In younger specimens this color is a very light yellowish brown, in adults rather dark. The fingers and generally also a spot on the palm are of a much darker color than the rest of the chela. Juvenile specimens are lighter and of a more uniform color than the adults.

The specimens from the Ibele River also have the ground color of the body yellowish brown or greenish gray. The reddish color of the carapace and abdomen is markedly less distinct, if visible at all. In adult specimens the large chelipeds are dark greenish brown or dark green, the fingers sometimes being darker than the rest. Juvenile specimens are yellowish brown all over. A curious feature in these Ibele specimens is the rose color of the membranous part of the tail fan and of the antennular and antennal flagella.

TYPE: The largest male from the Balim River is the holotype; the other specimens are paratypes.

NATIVE NAME: Le Roux (1948, p. 317) makes the following interesting remark in his monograph on the Mountain Papuans of New Guinea (translated into English): "According to information which I obtained from the inhabitants of the Doraboe Valley, a large species of crayfish, named talò, is much fished for in the country of the Ndani by the Mbagimè-koma and Zoegimè-koma [Prau-people] of the great Balim Valley." These crayfishes doubtless belong to the species described here, as they originate from the same locality.

ECONOMIC IMPORTANCE: Dr. L. J. Toxopeus informed me that the native population of the Balim River Valley uses these crayfishes for food. The animals were either shot with three-pointed arrows or captured with a sort of fish trap. Two specimens from the Ibele River material and two specimens from the Balim River show holes in the body, which probably are caused by the above mentioned three-pointed arrows. As the crayfish is common in the Balim River and its branches (see also Archbold, Rand, and Brass, 1942, p. 256) it is of a considerable economic importance for the native population.

COMMENSALS: Many of the crayfishes from both localities have the egg capsules of *Temnocephala* attached to the body. Generally these egg capsules are arranged in circles around the body of the commensal itself (the *Temnocephala* in my material have disappeared, however, so that only the circles of eggs remain to indicate their former presence). Some crayfishes from the Ibele River had the lower surface of the large cheliped with a very great number of these egg capsules placed close together. Also in some other places the egg capsules could be observed, being placed in a more or less irregular way. The egg capsules are fastened to the body of the host with one of the narrow ends, just as in the *Cherax* species of the Wissel Lakes region.

REMARKS: The present species shows a close resemblance to *Cherax communis* Holthuis from the Wissel Lakes, but it may be distinguished by the following characters:

1. The rostrum is more triangular, narrowing gradually towards the apex and bearing less lateral teeth.
2. The rostral carinae converge, the postorbital diverge, posteriorly; in *C. communis* these carinae generally are straight. The tubercle at the end of the postorbital carina is absent in *C. communis*.

3. The abdominal pleurae are tuberculated in the present form and smooth in *C. communis*.
4. The scaphocerite is more triangular than in *C. communis*.
5. The epistome has the lateral margins of the median part not elevated like a ridge as in *C. communis*.
6. The oral field is narrower.
7. The first chelae of the adult male have one or two decalcified areas on the lower margin.

OCCURRENCE: The species for the first time was found by the Nederlandsche Wetenschappelijke Centraal Nieuw Guinea Expeditie 1920–1922 (Netherlands Scientific Central New Guinea Expedition 1920–1922), itineraries of which are given by Kremer (1922, 1923) and Lam (1927–1929, 1945). The crayfishes were found by that expedition in pools in the upper Balim basin, slightly west of Habbema Lake, at an altitude of approximately 3300 meters. This locality is slightly higher up the Balim River than the localities at which the present specimens of the Third Archbold Expedition were collected. Kremer (1923, p. 30) gives a photograph of such a crayfish pool and remarks that the expedition, on its way to the top of Mt. Wilhelmina, caught the crayfishes in these pools and, although the animals were of modest size, they were collected in such numbers that they served as food for members of the expedition. As far as I can ascertain, the 1920–1922 expedition took home no material of these crayfishes. The zoologist of this expedition, Jhr. W. C. van Heurn, and the botanist, Dr. H. J. Lam, participated in only the first half of the expedition, while it was in the second half that the Balim River and the summit of Mt. Wilhelmina were reached.

Cherax monticola seems to occur only in the Balim and Ibele rivers and in the pools mentioned above. In Habbema Lake no crayfish is found, as is emphatically stated in three different sources. Kremer (1923, p. 43) states, “visch en kreeften kregen wij er niet uit” (we got no fish or crayfish from it [Habbema Lake]). Toxopeus (1939, p. 27) makes the remark: “Visch ontbrak geheel, evenals iedere Crustacee” (fish totally lacking, as was also any crustacean). Finally Archbold, Rand, and Brass (1942, p. 268) state, “No crustacean was actually taken from the lake, but a dead crayfish about twenty centimeters long was picked up on the adjacent grasslands.” The origin of this dead crayfish is not very clear. Perhaps it was dropped by one of the natives, who may have carried the specimen as an article of food. I have not seen this particular specimen.

The Balim River at the localities where the crayfishes were found is actually on the north side of the central mountain range of New Guinea. East of the summit of Mt. Wilhelmina, however, it breaks through this range and joins the Eilanden River, which empties into the Arafura Sea on the southwest coast of New Guinea.

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