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A NEW FAMILY OF CHALCIDOIDEA (INSECTA: HYMENOPTERA)

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(with 4 text-figures)

EURYISCHIDAE fam.n.

The present author proposes a new family Euryischidae based on the genus *Euryischia* Riley. This genus was erected by Riley (1889) and retained in the subfamily Elasminae of the family Chalcididae. Ashmead (1900) erected the genus *Myiocnema* and placed it in the subfamily Aphelininae. The same author (1904) placed *Euryischia* in the family Elasmidae.

Howard (1907), Mercet (1912) and Girault (1915) accepted Ashmead (1900) by retaining the genus *Myiocnema* in Aphelininae.

Girault (1912) considers doubtful the inclusion of the genus *Euryischia* in the family Elasmidae. Nevertheless, he accepted Ashmead's placing of this genus in Elasmidae and said "neither the insect nor its original description is accessible to me" He (1913) considers *Euryischia* to be undoubtedly an Encyrtid and credited the genus to Howard instead of Riley. The same author (1914) erected the genus *Euryischomyia* and placed it in Elasmidae.

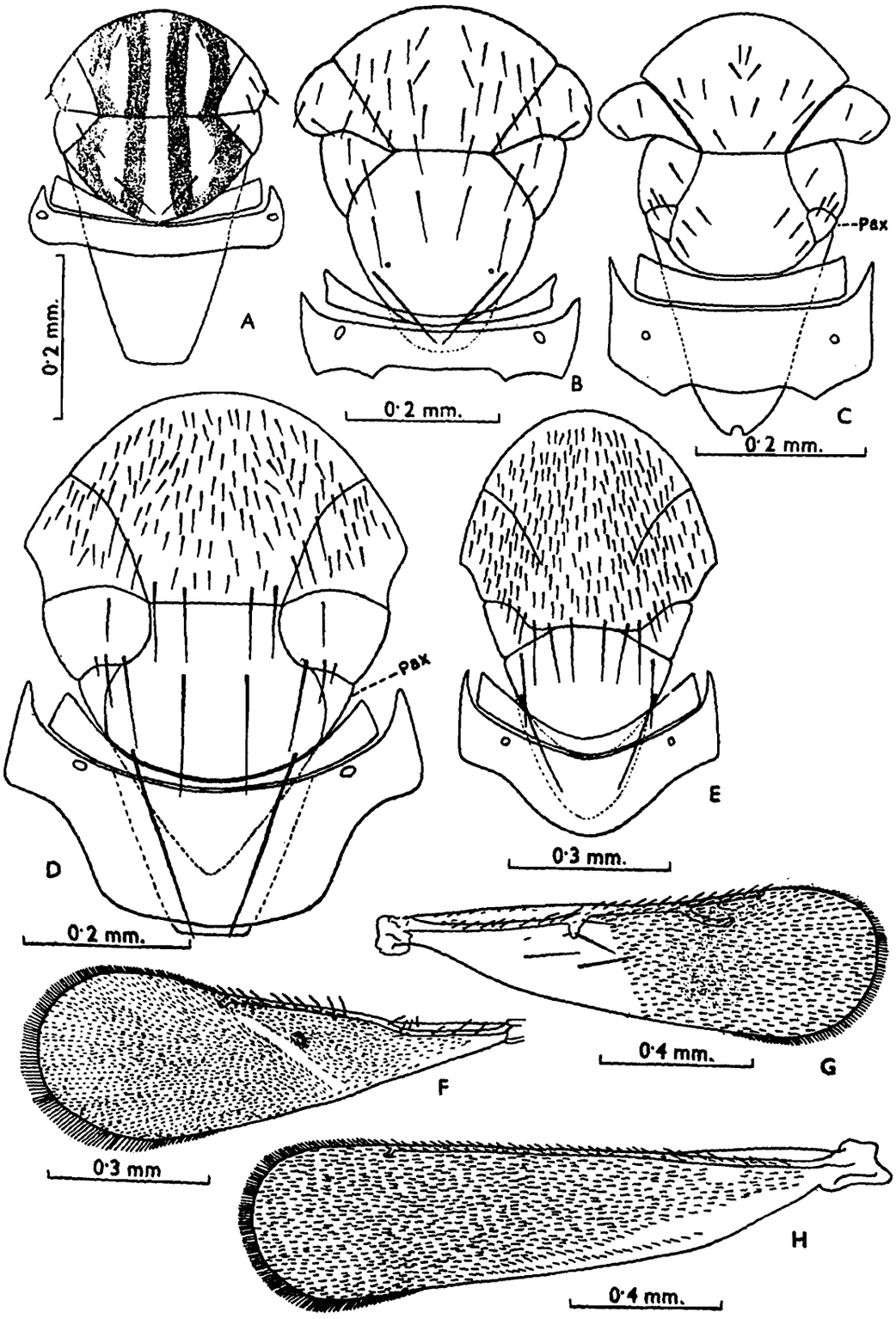
Girault (1916) after examination of the typegenus of *Myiocnema* declared it to be a synonym of *Euryischia*. He credited the genus *Euryischia* to Koebele.

Smith and Compere (1928) published a letter written by A. B. Gahan, in which Gahan said "*Euryischia*, however, is surely elasmid and *Myiocnema* is just as surely closely related to *Euryischia*, although the latter apparently forms a connecting link between the Elasmidae and the aphelinines"

Compere (1947) suggested that "*Myiocnema*, as well as *Euryischia* Riley, are out of place in the ELASMIDAE, since both of these genera resemble *Aphelinus* Dalman much more closely than they do with *Elasmus* Westwood"

Ghesquière (1955) placed *Euryischia* Riley, *Myiocnema* Ashmead, *Eriaporus* Waterston and *Eunotiscus* Compere in his newly proposed subfamily Eriaporinae of Aphelinidae. Ferrière (1965), Burks (1965) and Riek (1966) accepted Compere (1947) and Ghesquière (1955) in retaining these genera in the family Aphelinidae.

Keeping in view the diagnostic keys to the families of Chalcidoidea proposed by Mani (1938), Nikol'skaya (1952), Brues et al (1954) and Peck et al (1964), the genus *Euryischia* runs near the family Elasmidae. However, it differs from this family in having (*i*) 5-jointed tarsi, (*ii*) Post axilla, (*iii*) Complete parapsidal furrows, (*iv*) Fore wings with well



Text-fig. 1.—(A-E) Thoracic dorsum of (A) *Syediella* Shafee; (B) *Eriaporus* Waterston; (C) *Euryischomyia* Girault; (D) *Euryischia* Riley; (E) *Elasmus* Westwood; (F-H) Fore wings of (F) *Syediella* Shafee; (G) *Euryischia* Riley (H) *Elasmus* Westwood *Pax, Post axilla.*

developed costal cell, submarginal, marginal, postmarginal and stigmal veins, (*v*) Fore tibiae with curved spur, (*vi*) Tridentate mandibles and (*vii*) Male antennae unbranched.

In Vierek's (1916) and Essig's (1954) keys to the families of Chalcidoidea, the genus *Euryischia* runs near the family Aphelinidae. However, it differs from this family having (*i*) Post axilla, (*ii*) hind coxae much compressed and disc-like, (*iii*) hind tibiae with two long and thick spurs at apex and with a row of thick setae on the outer margin, (*iv*) fore wings with well developed costal cell, submarginal, marginal, postmarginal and stigmal veins and (*v*) much broad propodeum.

In the Comstock's (1954), Imms (1957) and Borror et al (1963) keys to the families of Chalcidoidea, the genus *Euryischia* neither falls in the family Elasmidae nor in Aphelinidae owing to some special characters for which a new family Euryischidae is proposed and placed between the families Aphelinidae and Elasmidae.

The genera *Myiocnema* Ashmead and *Euryischomyia* Girault are placed in the new family Euryischidae for having (*i*) Coarse setae on the body, (*ii*) complete parapsidal furrows, (*iii*) Post axilla, (*iv*) broad propodeum, (*v*) fore wings with well developed costal cell, submarginal, marginal, postmarginal and stigmal veins, (*vi*) hind coxae and femora enlarged, (*vii*) hind tibiae with thick setae on outer margin and (*viii*) antennae 8-segmented, excluding the ring segments.

The new family Euryischidae is characterised as follows :

Body black and covered with coarse setae; mandibles (Text-figs. 3B & 4C) tridentate; antennae (Text-figs. 3D & 4E) 8-segmented, excluding the ring segments; thorax with complete parapsidal furrows; post axilla (Text-figs. 1C, *Pax* & 1D, *Pax*) present; propodeum broad; fore wings (Text-fig. 1G & 4A) with well developed costal cell, submarginal, marginal, postmarginal and stigmal veins; fore tibiae with curved spur; middle tibiae (Text-fig. 3H) with long spur; hind coxae enlarged or much compressed and disc-like; hind femora and tibiae usually compressed; hind tibiae usually with two long spurs and with a row of thick setae on outer margin (Text-figs. 2C & 2D); all tarsi 5-jointed; abdomen longer than thorax, flat above and keeled below; ovipositor slightly exserted.

Type-genus, *Euryischia* Riley

Key to subfamilies and genera of EURYISCHIDAE fam. n. *based on females.*

1. Hind coxae normal, not compressed and disc-like; hind femora and tibiae normal; propodeum uniformly broad ; hind tibiae with 1-2 short and weak spurs. .. .. .MYIOCNEMINAE sub fam. n.

—Hind coxae much compressed and disc-like; hind femora and tibiae compressed; propodeum much dilated in middle; hind tibiae with two long and thick spurs. EURYISCHINAE subfam. n.. .. ..*Euryischia* Riley, 1889

—Mandibles with two teeth and a truncation; maxillary and labial palps 3 and 2-segmented respectively; antennae with three ring segments; club shorter than funicle; fore wings with a large discoidal infuscated patch beneath the marginal vein; apex of submarginal vein much dilated bearing two long setae; a long seta beneath the submarginal vein; hind tibiae with two spurs. ... .*Myiocnema* Ashmead, 1900

—Mandibles with one tooth and a truncation; maxillary and labial palps each 2-segmented; antennae with two ring segments; club longer than funicle; fore wings with a broad transverse infuscated band beneath the marginal and postmarginal veins; apex of submarginal vein not much dilated, bearing two short setae; hind tibiae with one spur. .*Euryischomyia* Girault, 1914

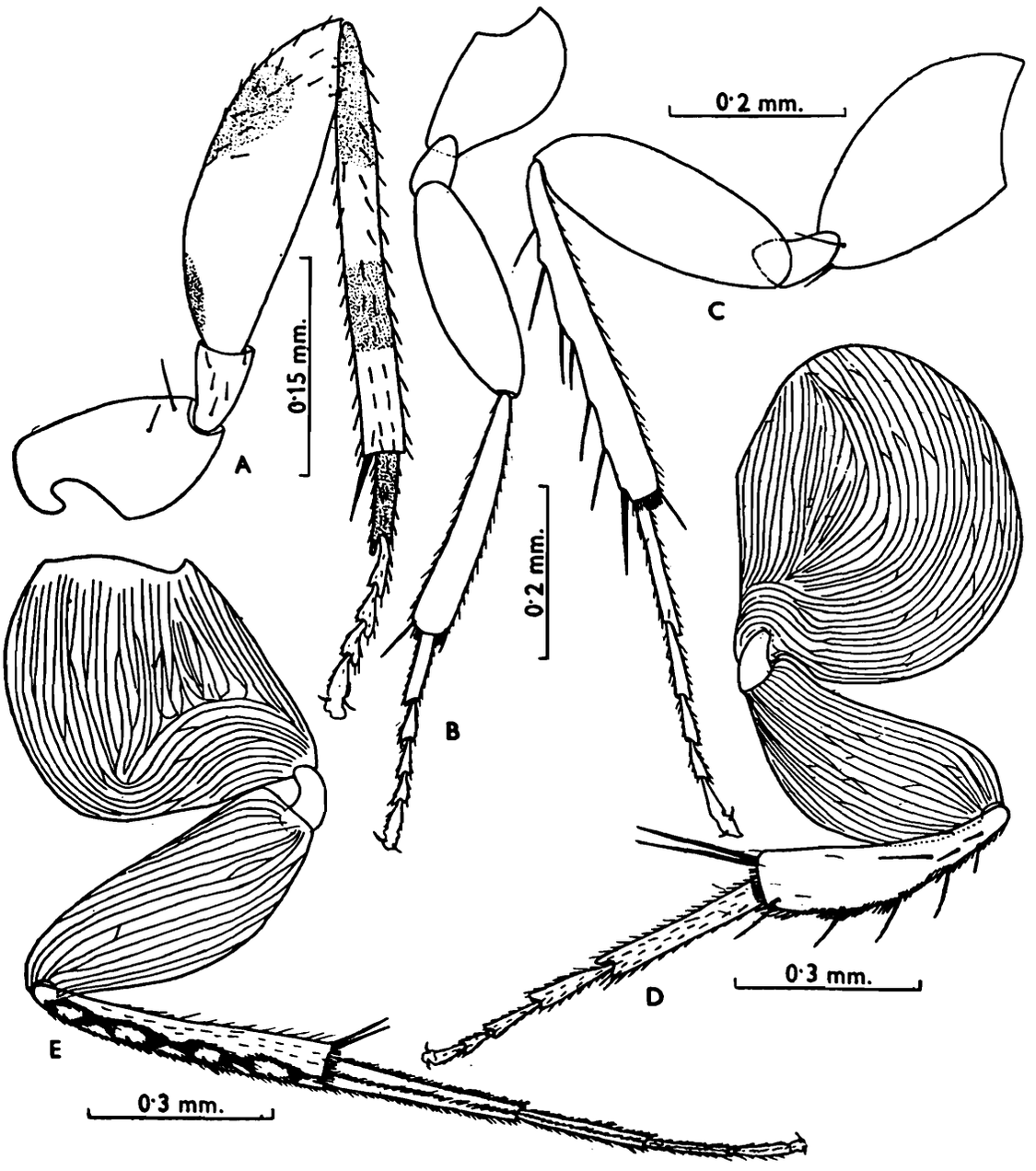
EURYISCHINAE subfam.n.

Type-genus, *Euryischia* Riley, 1889

The genus *Euryischia* is characterised as follows:

Female

Body black, covered with coarse setae; head (Text-fig. 3A) wider than long in facial view; mandibles (Text-fig. 3B) with two teeth and a truncation; maxillary and labial palps (Text-fig. 3C) 3 and 2-segmented respectively; antennae (Text-fig. 3D) 8-segmented, excluding the ring segment; pronotum (Text-fig. 3E) with posterior margin straight; mesoscutum with well developed parapsidal furrows; axillae widely separated; post axillae (Text-fig. 1D, *Pax*) present; scutellum with four long setae; postscutellum well developed; propodeum much dilated in middle; fore wings (Text-fig. 1G) with well developed costal cell, submarginal, marginal, postmarginal and stigmal veins; fore tibiae with curved spur; middle tibial spur (Text-fig. 3H) about as long



Text-fig. 2(A-E).—Hind legs of (A) *Syediella* Shafee; (B) *Eriaporus* Waterston; (C) *Euryischomyia* Girault; (D) *Euryischia* Riley; (E) *Elasmus* Westwood.

as basitarsus; hind coxae much compressed and disc-like; hind femora and tibiae compressed; hind tibiae with two long and thick spurs and also with a row of thick setae on outer margin (Text-fig. 2D); all tarsi 5-jointed; abdomen slightly longer than thorax, flat above and keeled below; ovipositor slightly exserted; middle of anterior margin of subgenital plate (Text-fig. 3I) cone-like and connected with the central notch of posterior margin by a narrow longitudinal groove; third valvulae (Text-fig. 3J) distinct.

Euryischia indica Mani and Kurian

(Text-figs. 1D, G; 2D; 3A-K)

Female

Head (Text-fig. 3A).—Black, with coarse setae, wider than long in facial view; frontovertex wider than long; ocelli arranged in obtuse angled triangle, basal ocellus removed by slightly more than its diameter from eye rim and less than its diameter from occipital margin; malar space longer than transverse diameter of eyes; antennae inserted below lower level of eyes; mandibles (Text-fig. 3B) with two teeth and a truncation; maxillary and labial palps (Text-fig. 3C) 3 and 2-segmented respectively.

Antennae (Text-fig. 3D).—Brownish; scape about three times longer than wide (0.12:0.04 mm); pedicel one and a half times longer than wide (0.06:0.04mm); a distinct ring segment present; first funicle segment slightly longer than wide; second and third funicle segments slightly wider than long; club about two times as long as wide, distinctly shorter than funicle.

Thorax (Text-fig. 1D).—Black, with coarse setae; pronotum (Text-fig. 3E) with posterior margin straight, bearing 13 pairs of setae; scutum and parapside profusely setose; scutellum with two pairs of long setae; postscutellum well developed.

Fore wings (Text-fig. 1G).—Hyaline, except a small infuscated patch below the junction of marginal, postmarginal and stigmal veins; basal one third of wing naked, except two long setae; costal cell broad; apex of submarginal vein dilated and bears two long setae; marginal vein shorter than submarginal and longer than postmarginal and stigmal veins separately; postmarginal vein distinctly longer than stigmal vein (Text-fig. 3F); marginal fringe short.

Hind wings.—Hyaline, about four and a half times longer than wide; length of marginal fringe equal to one-sixth of wing width.

Fore legs (Text-fig. 3G).—Brownish-black except tibial spur and basal three tarsal segments which are yellowish brown; tibial spur slightly curved.

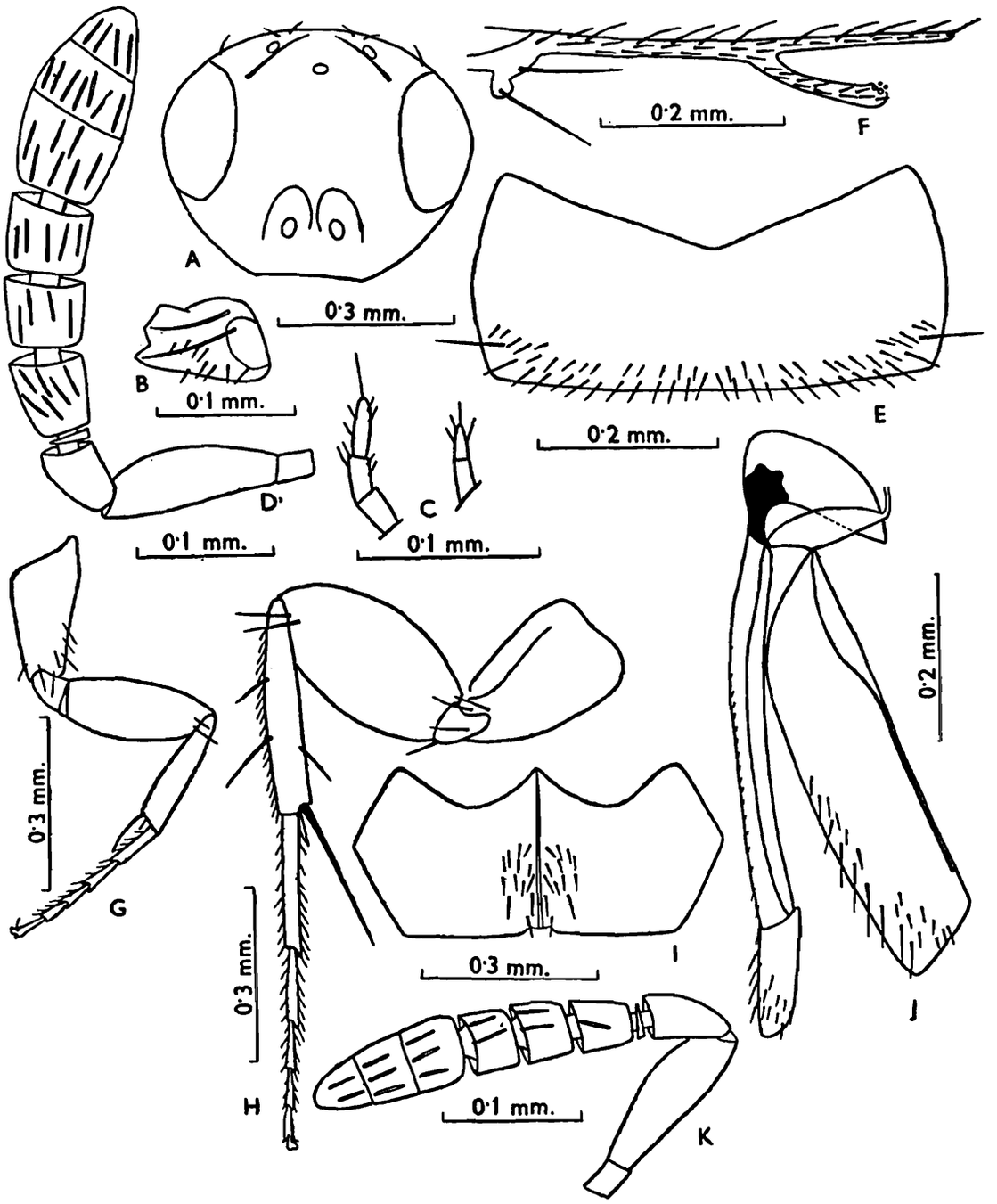
Middle legs (Text-fig. 3H).—Brownish, except tibial spur which is white; tibial spur about as long as basitarsus.

Hind legs (Text-fig. 2D).—Brownish black, except tibial spurs which are white; coxae much compressed and disc-like; femora and tibiae compressed; tibiae with two long and thick spurs and also with a row of thick setae on outer margin; basitarsus as long as following three tarsal segments combined.

Abdomen.—Black, shining, slightly longer than thorax, flat above and keeled below; ovipositor slightly exserted.

Female length: 1.77 mm.

Male. Resembles female.



Text-fig. 3(A-K).—*Euryischia indica* Mani & Kurian (A) Head facial view; (B) Mandible; (C) Maxillary and labial palps; (D) Antenna; (E) Pronotum; (F) Fore wing venation; (G) Fore leg; (H) Middle leg; (I) Subgenital plate; (J) Genitalia; (K) Male antenna.

Material examined.—20 ♀, 10 ♂, INDIA: Bihar, Darbhanga, Pusa, ex *Icerya pilosa* Green on *Saccharum officinarum* Linn., 8-11-1969 (S. Adam Shafee); 20 ♀, 5 ♂, INDIA: Andhra, Kurnool, Giddalur, ex *Icerya seychellarum* (Westwood) on *Cassia* sp., 20-2-1971 (S. Adam Shafee). Material in Zoological Museum, Aligarh Muslim University, Aligarh, India.

MYIOCNEMINAE subfam. n.

Type-genus, *Myiocnema* Ashmead

Ashmead, 1900, *Canad. Ent.* **32:** 349.

Smith & Compere, 1928, *Univ. Calif. Publ. Ent.* **4:** 301.

Euryischomyia Girault

The genus is characterised as follows:

Female (Text-fig. 4A)

Body black, covered with coarse setae; head (Text-fig. 4B) wider than long in facial view; mandibles (Text-fig. 4C) with one acute tooth and a truncation; maxillary and labial palps (Text-fig. 4D) each 2-segmented; antennae (Text-fig. 4E) 8-segmented, excluding two ring segments; pronotum (Text-fig. 4F) with posterior margin straight; mesoscutum with well developed parapsidal furrows; axillae widely separated; post axillae (Text-fig. 1C, *Pax*) present; propodeum uniformly broad; fore wings with basal one-third naked and with a broad transverse infuscated band beneath the marginal and postmarginal veins; submarginal vein long, slightly dilated at apex; marginal, postmarginal and stigmal veins well developed; fore tibial spur curved; hind coxae and femora enlarged; hind tibiae with single spur and also with a row of thick setae on outer margin (Text-fig. 2C); abdomen about as long as head and thorax combined; ovipositor slightly exserted: subgenital plate (Text-fig. 4G) with broadly rounded posterior margin; third valvulae (Text-fig. 4H) distinct, movably articulated with second valvifers. The genus is recorded for the first time from India.

Euryischomyia alami* sp.n.

(Text-figs. 4A-H)

This species is closely related to *E. washingtoni* Girault, from which it can be separated in having first funicle segment much short and distinctly wider than long; basal one-third of fore wing naked; legs except tibiae and tarsi brownish-black.

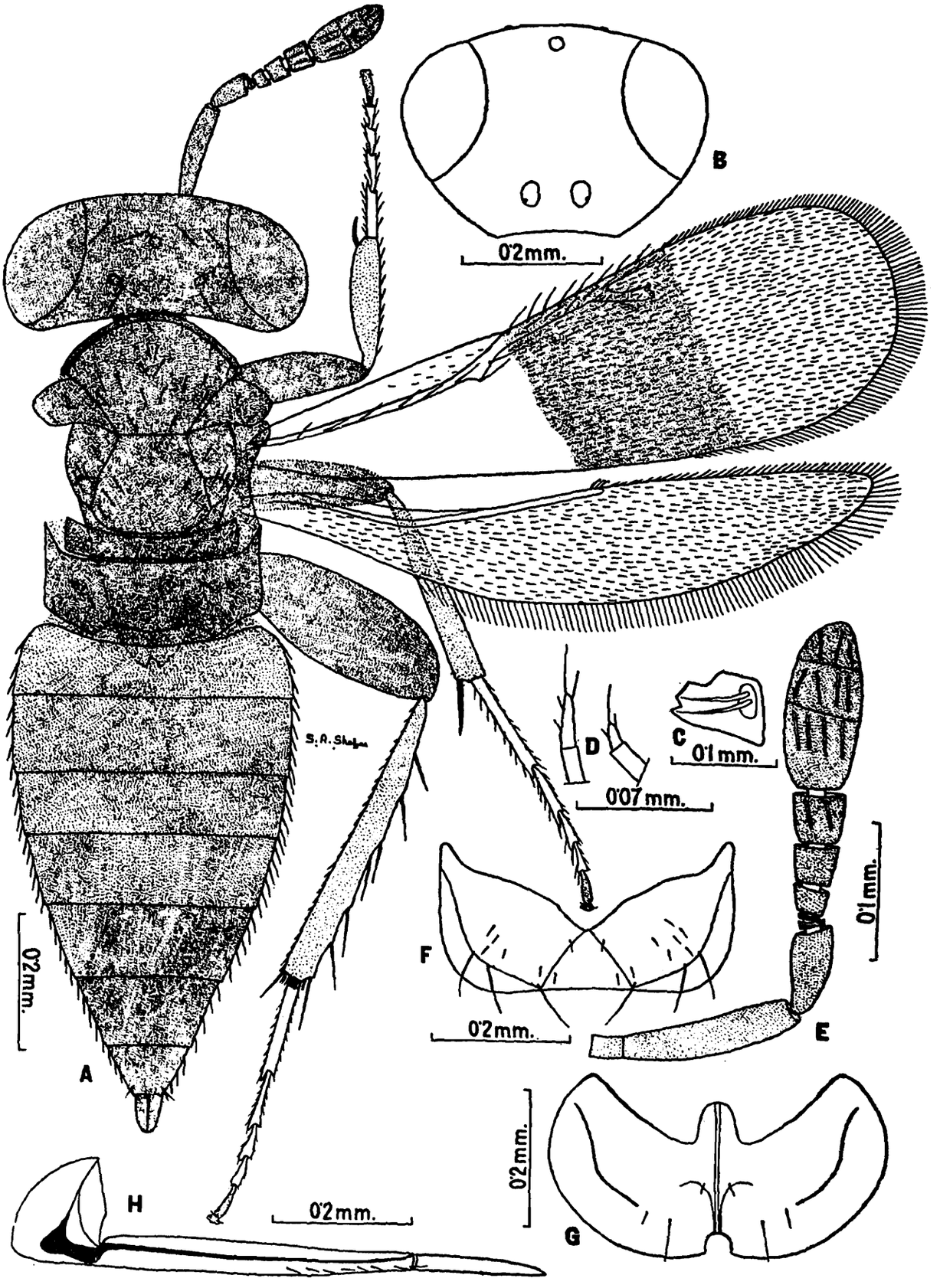
Female (Text-fig. 4A)

Head (Text-fig. 4B).—Black, with coarse setae, wider than long in facial view; frontovertex slightly wider than long; ocelli arranged in obtuse angled triangle, basal ocellus removed 2 times its diameter from eye rim, still more removed from occipital margin; mandibles (Text-fig. 4C) with one acute tooth and a broad truncation; maxillary and labial palps (Text-fig. 4D) each 2-segmented.

Antennae (Text-fig. 4E).—Dark-brown; scape cylindrical about four a half times longer than wide; pedicel slightly more than two times and longer than, as long as ring and following two funicle segments combined; two ring segments present; first funicle segment much

* Named after Prof. S. Mashhood Alam.

short and distinctly wider than long (0.025:0.019 mm); second and third funicle segments about as long as wide; club slightly more than two times longer than wide, distinctly longer than funicle.



Text-fig. 4(A-H).—*Euryischomyia alami* sp.n. (A) Entire female; (B) Head facial view; (C) Mandible; (D) Maxillary and labial palps; (E) Antenna; (F) Pronotum; (G) Subgenital plate; (H) Genitalia.

Thorax.—Black; pronotum (Text-fig. 4F) with posterior margin straight, bearing 6 long setae; mesoscutum with 7 pairs of setae; each axilla and parapside with 4 and 2 setae respectively; post axilla naked; scutellum with 3 pairs of setae; propodeum uniformly much broad.

Fore wings.—Slightly less than three times longer than wide; basal one-third naked; broad transverse infuscated band present beneath the marginal and postmarginal veins; costal cell broad; submarginal vein long and slightly dilated at apex; marginal vein slightly less than half of submarginal and distinctly longer than postmarginal and stigmal veins separately; marginal fringe spaced by a distance equal to one-sixth their length.

Hind wings.—Hyaline, about five times longer than wide; length of marginal fringe equal to one-third of wing width and are spaced by a distance equal to one-fifth their length.

Legs.—Coxae, trochanters, femur and pretarsus dark-brown; tibiae and basal four tarsal segments yellowish-brown; hind coxae and femora enlarged; hind tibiae with single spur and also with a row of thick setae on outer margin.

Abdomen.—Black with slight metallic reflections and about as long as head and thorax combined; ovipositor slightly exserted.

Female length: 1.48 mm.

Holotype ♀, 1 ♀ paratype, INDIA: Mysore, Bangalore, Channapatna, ex *Nipaecoccus vastator* (Maskell) on *Mangifera indica* Linn., 2-7-1968 (*S. Adam Shafee*). Material in Zoological Museum, Aligarh Muslim University, Aligarh, India.

POST AXILLA

Smith and Compere (1928) have shown the presence of a triangular sclerite lying posterior to and contiguous with the axilla in the genus *Myiocnema* Ashmead. They did not propose any name for this sclerite. The present writer has observed a similar sclerite in the genera *Euryischia* Riley (Text-fig. 1D, *Pax*) and *Euryischomyia* Girault (Text-fig. 1C, *Pax*), for which the name *Post axilla* is proposed.

SUMMARY

A new family Euryischidae is proposed, based on the genus *Euryischia* Riley. The systematic position of the genera *Myiocnema* Ashmead and *Euryischomyia* Girault is discussed. Two new subfamilies, Euryischinae based on the genus *Euryischia* and Myiocneminae based on the genus *Myiocnema* under Euryischidae have been proposed. A key to subfamilies and genera of Euryischidae fam.n. is given. *Euryischia indica* Mani & Kurian in the subfamily Euryischinae and *Euryischomyia alami* sp.n. in the subfamily Myiocneminae are described in detail. The name *Post axilla* is given to a sclerite lying posterior to and contiguous with the axilla in the genera *Euryischia*, *Myiocnema* and *Euryischomyia*.

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