

Hewitt, J. 1919. Descriptions of new South African spiders and a solifuge of the genus *Chelypus*. Rec. Albany Mus. Grahamst. 3: 196-203.

*Afrarchaea godfreyi* (Hewitt, 1919)

ARCHAEA GODFREYI sp. nov. (Text figs. 1 and 2.)

This species is founded on a series of specimens, including one adult male, taken at Somerville near Tsolo, C.P., by the Revd. Robt. Godfrey, who kindly presented the material to the Albany Museum.

Apparently, only one other living species has been described, viz., *A. workmanni* Cambr. from Madagascar (see Proc. Zool. Soc. London, 1881, p. 767, Pl. LXVI, fig. 2 a-f; also Simon in Histoire Nat. des Araignées, vol. 1, p. 935, figs. 32, 1005 and 1006). The Somerville species is markedly different from *workmanni* in its stouter habit, the latter species having the chelicerae longer, the head region carried upwards on a narrow neck, and the abdomen conically elevated. In the form of the carapace and abdomen, *godfreyi* has more resemblance to the extinct European species *pougneti* Sim.

The occurrence of this genus in Africa has not been previously recorded, so far as I can ascertain. The living representatives of the family are only known from southern lands, viz., *Archaea* in Madagascar and S. Africa, and *Mecysmauchenius*\* in the southern parts of S. America. The genus *Archaea* was originally based on some fossilised spiders found in amber from the Baltic and thus of Oligocene age.

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\* The records of the Archaeid genera have been somewhat confused owing to the great resemblance between these genera and the males of certain Argiopid spiders. Some time ago, Mr. H. R. Hogg informed me that he had seen specimens of *Mecysmauchenius* from New Zealand, a record of considerable interest. However, it is not included in the recent monograph on 'Araignées de Nouvelle-Zélande' (Ann. Soc. ent. France LXXXVI, p. 317-420) by M. le Comte de Dalmas, and as suggested to me by the author *in lit.*, the record may possibly be based on the male of *Landana lautiuscula* Dalmas, of which only the female is described.

*Carapace.* The form is shown on the accompanying figures. The height at the head region is almost  $1\frac{1}{2}$  times the whole basal length. Surfaces rounded, ornamented with small flattened granular tubercles arranged along more or less definite lines which form an open reticulation in the basal half of the carapace. From each such tubercle there arises a short thick decumbent glistening white hair.

Around the crown of the head, 3 pairs of spines are placed; the posterior one is strongest, arising from a small tubercle: the weakest is that situated immediately posterior to the interval between the two pairs of eyes on each side.

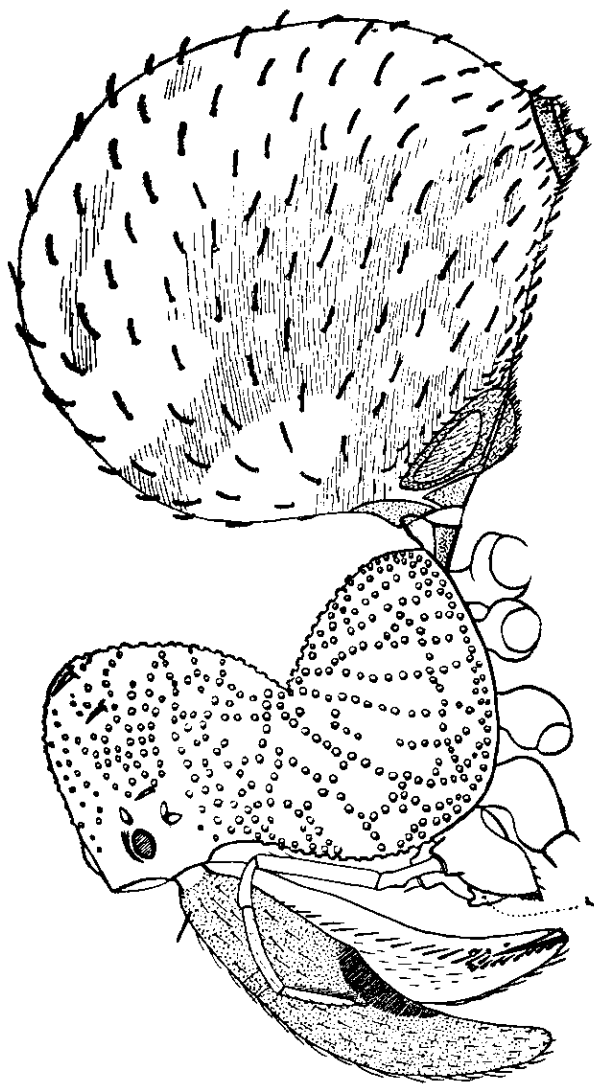
*Eyes.* Anterior medians large and dark, raised somewhat on the mesial side, directed obliquely outwards. The other eyes are all small and pale, the connate laterals slightly raised on an ill-defined tubercle, the postero-medians level with the surface of the head. The interval between the laterals and the anteromedian is equal to, or rather greater than, the long diameter of the latter.

*Labium.* This is subtriangular in outline, slightly constricted along a line near to and parallel with the base: apex distinctly incised. The greater portion of the surface presents a strong spheroidal curvature, and is smooth or nearly so: it bears a number of stiff hairs.

*Sternum.* The surface has a number of strong granular tubercles each carrying a stiff white hair. The middle portion has a convex curvature ending posteriorly in a small pointed projection beset with hairs. Lateral margins strongly sinuated in connection with the insertions of the coxae. Front margin almost straight: hind margin truncate posteriorly.

The *Epimerites* are united into a continuous strip, which along its upper margin is in contact with the inferior edge of the carapace on each side, whilst the lower margin is strongly sinuated in correspondence with the sternum, and thus leaving well defined circular spaces for the insertion of the coxae.

*Rostrum.* Viewed from in front, the rostrum presents a fairly large pale coloured triangular termination between the converging maxillae: ventrally, the apex of this triangle reaches almost to the maxillary scopula: dorsally, are two



Text fig. 1. *Archaea godfreyi* sp. nov. Female in side view. Enlarged.  
r=rostrum.

short chitinous horns which occupy the basal angles of the triangle, these hornlike processes having a thickened integument.

*Pedicle.* The lower portions are much more strongly chitinised than the upper. As the tergite passes posteriorly, it becomes arched upwards and extends back a little beyond the sternite. Immediately behind the sternum, there is a median more or less **A**-shaped piece: this seems to be one of the epimerites: it may be the same as the 'plagula sternalis postica' of Simon, or metasternum as termed by Wm. Sorensen who regards it as the ventral element of the metathorax. The pedicle proper presents two well chitinised side pieces, and between them ventrally is a more or less quadrangular area less strongly chitinised.

*Abdomen.* Subglobular. Integument mostly soft, but in places with chitinous thickenings. Basally it is strengthened all round by a shallow chitinous cup composed of 5 pieces, 1 dorsal, 2 ventral and 2 lateral: the dorsal portion is comparatively rather small, the lateral plates are the largest, the posteroventral plate over-lying the genital region has a strong convex curvature.

At the posterior end, also, is a complete chitinous ring surrounding the spinners and the anal tubercle. In addition, there is a great number of small isolated patches or spots of chitin distributed generally over the surface of the skin. The hairs are nearly all very thick and blunt, rather sparsely distributed, being most numerous ventrally: there are many much finer hairs on the scutes at the base of the abdomen, and the hairs on the skin immediately posterior to the hinder ventral plate are also comparatively slender and numerous. The thick hairs are mostly white and glistening, but some are black: examined under high magnification, the surfaces of the hair are seen to be very finely and closely ciliated. No trace of a median tracheal stigma could be found.

*Spinnerets.* Under a low power of a compound microscope, only 2 pairs are noticeable. The anterior spinners are rather stout but short, composed of 2 segments, the distal one being quite small: the posterior laterals are much smaller, and are

also of 2 segments. Under a moderately high power, a very minute colulus is seen and a pair of rudimentary posteromedian spinners. There is an anal tubercle of moderate size.

*Chelicera.* Each chelicera is capable of extensive movement upwards and outwards, and thus the two may divaricate widely. The carapace provides a large oval space for the reception of the bases of the chelicerae: ventrally, this space includes a triangular sclerite, strongly keeled along the middle, the sharply pointed apex of which projects a little way between the bases of the chelicerae.

The chelicera is strongly constricted into a pedicle at the base, much like those of the coxae of the legs but longer. The surfaces are regularly rounded: in lateral view, the anterior surface forms a more or less continuous curve, but the hinder surface is sinuated in relation with a very shallow excavation on the outer side where the chitin presents a series of close-set parallel ridges which may be part of a stridulatory apparatus. Towards its distal end, the chelicera is bent backwards. Away from the parallel ridges, the surface of the chelicera is finely granulated throughout, and carries numerous scattered setae: there is one short, but strong, forwardly projecting bristle near the base anteriorly. Mesially, there extends from the base of each chelicera up to the point reached by the tip of the closed fang, a series of stiff bristles gradually increasing in strength and becoming strong spines distally. On the anterior side of the fang groove is another series of spines, about 7 or 8, and where the two series approach there are 5 or 6 other spines, all short and somewhat irregularly arranged. On the posterior side of the fang groove there is no such series of spines, but two widely separated teeth occur, the proximal one being blunt and low though broad at the base. None of the spines is raised on a tubercle.

The fang is short, well curved, fairly stout: the lower margin is finely serrulated.

*Pedipalp.* The maxillae closely surround the labium, extending in advance thereof for a distance nearly equal to half the length of the labium. Serrula well developed. Dorsally, a short broad subcylindrical process arises from near

the base and bears the palp. The palp is slender and moderately long. Trochanter elongated, with a small rounded tubercle about the middle of its length anteriorly. Femur the longest segment. Tarsus a little shorter than the tibia, with well developed mucous claw. A few setae occur on each segment, the tarsus being rather densely covered with setae many of which are very finely ciliated and some of the ventral ones are more or less flattened and sword shaped. The tibia bears two long sensory hairs.

*Legs.* First longest, fourth only a trifle shorter, third shortest. Trochanters all pedicled, first considerably largest. The other segments are all more or less cylindrical, except the trochanters which are much shorter than that of the palp.

Femora all elongated, exceeding any of the other segments, slender, first only a little stouter than the others. Femur I constricted at the base posteriorly. The tibiae are longer than the more distal segments, tibia IV slightly exceeding the combined tarsus and metatarsus IV, but tibia I subequal to combined tarsus and metatarsus I. Patella I nearly twice as long as patella IV. Metatarsi longer than the tarsi. Legs without spines of any kind. Metatarsus III in its distal half inferiorly has a tuft of stiff setae, each with finely ciliate surfaces, and Metatarsus IV has a smaller tuft distally. On all the segments stiff setae occur arranged along longitudinal lines, but the setae are nowhere densely disposed. In the basal segments, these setae are simple or very minutely serrulate, but on the tarsus and metatarsus they become very finely ciliate, usually along one edge only. Several long outstanding sensory hairs occur on all the tibiae and metatarsi: usually, there are 2 or 3 on the tibia, and 1 at the distal end of the metatarsus. Tarsus with onychium, paired toothed claws, and fairly long unpaired claw: the latter has a sharply pointed basilar tooth, and apically may be finely attenuated. The surfaces of the legs and palps, more especially of the femora, are very finely roughened: under moderately high magnification, this has the appearance of minute scales, triangular or polygonal and slightly imbricating: on femur I the surface is more distinctly granulated.

*Male palp.* Except for a short inconspicuous chitinous hook-like process at the apex of the tibia on its inner side, there are no appendages to the segments of the palp: the trochanter has a faint anterior protuberance as in female. The tarsus has no external branch. The bulbal organ is large, a conspicuous portion, which I suppose is the bulb itself, taking the form of a chitinous capsule which is very broad basally but distally is folded into a more or less bell-shaped termination with widely open mouth.

The tarsus is hairy as usual, all the hairs being distinctly ciliated or serrulate along one edge.

The other male characters agree with those of the female in most respects, but the chelicera of the male presents a characteristic triangular projection on the anterior side mesially, near to the tip of the infolded fang.

*Colour.* Carapace and chelicerae reddish brown, with whitish setae: legs and palps pale olive brown: the abdomen has a pale yellow ground colour with black markings thereon: the black markings originate as a series of cross stripes which on the sides of the body fuse more or less completely.

*Measurements.* Total length 3 mm., length of chelicera 1.55, height of carapace 1.6, length of femur of first leg 1.6, greatest breadth of same, at base, .24, least breadth of same, near apex, .13, length of patella of first leg .5, of tibia 1.3, of metatarsus .85, of tarsus together with claw .56.

As reported to me by Mr. Godfrey, this is a very sluggish spider. I have recently found a single specimen under a stone in the damp bush above Fern Kloof, Grahamstown. It was taken along with such creatures as the jumping crustacean *Talitriator africanus* Bate, the molluscs *Apera serangula* Wats. and *Jaminia ponsonbyana* Morel, the spider *Microstigma geophilum mihi*, and the peripatus *Opisthopatus cinctipes* Purc.: that is to say, it belongs to the association characteristic of our forests.\* What seems to be the cocoon of this spider is a loose flimsy structure containing only about six eggs.

\* Elsewhere, the above mentioned creatures are not so restricted to forests, although in this immediate neighbourhood they occur only in damp primaeval bush or forest. In the Western Province,

In addition to the remarkable features of structure emphasized by Simon, other peculiarities are exhibited in the species now described. The 'stridulatory' area of the chelicera is not recorded in any other member of the family: this somewhat resembles the stridulatory organ of the genus *Lephtyphantes*, and apparently such an organ is general amongst the Linyphiine group of the Argyopidae. If the area actually subserves a stridulatory function, it seems probable that the other essential portion of the apparatus must be the roughened surface of the femur of the first leg: although no striking modifications are apparent on this segment, its surface is nevertheless more strongly granulated than that of any succeeding femur.

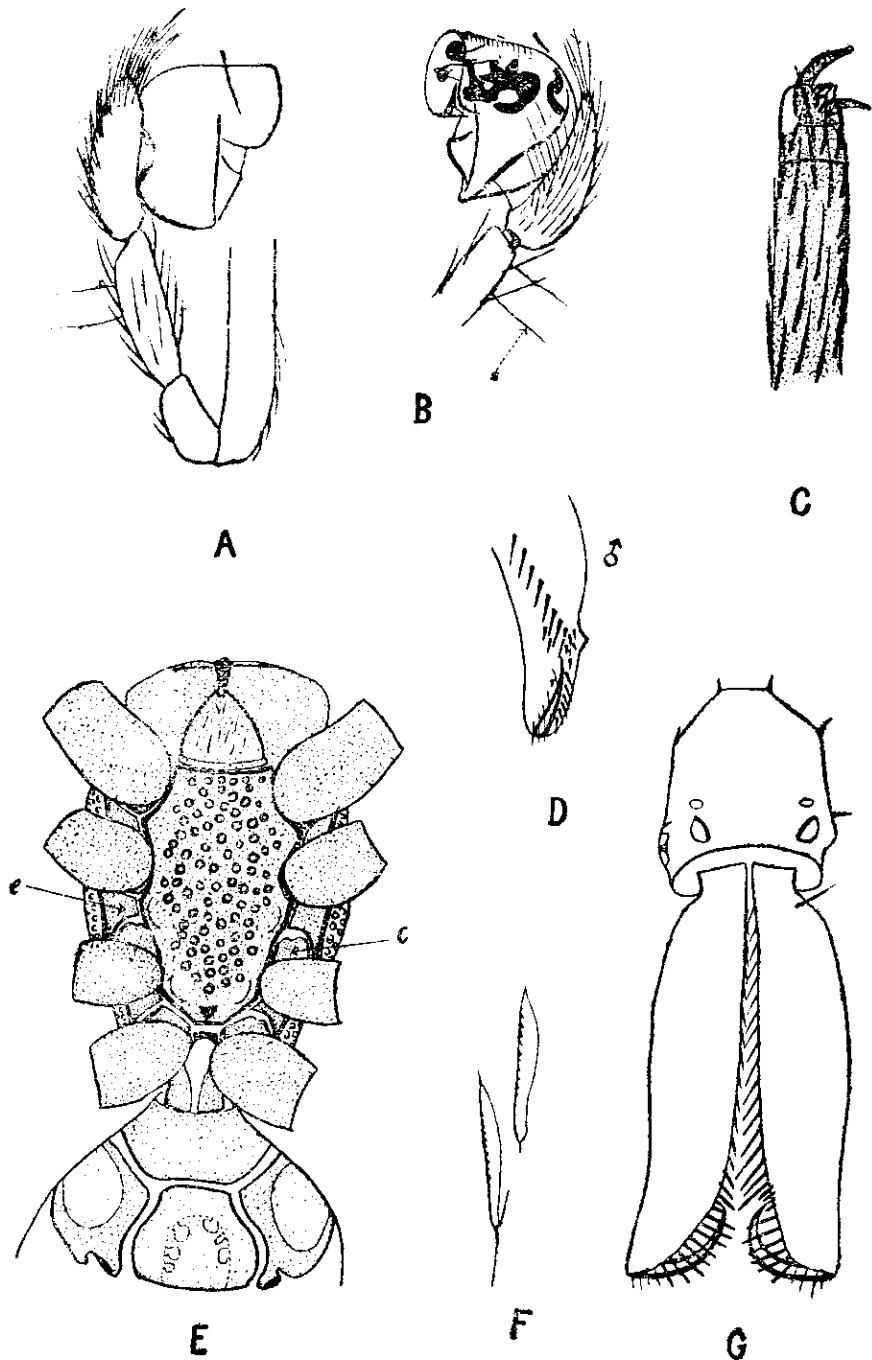
Another feature, most unusual amongst spiders, is the elongated trochanter of the palp. No allusion to this character is made either by O. P. Cambridge or E. Simon: the figure given by the latter author to illustrate the structure of *A. pogneti*, shows no trace of a trochanter, although it was evidently intended to depict the essential features of the palp. In reference to that figure, it may also be pointed out that the horizontal position of the chelicerae is not peculiar to the species as the author seems to suggest in his account.

M. Simon found in *Mecysmauchenius* some indication of the median tracheal stigma but it seems to be absent in *Archaea godfreyi*.

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according to Mr. K. H. Barnard, *Talitriator* is by no means a forest dweller, for the damp places it frequents have long since lost their forest covering, if such ever existed there. At Alicedale too, according to Mr. Cruden, the same creature lives far from forest, and *Opisthopatus* even extends into more or less open country, being found under stones in damp places.





Text fig. 2. *Archaea godfreyi* sp. nov.

A and B Palp of adult male. C Distal portion of third leg of female. D Distal portion of chelicera of adult male. E Ventral view of fore part of body of female. F Gladiate hairs on tarsus of female palp. G Front view of chelicerae, with head of female, the latter being seen obliquely.

s=sensory hairs. c=coxa. e=epimerite.