

stomata (Table I). In some giant stomata striations are also seen (Figs. 6, 12).

TABLE I

Name of the species	Size of normal stomata in μ	Size of giant stomata in μ
<i>Alstonia macrophylla</i> Wall	20 × 13	60 × 39
<i>Ichnocarpus frutescens</i> Br.	17 × 7	50 × 18
<i>Trachelospermum lucidum</i> K. Schum.	17 × 7	48 × 16
<i>Tabernacmontana divaricata</i> Br.	23 × 7	52 × 22
<i>Strophanthus wightianus</i> Wall	26 × 7	65 × 21
<i>Aganosma caryophyllata</i> G. Don.	30 × 17	65 × 34

It has been noticed that in *Aganosma caryophyllata* the normal stomata are larger as compared to the other taxa studied and here the giant stomata are twice as large whereas in *Alstonia macrophylla* giant stomata are three times larger in comparison to normal stomata thus there appears to be no correlation in size between the normal and giant

stomata and the ratio seems to vary from plant to plant.

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SHORT SCIENTIFIC NOTES

A.T.D.C. 12 Computer Program for the Estimation of Genetic Variability, Heritability and Interrelationships of Quantitative Characters in Crop Plants

The estimation of genetic variability; heritability and genetic correlations is of prime importance to the plant breeders and genetists for genetically improving the economic crop species. Though it is quickly needed for decision-making in selection programs the computation of this, through conventional desk calculators, is time consuming and cumbersome. Some quick method, however, is immediately needed.

The purpose of this note is to report a computer program which estimates the above-mentioned genetic parameters. The statistics described by Allard (1960), Burtons (1952) and Hayes *et al.* (1955) have been used in framing this program. Data obtained from a randomised block design with 25 varieties, 3 replications, and 8 characters have been utilized here and same may be read from a

punched tape. The computer output provides the following informations:

1. Analysis of variance table for each character.
2. Analysis of covariance table for each pair of characters.
3. Estimation of heritability, genetic advance at 5% intensity of selection, genotypic coefficient of variation, phenotypic coefficient of variation, environmental coefficient of variation and standard error of the mean and.
4. Estimates of genotypic, phenotypic and environmental correlation coefficients.

The program has been written in 4K Fortran for the Indian made T.D.C. 12 computer, and has already been used in obtaining the above-mentioned parameters in tomato. Further information concerning details of the program and instructions for its uses may be obtained from us.

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A New Leaf-Spot Disease of Groundnut from Mysore*

During the monsoon season (July-September 1973) an unusual leaf-spot disease was observed on groundnut crop (*Arachis hypogaea* L.) under cultivation at Gadag (District Dharwar, Mysore State) by one of the authors (R. R. M.). The infection spots on the leaves were small, sub-circular to irregular, mostly scattered, but few on blades also, dark-brown with clear margins. Critical examination of sections of such spots in the laboratory revealed the presence of a fungus with brownish acervuli, setae, and unicellular cylindrical hyaline, conidia, characteristic of the form-genus, *Colletotrichum* Cda. Sporulation was profuse on such infection spots. The spotting was observed both on young as well as mature leaves. The fungus morphology was: acervuli scattered, ovoid, dirty-brown to brownish, few per spots; setae short, rigid, septate (2-3), slightly broad at base, tapering and blunt at the apex, unevenly distributed in the acervulus, dark-brown, measure $22.8-38 \times 3.8-4.7 \mu$. Conidia abundant on host, hyaline, cylindrical with rounded ends, one-celled, measure $11.4-15.2 \times 3.8 \mu$.

The fungus on comparison agreed in all respects, of morphological characters and dimensions with *Colletotrichum gloeosporioides* Penz¹. A perusal of literature indicated that *C. gloeosporioides* Penz. is a new record on groundnut from India^{2,3}. Saksena *et al.* (1967) reported a blight disease of this crop incited by another species, viz., *Colletotrichum dematium* (Pers. ex Fr.) von Arx. from Kanpur (U.P.). The material is deposited in the Ajrekar Mycological Herbarium of M.A.C.S., Poona-4, under No. AMH. 1907.

Grateful thanks are offered to Prof. M. N. Kamat for helpful suggestions and to the Director for laboratory facilities.

M.A.C.S. Res. Institute, Poona-4 (India), October 17, 1973.	D. V. NARENDRA, V. G. RAO, R. R. MALLIKARJUNAIAH.
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* Contribution No. 486 from Department of Mycology and Plant Pathology, M.A.C.S., Poona.

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Record of *Chelonus formosanus* Sonan (Hymenoptera : Braconidae), a Parasite of *Spodoptera litura* (Fabricius) from Mysore State

The larvae of the tobacco caterpillar, *Spodoptera litura* (F), feed on a variety of plants and are very injurious to vegetable crops like *Amaranthus*, beet root, brinjal, cabbage, cowpea, sweet potato and tomato in Mysore State. The caterpillars are found in the field almost throughout the year on vegetable and other crops.

During the year 1972 the caterpillars were collected every month from brinjal, cabbage, peas and tomato plants grown around Bangalore and reared on the same host plants in the laboratory to obtain their probable natural enemies.

The larvae collected from July to December 1972 were found parasitised by the Braconid, *Chelonus formosanus* Sonan. The extent of parasitisation varied from 5 to 10%. Maximum number of larvae were parasitised during the month of September.

Chelonus formosanus was first described from Taiwan (Formosa) as an egg-larval parasite of *Prodenia litura* (Sonan, 1932). Patel *et al.* (1971) reared this parasite from the same host in Gujarat. The present reporting of *Chelonus formosanus* as a parasite of *Spodoptera litura* is the first record from Mysore State.

The author is grateful to the Director, Commonwealth Institute of Entomology, London, for identifying the parasite.

Univ. of Agricultural Sciences, Regional Research Station, Mandya, Mysore State, September 22, 1973.	P. S. RAI.
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