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**A WORLD LIST OF PREY OF *CHLAENIUS*
(COLEOPTERA: CARABIDAE)**

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Being predaceous insects, the carabid beetles are believed to play an important role in the control of insect pests (Scherney 1957 and 1959, Hughes 1959, Wright, Hughes and Worral 1960, Mitchell 1963). The current interest in biological control against noxious insects requires a complete understanding of the organisms being used. The aim of this paper was to compile a list of data on the food of the genus *Chlaenius*, from the literature and observations in the laboratory.

The beetles of this genus are world-wide in distribution; they live mostly at the borders of waters and appear to be principally nocturnal. Their mandibles are more or less asymmetric and differ both in shape and in the disposition of teeth. The left mandible is elongate and straight, while the right is short and curved (Bell 1960).

The members of the genus *Chlaenius* as destroyers of caterpillars and grubs suggest their application to biological control of pests, peculiarly in wet agricultural lands.

SPECIES ACCOUNTS

- Chlaenius* sp. *Laphygma exempta* Walker (Lepidoptera: Noctuidae)—Australia (Bell 1936).
Phaedonia areata Fabricius (Coleoptera: Chrysomelidae)—Malawi (Smee 1936, Ankersmit 1952). *Pyrausta nubilalis* Hübner (Lepidoptera: Pyraustidae)—Japan (Kuwayama 1930, Goidanich 1931). *Sesamia inferens* Walker (Lepidoptera: Noctuidae)—Japan (Yanagihara 1934). *Utetheisa pulchella* Linné (Lepidoptera: Arctiidae)—India (Fletcher 1916). An unidentified Acrididae (Orthoptera)—Mali (Popov 1959).
- Chlaenius abstersus* Bates. *Gryllotalpa africana* Palisot de Beauvois (Orthoptera: Gryllotalpidae)—Japan (Sakurai and Inouye 1953, Inouye 1956).
- Chlaenius alternatus* Horn. Fresh water shrimps, pieces of *Tenebrio molitor* Linné and *T. picipes* Hervst (Coleoptera: Tenebrionidae)—Canada, in captivity (Henri Goulet, personal communication).
- Chlaenius australis* Dejean. *Laphygma exempta* Walter (Lepidoptera: Noctuidae)—Australia (Jarvis 1921, 1924 and 1928).
- Chlaenius bioculatus* Chaudoir. *Antigastra catalaunalis* Duponchel (Lepidoptera: Pyralidae)—India (Fletcher 1919). *Diacrisia obliqua* Walker (Lepidoptera: Arctiidae)—India, in captivity (Fletcher 1919). *Polytela gloriosae* Fabricius (Lepidoptera: Noctuidae)—India, in captivity (Fletcher 1919). *Prodenia litura* Fabricius (Lepidoptera: Noctuidae)—India, in captivity (Fletcher 1919). *Utetheisa pulchella* Linné (Lepidoptera: Arctiidae)—India (Fletcher 1919).
- Chlaenius circumdatus* Brullé. *Monolepta signata* Olivier (Coleoptera: Chrysomelidae)—India (Fletcher 1919). *Pales pavidus* Meigen (Diptera: Tachinidae)—Japan (Takaoka 1950, Tanaka 1956, Habu 1961, Habu and Sadanaga 1962). *Stictaspis ceratitina* Bezzi (Diptera: Tephritidae)—India, in captivity (Fletcher 1919). An unidentified Chrysomelidae (Coleoptera)—India (Fletcher 1919).
- Chlaenius circumductus* Morawitz. *Barathra brassicae* Linné (Lepidoptera: Noctuidae)—Japan (Inouye 1953a and 1956, Sakurai and Inouye 1953, Habu and Sadanaga 1962). *Gryllotalpa africana* Palisot de Beauvois (Orthoptera: Gryllotalpidae)—Japan (Sakurai and Inouye 1953, Inouye 1956, Habu and Sadanaga 1962). *Oulema oryzae* Kuwayama (Coleoptera: Chrysomelidae)—Japan (Kuwayama and Nishijima 1946, Sakurai and Inouye 1953, Habu and Sadanaga 1962).
- Chlaenius cordicollis* Kirby. Unidentified dead or injured insects—North America (Ball 1963).

- Chlaenius costiger* Chaudoir. *Chilo suppressalis* Walker (Lepidoptera: Pyralidae)—Japan (Nawa 1917). *Naranga aenescens* Moore (Lepidoptera: Noctuidae)—Japan (Nawa 1917). *Pales pavidata* Meigen (Diptera: Tachinidae)—Japan (Takaoka 1950).
- Chlaenius dichrous* Wiedemann. *Carpocapsa pomonella* Linné (Lepidoptera: Tortricidae)—South Africa (Pettey 1919, Nel 1942).
- Chlaenius discopictus* Fairmaire. An unidentified Acrididae (Orthoptera)—Somalia (Greathead 1962).
- Chlaenius ducalis* Chaudoir. *Oryctes rhinoceros* Linné (Coleoptera: Scarabaeidae)—India (Rao et al. 1964).
- Chlaenius emarginatus* Say. Pieces of ham, a grape—Canada, in captivity. According to Ball (1963), the "character of the mandibles indicates that this species prey on large, soft-bodied organisms".
- Chlaenius erythropus* Germar. Unidentified cankerworms (Lepidoptera: Geometridae)—U.S.A. (Forbes 1883). Unidentified cutworms (Lepidoptera: Noctuidae)—U.S.A. (Forbes 1883). Earthworms—U.S.A. (Forbes 1883).
- Chlaenius flaviguttatus* Macleay. Unidentified caterpillars (Lepidoptera)—Guam (Darlington 1970).
- Chlaenius fulgidicollis* Duftschmid. *Aphodius* sp. (Coleoptera: Scarabaeidae) and unidentified Staphylinidae (Coleoptera)—Spain (Burmeister 1939).
- Chlaenius impunctifrons* Say. *Arzama obliqua* Walker (Lepidoptera: Noctuidae)—U.S.A., in captivity (Claassen 1919). *Lymnaecia phragmitella* Stainton (Lepidoptera: Cosmopterygidae)—U.S.A., in captivity (Claassen 1919). A dead *Chlaenius sericeus* Forster (Coleoptera: Carabidae), a dead slug, earthworms, pieces of ham and maize kernels—Canada, in captivity. Unidentified flies (Diptera)—U.S.A., in captivity (Claassen 1919). Unidentified insects and small animals—Undetermined country (Wellhouse 1926).
- Chlaenius inops* Chaudoir. *Anomala rufocuprea* Motschulsky (Coleoptera: Scarabaeidae)—Japan (Tanaka 1956). *Aphodius rectus* Motschulsky (Coleoptera: Scarabaeidae)—Japan (Tanaka 1956). *Gryllotalpa africana* Palisot de Beauvois (Orthoptera: Gryllotalpidae)—Japan (Sakurai and Inouye 1953, Inouye 1956, Tanaka 1956). Fresh meat (Tanaka 1956).
- Chlaenius lithophilus* Say. Earthworms, a dead slug, a piece of ham and a maize kernel.
- Chlaenius macropus* Chaudoir. *Oryctes rhinoceros* Linné (Coleoptera: Scarabaeidae)—India (Rao, et al. 1964).
- Chlaenius micans* Fabricius. *Barathra bassicae* Linné (Lepidoptera: Noctuidae)—Japan (Nawa 1919, Yokoyama 1929, Inouye 1956, Habu and Sadanaga 1965). *Glyphodes pyloalis* Walker (Lepidoptera: Pyralidae)—Japan (Yokoyama 1929, Inouye 1956, Habu and Sadanaga 1965). *Micractis variabilis* Bremer (Lepidoptera: Pyralidae)—Japan (Yokoyama 1929, Inouye 1956). *Parnara guttata* Bremer and Grey (Lepidoptera: Noctuidae)—Japan (Nakai 1904, Yokoyama 1929, Inouye 1956, Habu and Sadanaga 1965).
- Chlaenius naeviger* Morawitz. *Adoxophyes orana* Fisher von Röslerstamm (Lepidoptera: Tortricidae)—Japan (Nawa 1936). *Adoxophyes privatana* Walker (Lepidoptera: Tortricidae)—Japan (Kamiya 1941). *Brachmia macroscopa* Meyrick (Lepidoptera: Gelechiidae)—Japan (Ohira 1951). *Micractis variabilis* Bremer (Lepidoptera: Pyralidae)—Japan (Habu 1964). *Pales pavidata* Meigen (Diptera: Tachinidae)—Japan (Takaoka 1950). *Parnara guttata* Bremer and Grey (Lepidoptera: Hesperidae)—Japan (Habu 1964).
- Chlaenius neelgheriensis* Guérin-Meneville. *Oryctes rhinoceros* Linné (Coleoptera: Scarabaeidae)—India (Rao et al. 1964).
- Chlaenius nemoralis* Say. Unidentified insects, earthworms, fungi and plant fragments—U.S.A. (Forbes 1883).
- Chlaenius nigricans* Wiedemann. *Barathra brassicae* Linné (Lepidoptera: Noctuidae)—Japan (Nawa 1919). *Pales pavidata* Meigen (Diptera: Tachinidae)—Japan (Takaoka 1950).
- Chlaenius obesus* Laferté. An unidentified acrididae (Orthoptera)—Malawi (Smee 1935).
- Chlaenius omochlorus* Andrewes. *Oryctes rhinoceros* Linné (Coleoptera: Scarabaeidae)—India (Rao et al. 1964).

- Chlaenius pallipes* Gebler. *Aulacophora femoralis* Motschulsky (Coleoptera: Chrysomelidae)—Japan (Tanabe and Mishima 1930, Inouye 1952 and 1956, Habu and Sadanaga 1962). *Barathra bassicae* Linné (Lepidoptera: Noctuidae)—Japan (Matsumura 1897). *Chilo suppressalis* Walker (Lepidoptera: Pyralidae)—Japan (Nawa 1917). *Cinara todocola* Inouye (Hemiptera: Aphididae)—Japan (Inouye 1944). *Dermestes* sp. (Coleoptera: Dermestidae)—Japan (Tanaka 1956). *Gryllotalpa africana* Palisot de Beauvois (Orthoptera: Gryllotalpidae)—Japan (Sakurai and Inouye 1953). *Naranga aenescens* Moore (Lepidoptera: Noctuidae)—Japan (Nawa 1917). *Paederus fuscipes* Curtis (Coleoptera: Staphylinidae)—Japan (Kurosa 1958). *Pales pavidia* Meigen (Diptera: Tachinidae)—Japan (Takaoka 1950). *Scotinophara lurida* Burmeister (Hemiptera: Pentatomidae)—Japan (Katsumata 1930). Fresh meat (Tanaka 1956).
- Chlaenius pericallus* Redtenbacher. *Paederus fuscipes* Curtis (Coleoptera: Staphylinidae)—Japan (Tanaka 1956, Kurosa 1958). Fresh meat (Tanaka 1956).
- Chlaenius pictus* Chaudoir. *Bombyx mori* Chaudoir (Lepidoptera: Bombycidae)—Japan (Nishikawa 1919). *Glyphodes pyloalis* Walker (Lepidoptera: Pyralidae)—Japan (Nishikawa 1919). *Pyrausta nubilalis* Hubner (Lepidoptera: Pyralidae)—Japan (Koo 1940).
- Chlaenius platyderus* Chaudoir. *Palaeacrita vernata* Peck (Lepidoptera: Geometridae)—U.S.A. (Porter and Alden 1924). Unidentified caterpillars (Lepidoptera), larvae of Coleoptera, fungi and fragments of vegetal tissue—U.S.A. (Forbes 1883).
- Chlaenius posticalis* Motschulsky. *Adoxophyes orana* Fischer von Röslerstamm (Lepidoptera: Tortricidae)—Japan (Habu *et al.* 1963, Inouye 1956). *Barathra brassicae* Linné (Lepidoptera: Noctuidae)—Japan (Inouye 1953a). *Phrixolepia sericea* Butler (Lepidoptera: Heterogeneidae)—Japan (Inouye 1956, Habu *et al.* 1963). *Sesamia inferens* Walker (Lepidoptera: Noctuidae)—Japan (Miyatake 1952).
- Chlaenius prasinus* Dejean. Unidentified insects—U.S.A. (Bell 1960).
- Chlaenius pusillus* Say. *Diatraea saccharalis* Fabricius (Lepidoptera: Pyralidae)—U.S.A. (Negm and Hensley 1969). *Staphylinus cinnamopterus* Gravel (Coleoptera: Staphylinidae)—U.S.A. (Webster 1881).
- Chlaenius quadrinotatus* Dejean. An unidentified Acrididae (Orthoptera)—Mali (Popov 1959).
- Chlaenius sericeus* Forster. *Popillia japonica* Newman (Coleoptera: Scarabaeidae)—U.S.A. (Smith and Hadley 1926). A dead slug, earthworms, a piece of ham and a grapefruit—Canada, in captivity. Unidentified dead or dying insects—U.S.A. (Bell 1960).
- Chlaenius sericimicans* Chaudoir. Unidentified living small insects and fresh meat—Japan (Tanaka 1956).
- Chlaenius sexmaculatus* Dejean. *Locusta migratoria migratorioides* Reiche and Fairmaire (Orthoptera: Locustidae)—Mali (Popov 1959).
- Chlaenius stellatus* Dejean. An unidentified Acrididae (Orthoptera)—Senegal (Risbec 1946) and Mali (Popov 1959).
- Chlaenius tomentosus* Say. *Melolontha* sp. (Coleoptera: Scarabaeidae)—U.S.A. (Davis 1919). *Lacinipteria spiculosa* Grote (Lepidoptera: Noctuidae)—U.S.A. (Arnaud 1970). *Pediasia caliginosella* Clemens (Lepidoptera: Crambidae)—U.S.A. (Runner 1914). Viscera of *Phyllophaga* sp. (Coleoptera: Scarabaeidae)—U.S.A. (Forbes 1894). Two dead *Anisodactylus verticalis* LeConte (Coleoptera: Carabidae)—Canada, in captivity. Unidentified insects, earthworms, fungi and vegetal tissue—U.S.A. (Forbes 1883).
- Chlaenius tricolor* Say. A dead *Chlaenius sericeus* Forster (Coleoptera: Carabidae), a dead slug, an earthworm, a piece of ham—Canada, in captivity.
- Chlaenius tristis* Schaller. Unidentified insect larvae—Germany (Rapp 1933).
- Chlaenius trachys fumatus* Andrewes. *Oryctes rhinoceros* Linné (Coleoptera: Scharabaeidae)—India (Rao *et al.* 1964).
- Chlaenius transversalis* Dejean. An unidentified Acrididae (Orthoptera)—Senegal (Risbec 1946) and Ethiopia (Popov and Greathead 1958).
- Chlaenius varticornis* Morawitz. *Gryllotalpa africana* Palisot de Beauvois (Orthoptera: Gryllotalpidae)—Japan (Inouye 1953b and 1956, Habu and Sadanaga 1962).

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