**A New Blind Freshwater Amphipod (genus Neoniphargus from Western Australia,** by **Chas. Chilton,** M.A., D.Sc., M.B., C.M., LL.B., Rector and Professor of Biology, Canterbury College, N.Z.

*Communicated by* L. Glauert.

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Towards the end of 1923 I received a letter from Mr. L. Glauert, of the Perth Public Museum, forwarding specimens of a blind fresh water gammarid from the Darling Ranges (Darlington). He stated that a few specimens had been forwarded to Dr. W. T. Calman, of the British Museum about a year previously. On preliminary examination the Amphipod appeared to be a new species of the genus *Neoniphargus,* and I got into correspondence with Dr. Calman, of the British Museum, about a year previously. On pretime to describe the species, but had made a drawing of the whole animal. This he sent on to me with the request that I would complete the description, and this I accordingly do in the present paper.

The species proves to belong undoubtedly to *Neoniphargus,* though in one or two respects it differs somewhat markedly from species hitherto described. This is shown mainly in the sexual characters, which are very distinct. Thus in the male the second antenna is particularly short and stout, and there is also a distinct difference between the two sexes in the third uropoda.

From the description given below, and also from that of other species of the genus described in more recent years, it will be seen that the generic diagnosis given by Stebbing in 1906 (p. 404) requires modification in several particulars. Thus the eyes are wanting in the present species, the accessory flagellum is more than two-jointed, the two pairs of gnathopoda are hardly similar, and the third uropod has the outer branch distinctly two-jointed. But the resemblances to the species *N. fultoni* and *N. spenceri,* described by the late O. A. Sayce, and to *N. branchialis* recently described by Professor G. E. Nicholls (1924, p. 105) are so numerous that it is desirable to widen the genus to include them all.

In *N. branchialis* Nicholls, which has been very fully described and figured by Professor Nicholls, and of which I have been able to examine specimens kindly sent by Mr. L. Glauert, branched "accessory branchiae" are present on some of the segments of the peraeon. Similar branched structures are present in a specimen

that I have recently examined from Mr. Kosciusko, and which is intermediate in its characters between *N. fultoni* and *N. spenceri*. I have, however, not seen any accessory branchiae in the species now being described.

I give below a brief specific diagnosis followed by a more detailed report.

**Neoniphargus westralis** sp. nov. Figs. 1-3.

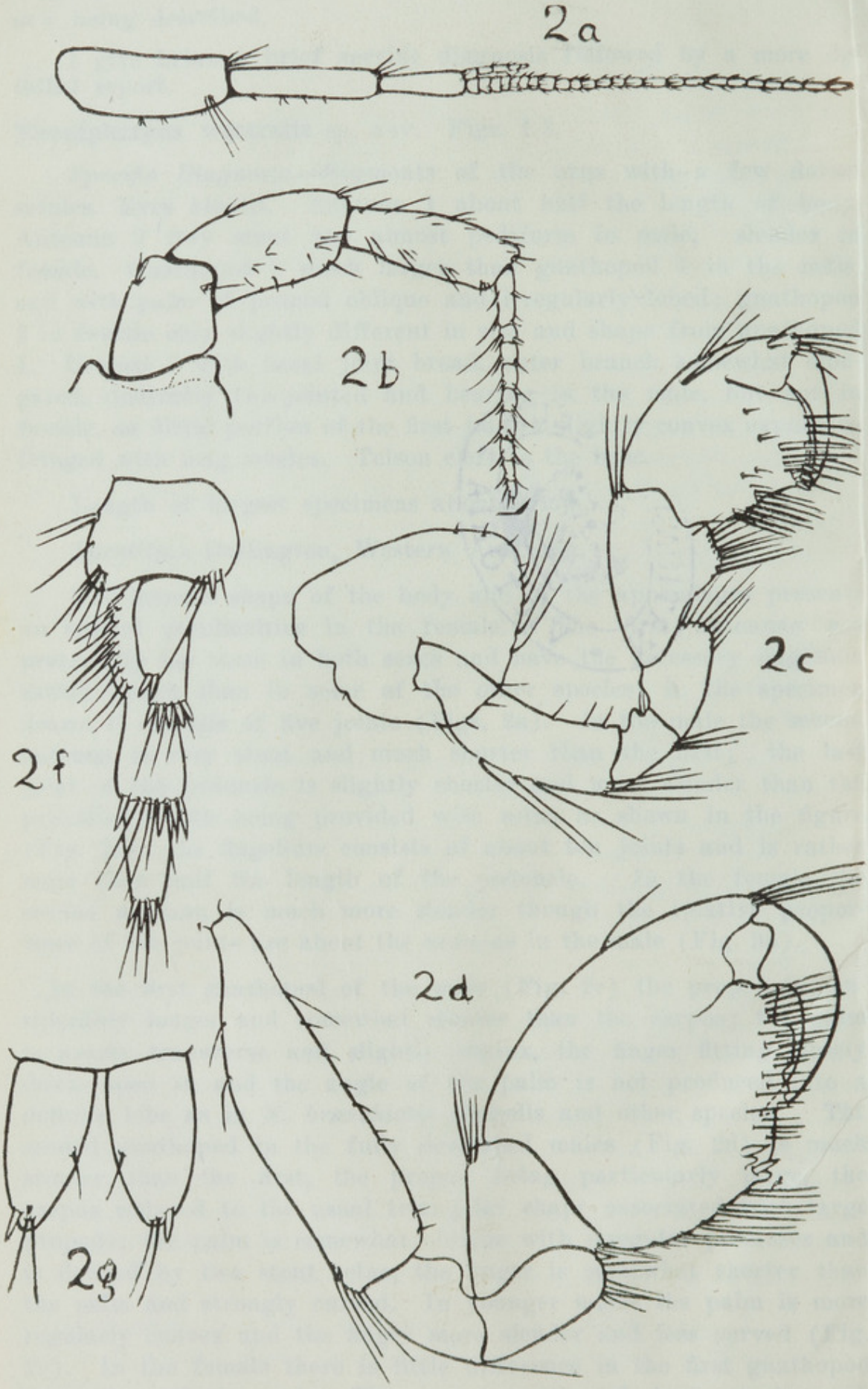
*Specific Diagnosis.*—Segments of the urus with a few dorsal setules. Eyes absent. Antenna 1 about half the length of body. Antenna 2 very stout and almost pediform in male, slender in female. Gnathopod 2 much larger than gnathopod 1 in the male, and with palm of propod oblique and irregularly lobed; gnathopod 2 in female only slightly different in size and shape from gnathopod 1. Uropod 3 with basal joint broad, outer branch somewhat elongated, distinctly two-jointed and bearing in the male, but not in female, on distal portion of the first joint a slightly convex expansion fringed with long setules. Telson cleft to the base.

Length of largest specimens about 8 mm.

*Locality.*—Darlington, Western Australia.

The general shape of the body and of the appendages presents no special peculiarities in the female. The first antennae are practically the same in both sexes and have the accessory flagellum rather longer than in some of the other species; in the specimen drawn it consists of five joints (Figs. 2a). In the male the second antenna is very stout and much shorter than the first; the last joint of the peduncle is slightly shorter and more slender than the preceding; both being provided with setae as shown in the figure (Fig. 2b); the flagellum consists of about ten joints and is rather more than half the length of the peduncle. In the female the second antenna is much more slender though the relative proportions of the joints are about the same as in the male (Fig. 3a).

In the first gnathopod of the male (Fig. 2c) the propod is considerably longer and somewhat stouter than the carpus; the palm is nearly transverse and slightly convex, the finger fitting closely down upon it, and the angle of the palm is not produced into a definite lobe as in *N. branchialis* Nicholls and other species. The second gnathopod in the fully developed males (Fig. 2d) is much stouter than the first, the propod being particularly large, the carpus reduced to the usual triangular shape associated with large propods; the palm is somewhat oblique with irregular processes and is defined by two stout setae, the finger is somewhat shorter than the palm and strongly curved. In younger males the palm is more regularly convex and the finger more slender and less curved (Fig. 2e). In the female there is little difference in the first gnathopod from that of the male. The second gnathopod, however, is much more slender than in the male, and approaches much more nearly to that of the first gnathopod. (Fig. 3b).


2a
2b
2c
2d
2f
2g

The peracopoda and the pleopoda show the normal structure of the genus.

The first uropod has the peduncle considerably longer than the branches. In the second the peduncle is longer than either of the branches, the outer of which is shorter than the inner. The third uropod (Fig. 2f) has the basal joint short and broad, nearly twice as broad as long, the outer branch is about four times as long as the peduncle and is distinctly two-jointed, the second being about half the length of the first which bears a transverse row of stout setules so that it appears partially divided near the middle. The outer margin of the basal portion of the first joint in the male is somewhat convex, forming a slight lobe or projection fringed by a definite row of about ten long setae. The inner branch is about half the length of the first joint of the outer and tapers towards the extremity which bears two stout setules.

In the female the fringed lobe on the distal portion of the basal joint is quite absent, but in other respects the appendage resembles that of the male. (Fig. 3c).

The telson is divided to the base, each lobe tapers somewhat posteriorly, the lateral margins being slightly convex; at the extremity of each is a stout setule and two slender hairs and there is a slender setule about the middle of the inner margin. (Fig. 2g.)

I wish to express my thanks to Mr. L. Glauert, of the Public Museum, Perth, for sending me the specimens; to Dr. Calman, of the British Museum, for the drawing reproduced as Fig. 1, and for other assistance, and to Miss Beryl I. Parlane, one of my students, for the preparation of the other figures.

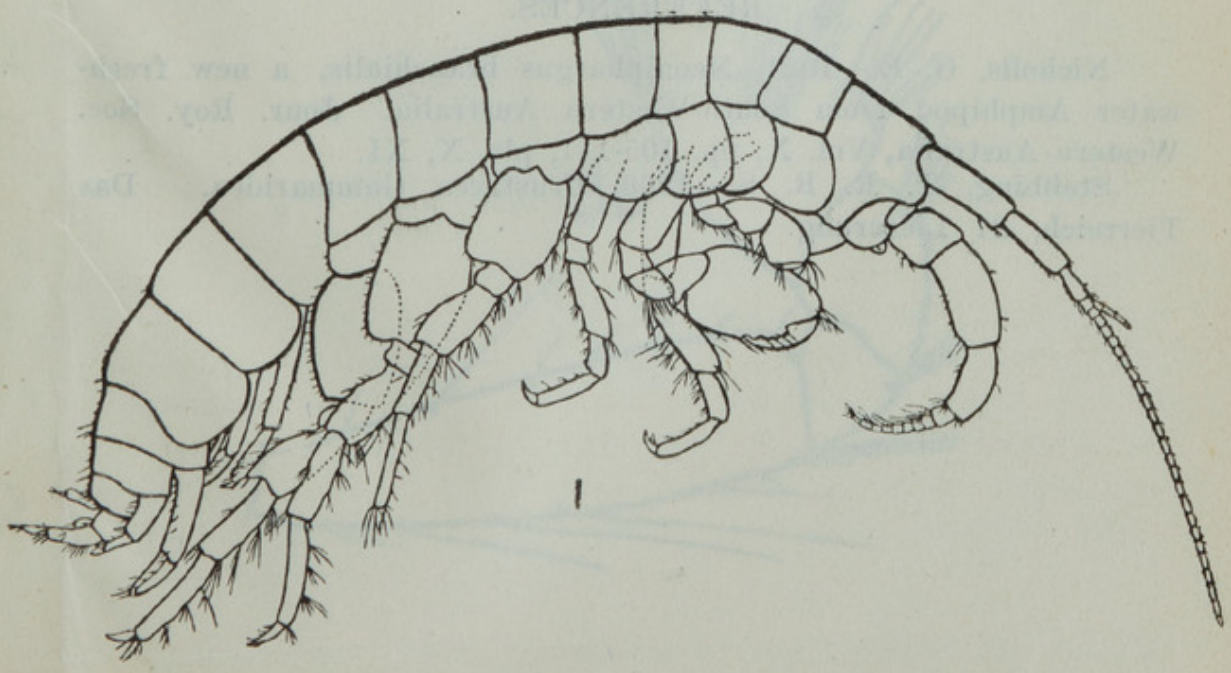


Fig. 1. *Neoniphargus westralis*, male.
Side view of whole animal. (From a drawing by Dr. W. T. Calman).

## EXPLANATION OF PLATES.

### IV.

2. *Neoniphargus westralis*, male.

a. First antenna.

b. Second antenna.

c. First gnathopod.

d. Second gnathopod (of adult male).

f. Third uropod.

g. Telson.

### V.

2c. *Neoniphargus westralis*, second gnathopod (of younger male than in 2d).

3. *Neoniphargus westralis*, female.

a. Second antenna.

b. Second gnathopod.

c. Third uropod.

## REFERENCES.

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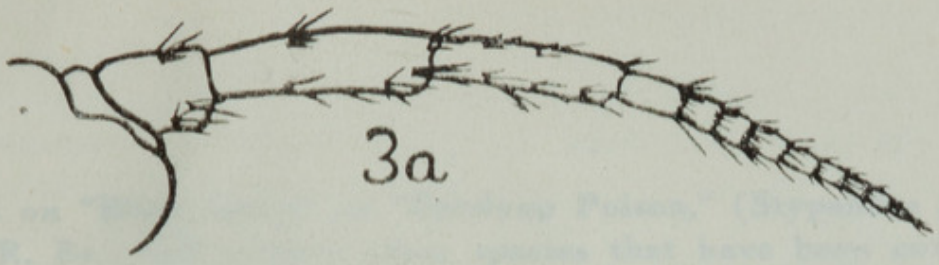
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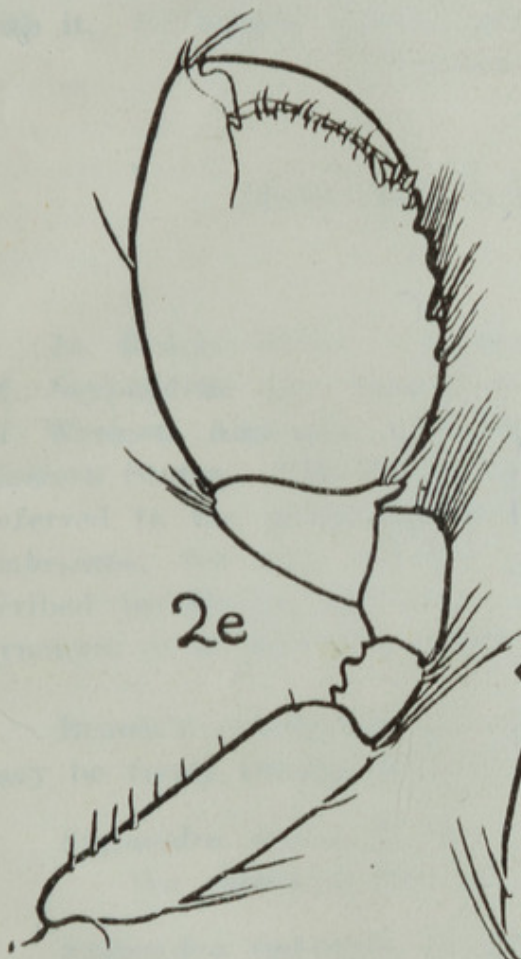
2e


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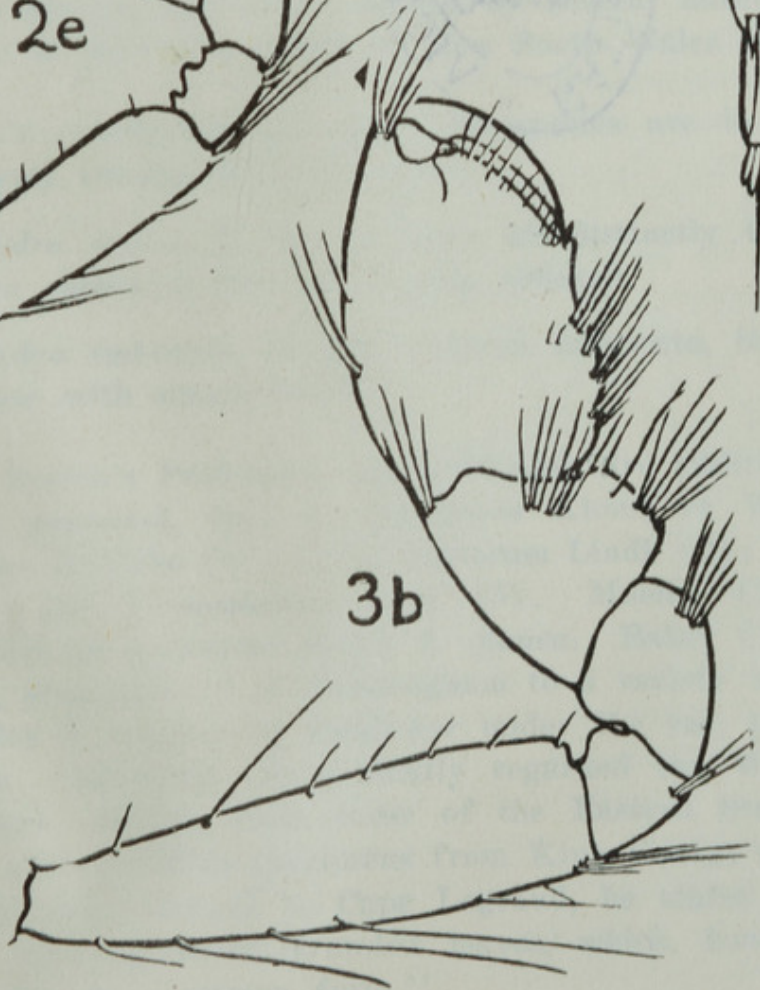
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