NOTES ON THE MENOPONIDAE OF NORTH AMERICA. I.

BY K. C. EMERSON,

Oklahoma A and M College,
Stillwater, Oklahoma

This is the first of a series of papers dealing with the Menoponidae of North America, in which it is hoped that each genus can be discussed and illustrated. The author wishes to acknowledge the kindness of Dr. G. F. Ferris in lending the Stanford Collection, containing V. L. Kellogg’s type material, which is being used in these studies; and of Dr. C. F. W. Musebeck, for the loan of material from the United States National Museum.

Genus EIDMANNIELLA Keler, 1938

_Eidmanniella_ Keler, Annales Musei Zoologici Polonicci, XIII, p. 81-85 (1938)

_Head_ about twice as broad as long; the lateral margin of the forehead with a slit. Mandibles situated a short distance behind the anterior margin. Oesophageal sclerite either well developed or rudimentary. Antennae four-jointed. _Thorax_ normal; mesonotum short, separated from the metanotum. Legs normal; hind femora each with a patch of setae on the venter. Abdomen elongately oval with tergal, sternal, and paratergal plates; sternites IV-VI with small patches of setae on their lateral margins. Male _genitalia_ with the basal plate short, narrow anteriorly, and gradually broadened toward the apex where it is strongly expanded; parameres present.

Occurring on Sulidae, Phalacrocoracidiae, Fregatae, and Phaetontidae.

Genotype: _Monopon bellucida_ (Rudow).

EIDMANNIELLA PELLUCIDA (Rudow, 1869)

_Figs._ 2, 10, and 13


_Menopon brevipalpe_ Piaget, Les Pedioculines, p. 498, pl. 40, f. 5, (1880)


_Menopon brevipalpe_ Piaget; Harrison, Parasitology, IX, p. 34 (1916)

_Menopon bellucida_ Rudow; Harrison, ibid, p. 42


_Menopon bellucida_ Rudow; Bedford, ibid, p. 375

_Eidmanniella brevipalpe_ (Piaget); Keler, Annales Musei Zoologici Polonicci, XIII, p. 81-85 (1938)

_Eidmanniella bellucida_ (Rudow); Keler, ibid p. 81-85

_Eidmanniella brevipalpe_ (Piaget); Clay and Rothschild, Novitates Zoologicae, XLII, p. 206 (1939)


_Eidmanniella brevipalpe_ (Piaget); Thompson, Ann. and Mag. Nat. Hist., ser. 11, V, p. 53 (1940)

_Menopon bellucida_ Rudow, Thompson, ibid, p. 53

Type Host: _E. bellucida_ was described from specimens from _Phalacrocorax capensis_ (Sparmann) and _E. brevipalpe_ from specimens from _Phalacrocorax carbo carbo_ Linn. Specimens from _Phalacrocorax carbo carbo_ Linn. were examined (no locality data) and are included in this study because this species is the type of the genus and the host is found on the northeastern coast of North America.

EIDMANNIELLA SINGULARIS (Kellogg and Kuwana, 1902)

(Figs. 4, 5, 6, 7, 12, and 16)


Kellogg and Kuwana described this species from specimens taken off _Anous stolidus stolidus_ (Linn.)—the Galapagos Islands. Kellogg recorded it...
from *Phaethon aethereus* ssp., *Sula variegata* (Tschudi), *Sula nebouxii* Milne-Edwards, and *Phoebevisa palpebrata palpebrata* (Forster)—the Galapagos Islands. Kellogg and Mann listed it from *Phaethon aethereus* ssp.—Baja California. Ferris collected it from *Fregata minor* ssp.—Marquesas Islands; and Guimaraes from *Fregata manifexcis rothschildi* Mathews from Parana, Brazil.

I have examined Kellogg’s series of specimens and have found one male with data “S. cyanops, 15°N-130°W.” His specimens from *Phaethon aethereus* (no locality) are *Austromyelocon sternophilum* (Ferris); and the specimens from the same host with the locality as Paso Robles, California, are *Austromyelocon becki* (Kellogg). The specimens from *Phoebevisa palpebrata palpebrata* (Forster) are probably stragglers. The specimen, figured and described by Kellogg and Kuwana in their original description, is a male and not a female as stated by them. The records by Ferris and Guimaraes pertain to *E. singularis* (K. and K.).

**EIDAMINIALLA KUWANI** (Kellogg and Chapman, 1902)

(Figs. 3, 8, and 14)


*Amyside kuwani* (Kellogg and Chapman); Peters, Bird-Banding, VII, p. II (1936)


Kellogg and Chapman described this species from specimens from *Phalacrocorax penicillatus* (Brandt) from California. Peters recorded the species from *Phalacrocorax auritus auritus* (Lesson) from Georgia and Illinois.

I have examined the type specimens recorded and described by Kellogg and Chapman.

**EIDAMINIALLA PUSTULOSA** (Nitzsch, 1818)

(Figs. 1, 9, 11, and 15)


A small series of one male, one female, and an immature form from *Morus bassana* (Linn.), the type host, from the Bonaventure Islands was examined. This is the first record of this species from North America.

**DISCUSSION**

These four species are very closely related; however, they can be separated by a comparative study of the heads, gular regions, and thoracic sternal plates. In chaetotaxy and form of the female genitalia, the species are very similar. I have seen the males of *E. singularis* (Kellogg and Kuwana) and *E. pustulosum* (Nitzsch), which are figured. The accompanying figures and table of measurements illustrate the slight differences.

**TABLE NO. 1**

<table>
<thead>
<tr>
<th>Length</th>
<th>kuwani female</th>
<th>pellucidum female</th>
<th>singularis female</th>
<th>pustulosum female</th>
<th>singularis male</th>
<th>pustulosum male</th>
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<tbody>
<tr>
<td>Head</td>
<td>.240mm</td>
<td>.360mm</td>
<td>.372mm</td>
<td>.360mm</td>
<td>.372mm</td>
<td>.300mm</td>
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<tr>
<td>Prothorax</td>
<td>.300</td>
<td>.300</td>
<td>.300</td>
<td>.300</td>
<td>.228</td>
<td>.240</td>
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<tr>
<td>Meta-Meso-thorax</td>
<td>.204</td>
<td>.300</td>
<td>.300</td>
<td>.300</td>
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<td>.240</td>
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<tr>
<td>Abdomen</td>
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<td>1.620</td>
<td>1.620</td>
<td>1.740</td>
<td>.960</td>
<td>.960</td>
</tr>
<tr>
<td>Total</td>
<td>2.376</td>
<td>2.580</td>
<td>2.568</td>
<td>2.700</td>
<td>1.810</td>
<td>1.740</td>
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<td>Width</td>
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<td>.720mm</td>
<td>.780mm</td>
<td>.756mm</td>
<td>.696mm</td>
<td>.612mm</td>
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<tr>
<td>Prothorax</td>
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<td>.576</td>
<td>.600</td>
<td>.612</td>
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<td>.456</td>
</tr>
<tr>
<td>Meta-Meso-thorax</td>
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<td>.792</td>
<td>.780</td>
<td>.780</td>
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<td>.552</td>
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<td>1.116</td>
<td>1.090</td>
<td>1.164</td>
<td>.792</td>
<td>.756</td>
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Figs. 1-4 Gular region and thoracic sternal plates of Eidmaniella spp.: Fig. 1, *E. pustulosa*. Fig. 2, *E. pellucida*. Fig. 3, *E. Kuwani*. Fig. 4, *E. singularis*.

Figs. 5-6. *Eidmaniella singularis* (Kellogg and Kuwana): Fig. 5, Male. Fig. 6, Female (redrawn from Ferris, 1932).
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Figs. 7-10, Abdominal segments III-V, ventrolateral aspect: Fig. 7, *E. singularis*. Fig. 8, *E. kuwani*. Fig. 9, *E. pustulosa*. Fig. 10, *E. pellucida*.

Figs. 11-14, Half of head in outline, dorsal view: Fig. 11, *E. pustulosa*. Fig. 12, *E. singularis*. Fig. 13, *E. pellucida*. Fig. 14, *E. kuwani*.

Figs. 15-16, Male genitalia: Fig. 15, *E. pustulosa*. Fig. 16, *E. singularis*. 

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OTHER SPECIES IN THE GENUS

Eidmanniella albescens (Piaget) (Type host: Moris serrator (Gray))
Eidmanniella eurum (Piaget) (Type host: Halictor Niger (Vieillot))
Eidmanniella evrgaster (Nitzsch) (Type Host: Phalacrocorax olivaceus olivaceus (Humboldt))
Eidmanniella giganteum (Rudow) (Type host: Sula leucogaster (Boddaert))
Eidmanniela sigmoidale (Picaglia) (Type host: Phalacrocorax carbo lucidus (Lichtenstein))
Eidmanniella subrotundum (Piaget) (Type host: Phalacrocorax sulcirostris (Brandt))

Genus HELENOMUS Ferris, 1916

Helenomus Ferris, Canadian Entomologist, XLVIII, p. 305-306 (1916)

Head wider than long, front reduced and rounded. Lateral margins slightly swollen above the bases of the antennae. The temporal lobes rounded, reclined with the anterior margins set at a sharp angle to the longitudinal axis of the body. Pharyngeal scelerite and glands present. Antennae longer than normal, last segment conical.

Thorax with three segments, the mesothorax small, and the metathorax trapezoidal. Posterior legs with single delineated patches of setae on the ventral faces of the femora. Tibia of every leg with a row of small bristles on the external border of the distal portion.

Abdomen elongate, sternites and tergites each with a row of small setae along the posterior margin, and with numerous short stout hairs. Fifth sternite with a distinct patch of spines on each posterolateral angle. Male genitalia with an extremely long slender basal plate. Parameres large and stout, with the distal tips bent outward.

Occurring mostly upon Gruiformes.
Genotype: Colpocephalum truncatum Piaget.

HELENOMUS ASSIMILE (Piaget, 1880)

(Figs. 17, 18, and 19)

Colpocephalum assimile Piaget, Les Peciculines, p. 544 (1880)
Osborn, Div. of Ent. U.S.D.A. Bull. V, p. 246 (1896);
Harrison, Parasitology, IX, p. 47 (1916)
Colpocephalum assimile Piaget; Essig, Insects of Western N. A., p. 128 (1926)

Osborne collected this species in Iowa and Colorado from the type host, Grus americana (Linn.). Essig, recorded it from the same host collected in Colorado. The specimens of latter record are probably part of the series lent to the author by Dr. Ferris. The host is very rare, hence there are few recorded collections. Carriker stated that he had specimens in his collection, but failed to give any other data; however, I believe them to be a part of the University of Nebraska series collected in Lincoln, Nebraska.
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Figs. 17-19, *Helenomus assimile* (Piaget): Fig. 17, Female. Fig. 18, Male. Fig. 19, Male genitalia.