

Diop (1979) (Effets de quelques insecticides granulés sur *Aleurocybotus* sp. ? *indicus* David, ennemi du riz irrigué au Sénégal. *Congrès sur la Lutte Contre les Insectes en Milieu Tropical*, Marseille, 13-16 Mars 1979. pp. 1-10) has discussed the effects of the whitefly in Sénégal. It causes a general withering of the plants which also become heavily infected with a black sooty fungus growing on the abundant honeydew excreted by the insects.

*A. indicus* was described from Coimbatore, India, on the grasses *Chloris barbata* and *Dactyloctenium aegyptium* but a single specimen on rice from Satara, India, collected in 1966, is present in the British Museum (Natural History). The only other whitefly recorded previously on rice is the polyphagous species *Bemisia tabaci* (Gennadius) found at Kayarambedu (Madras) in 1970 and mentioned by David & Subramaniam (1976) (Studies on some Indian Aleyrodidae. *Records of the Zoological Survey of India* 70: 133-233).

The writers have had the identification of West African specimens kindly verified by Miss L. M. Russell of the USDA, Beltsville, Maryland, and have had access to two paratypes held in the British Museum (Natural History).

D. J. Williams

Commonwealth Institute of Entomology,  
c/o British Museum (Nat. Hist.),  
Cromwell Road,  
London SW7 5BD.

T. Diop

Projet Special ADRAO,  
B.P. 29 - Richard-Toll,  
Sénégal.

GERARD FABRES Tropical Pest Management 27(1) 145-146

#### ENTOMOPHAGOUS INSECTS ASSOCIATED WITH THE CASSAVA MEALYBUG IN CONGO

The cassava mealybug, *Phenacoccus manihoti* Matile-Ferrero, is a new species from South America (Brazil, Guyana) which was introduced recently into West and Central Africa (Zaire, Congo, Gabon, Nigeria, Senegal) where it is causing severe damage (Nwanze *et al.* (1979), *PANS* 25: 125-130).

Zaire has undertaken a biological control programme by introducing parasites from the new world. For this purpose the Commonwealth Institute of Biological Control in Trinidad is undertaking studies on natural enemies of cassava mealybugs and now has several species of encyrtid parasites from South America in culture and available for introduction. However, before introducing any foreign organism, it is essential to know the precise composition of the local natural enemy complex, so that its control ability can be taken into account.

This gives the first general information about the natural enemies of *P. manihoti* in Congo (Fig. 1).

The primary entomophagous insects belong to five orders: parasitic Hymenoptera (Encyrtidae); Coleoptera (Coccinellidae); Diptera (Cecidomyiidae); Hemiptera (Anthocoridae) and predatory Lepidoptera (Lycaenidae).

There are few parasites, as their ability to adapt to an introduced species is low. *Anagyrus* sp. n. is the only species to be found in large numbers. It has morphological characteristics which do not fit any of the current descriptions. The mean rates of parasitism range from 3 to 5%.

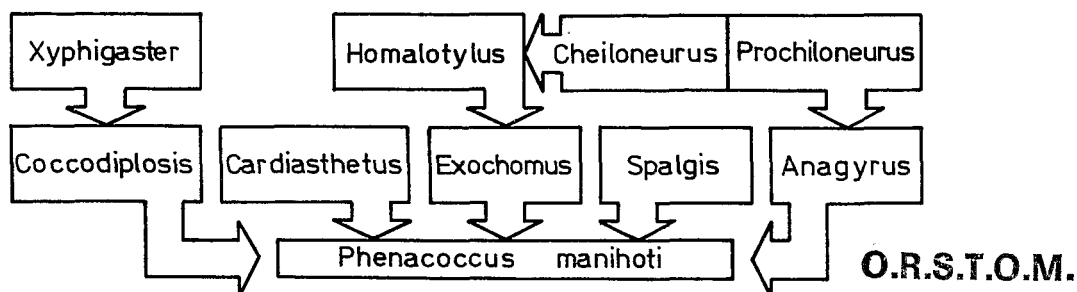


Fig. 1. Natural enemies of *Phenacoccus manihoti* in Congo.

O.R.S.T.O.M.  
Fonds Documentaire  
N° : 82/84/01383  
Cote : B. ex 1  
Date : 18 MAI 1982

Predators form the majority of the primary entomophagous insects, as their polyphagy makes their adaptation to a new host easier. Coccinellids are the most numerous. There are three main species: *Exochomus flaviventris* Mader, *E. concavus* Fürsch and *Hyperaspis senegalensis* Mulsant. The first species is the most active and develops throughout the dry season. There is an average of 12 to 15 adults of *E. flaviventris* per 1000 coccids. The action of these three species is complementary since they develop at different times of the year. There are also several minor species: *Scymnus* (S.) *rufifrons* Fürsch, *Scymnus* (S.) *plebejus* Weise; *Sthetorus endruedi* Fürsch; *Serangium giffardi* Grandi; *Nephus derroni* Fürsch and *Platynaspis* sp.

Three species of cecidomyiid flies have been observed in the coccid colonies. Two of them belong to the genera *Dicrodiplosis* Kieffer and *Lestodiplosis* Kieffer but they have not been identified so far. The most abundant species is *Coccodiplosis citri* Barnes. There is an average of 50 to 60 full-grown larvae of *C. citri* in colonies of 1000 to 1200 coccids.

*Cardiasthetus exiguus* Poppius is an anthocorid which is regularly found with *P. manihoti*. It is not very numerous and its predatory behaviour and specificity are not fully known.

The Lycaenidae are represented by a very polyphagous species, *Spalgis lemolea* Druce, which is well known because of the form of its larva and pupa. They are mainly found in the rainy season when the coccid populations are low.

Several hymenopterous parasites develop upon the primary and secondary entomophagous insects. All of them belong to the family Encyrtidae. *E. flaviventris* is attacked by *Homalotylus flaminus* (Dalman) with rates of parasitism ranging from 7 to 10%. *C. citri* is discreetly infested by *Xyphigaster pseudococci* Risbec with little effect on the action of the cecidomyiids. *Cheiloneurus cyanonotus* Waterston attacks *H. flaminus*, with rates of parasitism ranging from 7 to 10%. *Prochiloneurus pulchellus* Silvestri is a hyperparasite of *Anagyrus* sp. n. and the rate of parasitism can reach 25%.

It is therefore necessary to study the possibilities of increasing the local fauna with introduced parasitic Hymenoptera. On the other hand, the variety and the activity of the local predators is such that some natural control can be achieved. Studies on the bioecology of the main predators are in progress.

G. Fabres

Office de la Recherche Scientifique et Technique Outre-Mer,  
B.P. 181 Brazzaville, R.P. du Congo.