

INSECT RECONNAISSANCE IN LIBERIA, WEST AFRICA

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The Republic of Liberia lies approximately between 4° 22' to 8° 50' north latitude, and 7° 33' to 11° 32' longitude west of Greenwich. It has one of the most humid and rainiest climates of Africa. The rainy season begins in April and terminates in November, the annual rainfall being as much as 170 inches.

This paper is a report of an insect reconnaissance in many localities in the hinterland and coastal areas of Liberia. Collections were made throughout the year. Accordingly, an overall picture of seasonal distribution was obtained; this will be reported in a later paper.

In the following list families are arranged in accord with recent phylogenetic studies. Among the Diptera there are five new distributional records for Liberia and four undescribed species. Definite localities are given for all of the specimens.

DIPTERA

Tipulidæ

1. *Trentepohlia exornata* Bergr. Roberts Field; Harbel.

The collection also contains unidentified species of *Elephantomyia*, *Lecteria*, *Megistocera* and *Tipula* collected at Roberts Field and Harbel.

Bibionidæ

Unidentified species of *Plecia* collected at Roberts Field and Harbel.

Fungivoridæ

Unidentified species of *Cerotelion*, *Delopsis*, *Lycoria*, *Neoempheria* and *Trichosia* collected at Roberts Field and Harbel.

Tendipedidæ

Unidentified species of *Tendipes* collected at Roberts Field.

Heleidæ

Unidentified species of *Forcipomyia* collected at Roberts Field.

Psychodidæ

2. *Brunettia albonotata* (Brun.) Harbel.
3. *Telmatoscopus albipunctatus* (Will.) Roberts Field; Harbel.

Culicidæ

4. *Anopheles funestus* Giles. Roberts Field; Harbel; Gbanga.
5. *Anopheles gambiæ* Giles. Roberts Field; Harbel; Owen's Grove; Marshall; Kakata; Fisherman's Lake; Reputa; Salala; Cape Palmas; Grand Bassa.
6. *Anopheles hancocki* Edw. Roberts Field; Harbel; Fisherman's Lake.
7. *Anopheles nili* (Theob.) Roberts Field; Harbel.
8. *Anopheles paludis* Theob. New record for Liberia. Roberts Field.
9. *Aedes* (*Aëdimorphus*) sp. very close to *filis* I. & M. Roberts Field.
10. *Aedes ægypti* (L.) Roberts Field; Harbel; Kakata; Monrovia.
11. *Aedes africanus* (Theob.) Roberts Field; Kakata.
12. *Aedes luteocephalus* Newst. Roberts Field.
13. *Aedes vittatus* (Bigot). Roberts Field.
14. *Culex annulirostris consimilis* Newst. Roberts Field; Harbel.
15. *Culex bitæniorhynchus* Giles. Roberts Field; Harbel.
16. *Culex guiarti* Blanch. Roberts Field; Harbel.
17. *Culex moucheti* Evans. Roberts Field; Harbel.
18. *Culex nebulosus* Theob. Roberts Field; Harbel.
19. *Culex tigripes* Gr. & Ch. Roberts Field; Harbel.
20. *Eretmapodites chrysogaster* Graham. Roberts Field; Harbel.
21. *Mansonia africana* (Theob.) Roberts Field; Harbel.

22. *Mansonia metallica* (Theob.) Roberts Field.
23. *Mansonia uniformis* (Theob.) Roberts Field.
24. *Megarhinus* sp. probably *brevipalpis conradti* Grünb. Roberts Field; Harbel.

The collection also includes unidentified species of *Ficalbia* (*Miomyia*) collected at Roberts Field.

Tabanidæ

25. *Chrysops longicornis* Macq. Roberts Field.
26. *Tabanus besti* var. *arbucklei* Austen. Roberts Field; Harbel.
27. *Tabanus par* Walk. New record for Liberia. Roberts Field.
28. *Tabanus kingsleyi* Ricardo. Roberts Field; Harbel.
29. *Tabanus postacutus* Oldroyd. New record for Liberia. Roberts Field; Harbel.
30. *Tabanus tæniola* Palis. de B. Roberts Field.
31. *Thaumastocera akwa* Grünberg. New record for Liberia. Roberts Field.
32. *Hæmatopota furians* Edw. New record for Liberia. Roberts Field.
33. *Hæmatopota guineensis* Bigot. Roberts Field.

Rhagionidæ

Unidentified species of *Suragina* collected at Roberts Field and Harbel.

Asilidæ

Two new species, *Laphria* and *Ommatius*, collected at Roberts Field.

Dorilaidæ

Unidentified species of *Dorilas* collected at Roberts Field and Harbel.

Syrphidæ

34. *Baccha brevis* Karsch. Roberts Field; Harbel.
35. *Melanostoma annulipes* Macq. var. *mauritianum* Big. Roberts Field; Harbel.
36. *Microdon brevicornis* Loew. Roberts Field.
37. *Microdon punctulatus* Wied. Roberts Field.
38. *Paragus borbonicus* Macq. Roberts Field.

39. *Protylocera æsacus* Walker. Roberts Field; Harbel; Kakata.
 40. *Protylocera dibaphus* Walker. Roberts Field; Harbel; Kakata.
 41. *Rhingia cærulescens* Loew. Roberts Field; Harbel; Kakata.

The collection also contains unidentified species of *Tubifera* and two new species, *Eumerus* near *triangularis* Hervé-Bazin, and *Graptomyza*, collected at Roberts Field.

Tephritidæ

42. *Ceratitis (Pardalaspis) giffardi* Bezzi. Roberts Field; Harbel.
 43. *Ceratitis (Pardalaspis) punctata* (Wiedmann). Roberts Field; Harbel.
 44. *Ceratitis (Trirhithrum) fraterna* Munro. Roberts Field; Harbel.
 45. *Ceratitis (Trirhithrum) nigerrima* (Bezzi). Roberts Field; Harbel.
 46. *Dacus armatus* F. Roberts Field; Harbel.
 47. *Dacus punctatifrons* Karsch. Roberts Field; Harbel.

The collection also includes unidentified species of *Rhacochlæna* collected at Roberts Field.

Glossinidæ

48. *Glossina fusca* Walker. Roberts Field; Reputa; Kolobanu.
 49. *Glossina nigrofusca* Walker. Roberts Field; Memmeta.
 50. *Glossina palpalis* Rob.-Desv. Roberts Field; Kolobanu; Lengtawn; Banga; Reputa; Memmeta; Kakata.

HYMENOPTERA

Chalcidoidea

Unidentified species of *Brachymeria*, *Cleonymus*, *Philomides* and *Ptinobius* collected at Roberts Field.

Braconidæ

Unidentified species of *Iphiaulax* collected at Roberts Field and Harbel.

Ichneumonidæ

51. *Idechthis canescens* (Grav.) Roberts Field; Harbel.
The collection also includes unidentified species of *Anomalon*, *Charops*, *Enicospilus*, *Melanichneumon*, *Pristomerus*, *Xanthocampoplex*, *Xanthopimpla* and *Zaleptopygus* collected at Roberts Field.

Tiphidæ

52. *Tiphia pedestris* Gerst. Roberts Field; Harbel.

Scoliidæ

53. *Campsomeris albicollis* (Chr.) Roberts Field.
The collection also contains unidentified species of *Scolia* collected at Harbel.

Mutillidæ

54. *Timulla cyparissa* (Sm.) Roberts Field.
The collection also includes unidentified species of *Odontomutilla* collected at Roberts Field and Harbel.

Chrysididæ

55. *Chrysis lyncea* F. Roberts Field; Harbel; Marshall; Kakata; Reputa.

Formicidæ

56. *Dorylus* (*Dorylus*) *gribodoi* Emery. Roberts Field; Harbel; Monrovia; Salala.
57. *Dorylus* (*Anomma*) *nigricans* Illiger. Roberts Field; Harbel; Monrovia.
58. *Æcophylla longinoda* var. *fusca* Emery. Roberts Field; Harbel; Kakata.
59. *Paltothyreus tarsatus* (F.) Roberts Field.
The collection also contains unidentified species of *Crematogaster* collected at Roberts Field and Harbel.

Pompilidæ

60. *Cyphononyx croceicornis* (Er.) Harbel.
61. *Paracyphononyx zonatus* (Ill.) Roberts Field.
62. *Pseudagenia personata* Grib. Roberts Field.
The collection also contains unidentified species of *Anoplius* collected at Roberts Field.

Vespidæ

63. *Polistes marginalis* var. *ornatus* Lep. Roberts Field.
64. *Polybioides tabida* (F.) Roberts Field.
65. *Ropalidia cincta* (Lep.) Roberts Field.
66. *Belonogaster junceus* (F.) Roberts Field.
67. *Rygchium marginellum* (F.) Roberts Field; Harbel.
68. *Rygchium albonigrum* (J. Bequaert). Roberts Field; Harbel.
69. *Rygchium synagroides* (Sauss.) Harbel.
70. *Rygchium ventrale* (Sauss.) Harbel.
71. *Synagris calida* (L.) Harbel.
72. *Synagris cornuta* (L.) Roberts Field; Harbel; Marshall.
73. *Synagris spiniventris* (Ill.) Roberts Field; Harbel.

Sphecidæ

74. *Chalybion fuscipennis* (Sm.) Roberts Field; Marshall.
75. *Chlorion xanthoceros* (Ill.) Roberts Field; Harbel; Marshall.
76. *Motes cræsus* (Sm.) Roberts Field.
77. *Sceliphron spirifex* (L.) Roberts Field; Harbel; Marshall; Kakata; Salala.
78. *Sphex*, near *indutus* (Kohl). Roberts Field; Harbel; Marshall.

The collection also includes unidentified species of *Cercheris*, *Dasyproctus*, *Hoplisoides*, *Trypoxylon* and *Bembix* collected at Roberts Field. The last named specimen was also found at Kakata, Reputa and Salala.

Apidæ

79. *Trigona erythra* Schlett. Tototown; Salala.
80. *Trigona erythra togænsis* Stad. Tototown; Salala.
81. *Trigona (Dactylurina) staudingeri* Grib. Roberts Field; Harbel.
82. *Anthophora cincta* F. Roberts Field; Harbel.
83. *Mesotrichia albiceps* (F.) Reputa; Salala.
84. *Mesotrichia gabonica* Vach. Roberts Field; Harbel.
85. *Mesotrichia imitator nigriceps* Friese. Roberts Field.

86. *Mesotrichia modesta* (Smith). Roberts Field; Harbel.
 87. *Mesotrichia præusta* (Smith). Roberts Field.
 88. *Mesotrichia torrida* (Westw.) Roberts Field; Harbel.
 89. *Pasites nigerrima* Fr. Roberts Field.
 90. *Euaspid abdominalis* (F.) Roberts Field; Harbel.
 91. *Gronoceras prætexta* (Vach.) Roberts Field; Harbel; Marshall.
 92. *Megachile crocutella* Ckll. Roberts Field.
 93. *Megachile rufipes* (F.) Harbel; Reputa.
 94. *Pachyanthidium xanthostomum* Ckll. Roberts Field.

The collection also contains unidentified species of *Xylocopa*, *Crocisca* and *Halictus* collected at Roberts Field and Harbel.

COLEOPTERA

Carabidæ

Unidentified species of *Anisodactylus*, *Craspedophorus*, *Ochyropus*, *Orthogonus* and *Pheropsophus* collected at Roberts Field.

Hydrophilidæ

Unidentified species of *Sternolophus* collected at Roberts Field.

Staphylinidæ

Unidentified species of *Pæderus* collected at Roberts Field.

Histeridæ

Unidentified species of *Hister* collected at Roberts Field and Harbel.

Lycidæ

95. *Lycus latissimus* (L.) Roberts Field.
 96. *Lycus sinuatus* Dalm. or *semiamplexus* Murray.
 Roberts Field.

The collection also includes unidentified species of *Speckia* collected at Roberts Field.

Meloidæ

Unidentified species of *Zonabris* and *Zonitis* collected at Roberts Field and *Epicauta* found at Reputa.

Coccinellidæ

97. *Cheilomenes axillaris* Ws. Roberts Field; Harbel.
 98. *Chilocorus schiædtei* Muls. Roberts Field; Harbel.
 99. *Epilachna assimilis* Muls. Roberts Field; Harbel.

Tenebrionidæ

100. *Odontopus cupreus* F. Roberts Field.

The collection also contains unidentified species of *Eupezus*, *Opatrinus* and *Prioscelis* collected at Roberts Field and Harbel.

Lagriidæ

Unidentified species of *Lagria* collected at Roberts Field.

Scarabæidæ

101. *Odoretus luteipes* Cast. teste Ohaus. Roberts Field; Harbel.
 102. *Anomala discordabilis* Dohrn. Roberts Field.
 103. *Anomala imarginata* Ohs. Roberts Field.
 104. *Archon centaurus* (F.) Roberts Field; Harbel.
 105. *Diplognatha gagates* (Forst.) Harbel.
 106. *Heteroligus meles* Bilb. Roberts Field.
 107. *Incala lineola* Westw. Roberts Field.
 108. *Oryctes monocerus* Ol. Roberts Field; Harbel.
 109. *Pachnoda marginata* Drury. Roberts Field; Harbel.
 110. *Pachnoda tridentata* (F.) Roberts Field; Harbel.

The collection also includes unidentified species of *Apo-gonia*, *Eulepida* and *Trochalus* collected at Roberts Field and Harbel.

Lucanidæ

Unidentified species of *Prosopocoilus* collected at Roberts Field.

Cerambycidæ

111. *Acanthophorus* (*Tithoes*) *palini* Hope. Owen's Grove.
 112. *Monochamus ruspator* (F.) Owen's Grove.
 113. *Sternotomus regalis* (F.) Roberts Field.

The collection also contains unidentified species of *Callichroma* and *Euporus* collected at Roberts Field.

Chrysomelidæ

114. *Callispa* sp. near *nigripes* Baly. Roberts Field.
 115. *Cryptocephalus* sp. perhaps *dregei* Suffr. Roberts Field.
 116. *Galerucella geniculata* Harold. Roberts Field.

The collection also includes unidentified species of *Aspidomorpha*, *Hispa* and *Monolepta* collected at Roberts Field and Harbel.

Anthribidæ

117. *Gynandrocerus antennalis* Lac. Harbel.
 118. *Polycorynus* sp. probably *compressicornis* F. Roberts Field.

The collection also includes unidentified species of *Phlætrogus* collected at Roberts Field.

Curculionidæ

119. *Rhynchophorus phæniciensis* F. Roberts Field; Harbel.
 120. *Sipalinus guineensis* (F.) Roberts Field.
 121. *Temnoschoita quadripustulata* (F.) Roberts Field.

The collection also contains unidentified species of *Lixus*, *Mechistocerus* and *Protocylas* collected at Roberts Field.

ORTHOPTERA

Blattidæ

122. *Leucophaea grandis* (Sauss.) Roberts Field.
 123. *Periplaneta australasiæ* (F.) Roberts Field; Harbel.

Gryllidæ

124. *Gryllotalpa africana* Beauv. Roberts Field; Harbel.

DERMAPTERA

Forficulidæ

125. *Diaperasticus erythrocephalus* (Oliv.) Roberts Field; Harbel.

Labiduridæ

Unidentified species of *Eurollia* collected at Roberts Field.

ISOPTERA

Termitidæ

126. *Macrotermes bellicosus* (Smeathman). Roberts Field; Kakata; Salala; Reputa; Harbel.

SIPHONAPTERA

Pulicidæ

127. *Ctenocephalides canis* (Curtis). Roberts Field; Kakata; Harbel; Monrovia.

NEUROPTERA

Myrmeleonidæ

128. *Palpares manicatus* Rambur. Roberts Field; Harbel.

SUMMARY TABLE

| <i>Orders</i> | <i>Families</i> | <i>Genera</i> | <i>Species</i> | <i>Deter- mined</i> | <i>Undeter- mined</i> |
|--------------------|-----------------|---------------|----------------|-------------------------|---------------------------|
| Diptera | 14* | 43 | 71 | 50 | 21 |
| Hymenoptera | 12 | 55 | 69 | 44 | 25 |
| Coleoptera | 15 | 55 | 56 | 27 | 29 |
| Orthoptera | 2 | 3 | 3 | 3 | 0 |
| Dermaptera | 2 | 2 | 2 | 1 | 1 |
| Isoptera | 1 | 1 | 1 | 1 | 0 |
| Siphonaptera | 1 | 1 | 1 | 1 | 0 |
| Neuroptera | 1 | 1 | 1 | 1 | 0 |
| <u>8</u> | <u>48</u> | <u>161</u> | <u>204</u> | <u>128</u> | <u>76</u> |

* The following families were not listed because of undetermined specimens: Empididæ, Therevidæ, Dolichopodidæ, Otitidæ, Piophilidæ, Phoridæ, Milichiidæ, Pyrgotidæ, Stratiomyidæ, Drosophilidæ and Diopsidæ.

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