

diapause within the soil during the dry months of the year and emerges with the onset of heavy rains. Further confirmation for this was obtained when emergence was noticed with the commencement of heavy rains in June 1986. *Z. bicolorata* is known to overwinter as adults in the soil in Mexico⁸. In Queensland, Australia where this insect has been introduced for control of *Parthenium* delayed rainfall has been reported to cause poor survival⁹. *Z. bicolorata* may therefore perform better in parts of India which receive well distributed heavy rainfall.

The author is grateful to Mr N. Chandrasekhar for technical assistance.

29 September 1986

1. McFadyen, R. E., *News Bull. Ent. Soc. Queensland*, 1981, 8, 89.
2. Rao, R. S., *J. Bombay Nat. Hist. Soc.*, 1956, 54, 218.
3. Gidwani, I., *Current*, 1975, Oct 25, 12, 13, 17.
4. Towers, G. H. N., Mitchell, J. C., Rodriguez, E., Bennett, F. D., Subba Rao, P. V., *J. Sci. Ind. Res.*, 1977, 36, 672.
5. Kumar, S., Jayaraj, S., Muthukrishnan, J. *Entomol. Res.*, 1979, 3, 32.
6. Bennett, F. D., *A preliminary survey of the insects and diseases attacking Parthenium hysterophorus (Compositae) in Mexico and the USA to evaluate the possibilities of its biological control in Australia Mimeographed report, Commonw. Inst. Biol. Control.*, 1976.
7. Jayanth, K. P., Nagarkatti, S. *Entomon.*, 1986, (In press).
8. McFadyen, R. E., McClay, A. R. *Proc. 6th Austr. Weeds Conf.*, 1981, 145.
9. McFadyen, R. E., *The biological control programme against Parthenium hysterophorus in Queensland*, Paper presented in VI. Int. Symp. Biol. Contr. Weeds, Vancouver, 1984.

A NATURAL VARIANT BEARING PODS ON THE ROOT-HYPOCOTYL TRANSITIONAL ZONE IN GROUNDNUT

M. S. BASU and P. S. REDDY

National Research Centre for Groundnut, Timbawadi, Junagadh 362 015, India.

THE cultivated groundnut (*Arachis hypogaea* L) is a geocarpic annual herb characteristic of producing

Pods inside the soil. It is essentially a self-pollinated legume known to produce both open chasmogamic as well as unopened cleistogamic flowers. The chasmogamic flowers are borne on compressed spikes in the axil of the leaves of the main stem and branches in sub sp *fastigiata* and restricted only on the branches in sub sp *hypogaea*. The cleistogamic flowers common to both the sub sp are formed at the cotyledonary axil which are partly hidden in the soil surface and are capable of producing pods. After fertilization an intercalary meristem at the base of the ovary is activated and peg i.e. carpophore is produced which bears the fertilized ovule at its tip. The peg, strictly geotropic in nature, penetrates the soil up to 7 cm and then it becomes diageotropic and enlargement of the fruit occurs. Thus, the carpophore development is restricted to the nodes on the cotyledonary axil and above ground portion of the plant.

The normal plant does not bear carpophore from the underground parts. However, an atypical plant was noticed in an F₄ generation progeny of the cross



Figure 1. A natural variant in groundnut.

JL 24 × Chico which was found to bear pegs and pods from the below ground parts of the plant. As can be seen from the figure five well-developed pods originated from the hypocotyl-root transition zone located at 12.7 cm depth from the soil surface. In addition to these pods the plant produced several pods from the shoot portion as is the case in normal plants. All the five pods borne at the hypocotyl-root joint were as healthy and normal as that of those produced from the shoot portion. It appears that the flowers produced deep inside the soil are also capable of developing into pods in groundnut. It is not known whether the off-type plant is a freak or a genetic abnormality which is capable of transmitting this attribute to the subsequent generations. Further investigations on this aspect are in progress. This is the first report on the occurrence of Peanut plant bearing carpophore and pods from hypocotyl-root joint.

29 September 1986

**NEW RECORD OF LARVAL PARASITE,
FRIONA SP (GELINAE: ICHNEUMONIDAE)
ON CARDAMOM SHOOT BORER,
DICHOCROCIS PUNCTIFERALIS GUEN
(PYRALIDAE: LEPIDOPTERA)**

S. VARADARASAN

Indian Cardamom Research Institute, Regional
Research Station, Batlagundu 624 202, India.

DICHOCROCIS PUNCTIFERALIS Guen is a serious pest on cardamom in the Lower Pulneys of Tamilnadu causing about 60% damage¹ to pseudostem, panicle, immature capsules and unopened leaf buds. Information on the larval parasites of *D. punctiferalis* is meagre except for a few reports of *Eriborou* (= *Diocetes*) *trochanterata* Morl, *Theronia inareolate*, *Bracon brevicornis*, *Apanteles* sp², *Micobracon hebetor* Say³ and *Palexorista parachrysops* (Bezzi)⁴. The present report is on *Friona* sp, a larval parasite of *D. punctiferalis*, hitherto not recorded.

The ichneumonid, *Friona* sp was observed to probe the pseudostem of cardamom affected by the shootborer, *D. punctiferalis* with its antennae. It made repeated walking on the pseudostem, stopped at a particular spot, tapped with antennae and then inserted its long ovipositor (measuring 7–9 mm long)

inside the pseudostem and remained motionless for 15 min. The spot at which the ovipositor was inserted had been opened wherein a motionless fourth instar larva of *D. punctiferalis* was found. Thirteen days after parasitization a white cocoon was formed near the cadavere and the adult parasite emerged after five days.

During a surveillance study, *Friona* sp was recorded in Thadiyankudissai, Thandigudi and Pachalur (Lower Pulneys), Meghamalai and Anamalai cardamom estates. Further studies are in progress to find out the potentiality of this parasite, host preference and biology.

The author thanks Dr Jonathan, Zoological Survey of India, Calcutta for identifying the parasite, Dr B. V. David, Director, Fredrick Institute of Plant Protection and Toxicology, Padappai for critical comments and Mr. P. K. Zachariah, Deputy Director (Research), Indian Cardamom Research Institute, Myladumpara for encouragement.

9 October 1986

1. Kumaresan, D., Regupathy, A., George, K. V., *J. Plant Crops*, 1978, 6, 85.
2. David, B. V., Narayanaswamy, P. S., Murugesan, M. *Indian Oil Seeds J.*, 1964, 8, 146.
3. Patel, R. K. and Gangrade, G. A., *Indian J. Agric. Sci.*, 1971, 41, 443.
4. Kalra, V. K., *FAO Plant Prot. Bull.*, 1984, 32, 30.

**WHITE CANE ROT—A NEW DISEASE OF
RAMIE**

D. P. SINGH

Ramie Research Station, Jute Agricultural Research
Institute, Sorbhog 781 317, India.

RAMIE (*Boehmeria nivea* L Gaud), a semi-perennial fibre crop, yields the strongest known vegetable fibre of great commercial importance. The crop yields usually four cuttings of canes per year starting from June to November at an interval of 40–45 days¹. White cane rot disease was first observed during the rainy season of 1985 at the Ramie Research Station. The symptoms of the disease appeared as necrotic, circular spots with concentric rings on the leaf lamina (figure 1). These spots later cover the whole leaf surface (figure 2). The symptoms on the canes