Presumably this abnormal duplication of the epigyne and associated structures was caused by a subdivision of that abdominal segment in the embryo, but it is remarkable that the spider survived to maturity and developed two almost normal sets of genitalia.

Two examples of duplication of the epigyne were described by Kaston (1963) in *Amaurobius canada* Chamberlin and Ivie and *Phidippus audax* (Hentz). In the former, the second epigyne was at the rear of the abdomen just in front of the cribellum, and in the latter it was in the middle of the abdomen and was followed by four supernumerary spinnerets. In the specimen of *W. alticeps* described here, the two epigynes are closer together and the second one is less abnormal.

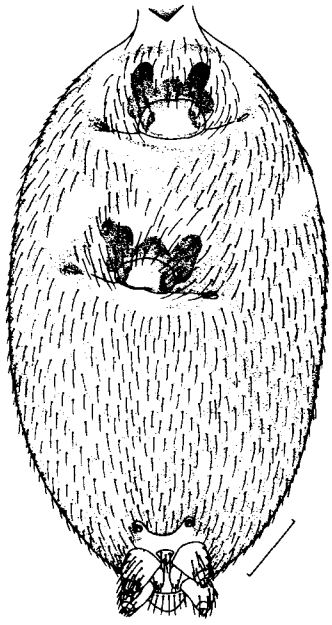

Fig. 1: ***Walckenaera alticeps*** (Denis). Female with two epigynes, abdomen (ventral view). The hairs are included in order to illustrate their distribution, but are not intended to show their precise numbers. Scale line = 0.2 mm.

Since this is the only abnormality of this type which I have seen out of about half a million spiders which I have examined during the last 20 years, its occurrence, or at least the survival of such specimens to maturity, must be extremely rare.

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The biggest spider

by Paul A. Selden

"The past is a foreign country, they do things differently there" wrote L. P. Hartley (1953). For animal size, the past is like Texas: everything seems bigger there. The largest land animal ever (in terms of mass) was *Brachiosaurus*, and the largest land mammal *Baluchitherium*, both extinct (McWhirter, 1982). Amongst the arthropods, the largest ever was the extinct, aquatic eurypterid *Pterygotus*, which attained a body length of 2 m (Clarke and Ruedemann, 1912). Another extinct chelicerate group, the cyrtoctenids, also apparently reached great size, possibly 130 cm long (Størmer and Waterston, 1968). The largest arachnids recorded are scorpions: *Brontoscorpio* from the upper Silurian of Worcestershire (Kjellesvig-Waering, 1972) and *Praearcturus* from the lower Devonian of the Welsh Borderland both may have reached 1 m in length. However, it is probable that these giants were aquatic, or at least amphibious (Rolfe, 1980). The largest spider recorded in McWhirter (1982) is the living *Theraphosa*, with a body length of 8.9 cm and a maximum leg span of 25 cm. On past experience, might we expect to find an extinct spider which greatly exceeds this size?

In 1980, Mario Hünicken of the University of Cordoba, Argentina, published a paper on a giant fossil spider, *Megarachne servinei*, from the Upper Carboniferous of Argentina. The length of this beast, from chelicerae to posterior edge of the abdomen is 33.9 cm, with a probable leg span of 50 cm. It is not only large, but also looks quite formidable, being stout and obviously heavy (Fig. 1). *Megarachne* has been placed in a new family Megarachnidae in the mygalomorphs (on the basis of its paraxial chelicerae and non-segmented abdomen). No mygalomorph had previously been recorded before the Oligocene (Petrunkevitch, 1955), although *Eoatypus* from the Eocene of the Isle of Wight may be one. Liphistiomorphs on the other hand, which are supposedly a more primitive group of spiders and have a segmented abdomen, are well represented in the Carboniferous and maybe even in the Devonian (Hirst, 1923). (It should be noted here that Lehtinen (1967) and Platnick and Gertsch (1976) considered that the preservation of Palaeozoic spiders is too poor to allow correct classification; their abdomens are, however, clearly segmented).

Other interesting features of *Megarachne* are the large, spatulate chelicerae, possibly used for digging, the single dorsal shield on the abdomen, which is ornamented with radiating longitudinal ridges, and the expanded posterior part of the carapace which covers the anterior part of the abdomen and is produced into postero-lateral lobes. The palaeoecology of *Megarachne* is not discussed by Hünicken,

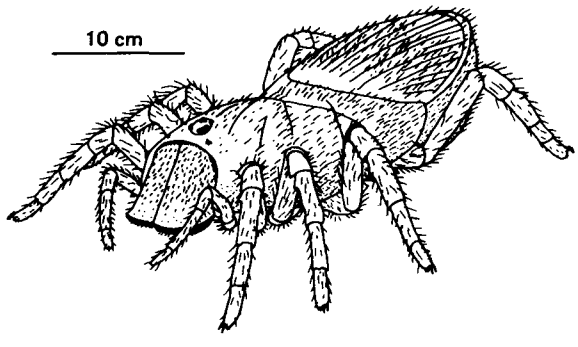

Fig. 1: Reconstruction of ***Megarachne servinei*** (from a drawing by A. Cocucci in Hünicken, 1980).

but the animal would appear to have lived in a burrow. Further interest is provided by the fact that *Megarachne* together with *Gondwanarachne*, a new trigonotarbid from the same locality, are the first arachnids known from the Palaeozoic continent of Gondwanaland which had made contact with Laurasia (the continent in which N. America and Europe lay) just before this time (Rolfe, 1982).

Exciting though the find of a giant fossil spider is, palaeoarachnologists can probably learn more about arachnid evolution from the study of smaller, more generalised forms. The oldest land faunas known, the Rhynie Chert of Aberdeenshire (Hirst, 1923), the Gilboa fauna of New York (Rolfe, 1982) and the Alken fauna of Germany (Størmer, 1970), all contain numerous small arachnids, and it is amongst these that we are most likely to obtain clues to help unravel the early evolution of terrestrial arachnids.

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(Secretary's Note: While the above was in press a short article with 3 text figures referring to this spider entitled ***A Giant Fossil Spider*** appeared in the ***Newsletter of the A.A.Soc.*** No. 24. June 1982)

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COMMENSALISM

An empidid fly that feeds on spider's prey

by A. Russell-Smith

In August 1978 a massive emergence of aphids caused considerable concern in eastern England to the extent that it was widely reported in the press and on television. At my mother's home in Walpole, Suffolk a small colony of *Araneus umbraticus* lives under the pantiled eaves of some weatherboard sheds where they spin their webs between the overhanging tiles and the walls of the sheds. During this period the webs were liberally strewn with trapped aphids and I noticed that each web had perhaps half a dozen small black flies hovering around it. From time to time a fly would delicately alight on one of the aphids and apparently pierce it with it's short, pointed mouthparts. Several specimens of the fly were collected at the time but apart from identifying it as a member of the family Empididae no further investigations were made. More recently, in June 1980, the flies were again seen hovering around the webs and alighting on aphids and small nematoceran diptera to feed. Further specimens were collected and identified in Collin (1960) as *Microphorus crassipes* Macq.

Collin, in his book, refers to a paper by Laurence (1949) on the habit of this species of feeding on the prey of web-building spiders. Laurence reported observing this species feeding on insects trapped in the webs of *Meta merianae* and an unidentified *Araneus* sp. at Harington, Beds. in July 1948. In the *Meta* webs he found 10 female *Microphorus* feeding together on the carcass of the tipulid fly *Nephrotoma flavescens* L. while in the *Araneus* webs they were seen to feed on an aphid, a psocid, a small parasitic hymenopteran and small nematoceran diptera. He also found 7 females and 1 male of *Microphorus* itself trapped in the webs.

While there are clearly risks attending this method of feeding, the advantage to the fly would seem to be the saving in energy as compared with active searching and capture of prey in flight. Viewed in this light it seems slightly strange that only one species (out of 350 or so known in Britain) has evolved the habit of robbing spider's webs. According to Collin *Microphorus crassipes* is widespread and frequent in Britain and it would be interesting to know whether other members of the society have observed flies feeding in orb-webs. I would be very pleased to receive specimens of any flies seen doing this especially since two other species of *Microphorus* are recorded from Britain but nothing appears to be known of their feeding habits.

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