of dense inactive chromatin as compzred to arginine rich ones. We found that kinetin alters the composition of histones from lysine to arginine, which may be the probable cause for the increase in the endogenous RNA level. A simular alteration in histone composition was observed by Piesco and Alvarez[9] in the nuclei of pea root after kinetin application. Thus the altered composition of specific histones may represent the initial step in preparing the chromatin for high transcriptional activity.

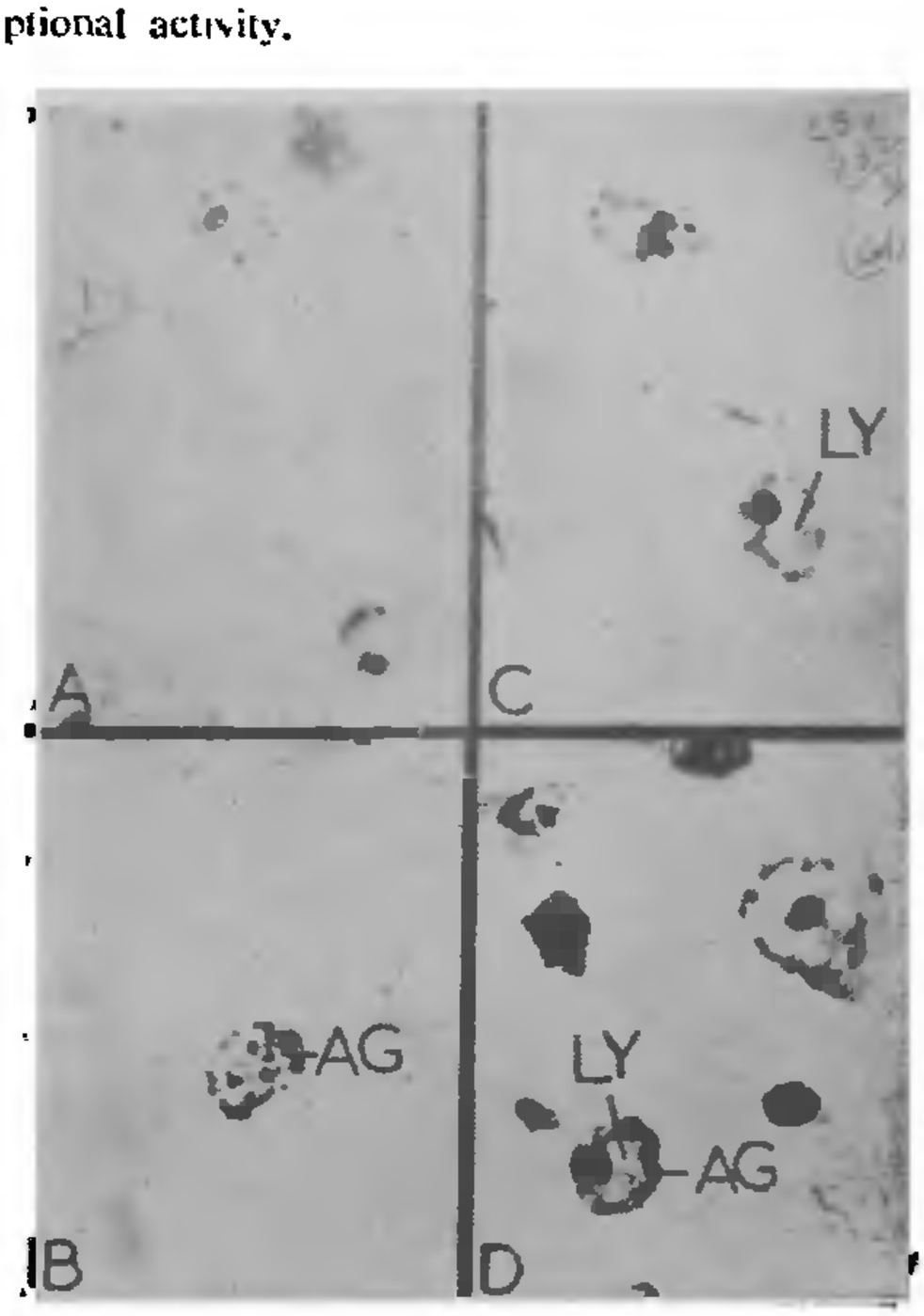

FIG. 1. A–D. Microphotographs of nuclei of control and kinetin treated cotyledons (× 800). Note higher content of lysine rich histones (Ly) in nuclei of control cotyledons incubated for 24 hours (A) and 48 hours (C). On the other hand nuclei of kinetin treated cotyledons show predominant localization of arginine rich histones (AG) at 24 hours (B) and 48 hours (D) of incubation.

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UTILITY OF UNMATED FEMALES OF *PERISIEROLA NEPHANTIDIS* MUESEBECK IN THE BIOLOGICAL CONTROL OF *NEPHANTIS SERINOPA* MEYRICK

Nephantis serinopa Meyrick is one of the serious pests of coconut[2] and is parasitized by a number of native parasites in the field[3,4]. *Perisierola nephantidis* Muesebeck was reported to exert check on the populations of Nephantis larvae[1]. Attempts are made to use this parasite in the control of *N. serinopa*[5] since control by conventional methods is unsatisfactory Mass production of *P. nephantidis* in the laboratory for inundative releases sometimes results in the production of females only. Studies were made on the utility of unmated females of *P. nephantidis* in the biological control of *N. serinopa* and the results are presented in this paper.

A culture of *P. nephantidis* was maintained, at room temperature, on the larvae of *N. serinopa*. The pupae were individually kept in glass tubes for emergence of adults. On emergence the virgin females were confined individually with larvae of *N. serinopa* and fed with honey drops on waxed paper. Similarly females with males at 1 : 1 ratio were confined with host larvae till all the females died. Observations on host mortality sex-ratio of the parasite and progeny production were recorded.

The results revealed that unmated females of *P. nephantidis* paralysed the host laravae as effectively as mated females and laid eggs on them. Mortality of host caused by mated and unmated females was 100%. The progenies produced by mated and unmated females differed widely (Table I). Unmated females produced only males as against both sexes produced by mated females. Both mated and unmated females had three reproductive cycles in their life-time, spread over 12 to 13 days, with four or five days intervals between cycles.

TABLE I

Progenies produced by mated and unmated females of P. nephantidis

No. Reproductive cycle	No. progeny/female*		Total
	Male	Female	
Mated			
female 3	3·6±0·31	7·4±0·32	11·0±0·34
Unmated			
female 3	13·8±0·45	Nil	13·8±0·45

* Mean of ten observations.
± 95% confidence limit.

The results suggest that unmated females can be used in biological control of *N. serinopa*.

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CONTRIBUTIONS TO THE CYTOLOGY OF THE MOLE CRICKET *GRYLLOTALPA AFRICANA*

CONSIDERABLE amount of work has been done on the chromosome morphology and behaviour of the mole cricket *Gryllotalpa hexadactyla*[1–3], *Gryllotalpa gryllotalpa*[4], *Gryllotalpa africana*[5–7], *Gryllotalpa himalayana*[8], and *Gryllotalpa fossor*[9]. However, metrical analysis, nature and distribution of heterochromatin have not been made. Therefore this project on *Gryllotalpa africana* was undertaken to fill the gaps in our knowledge.

The adult males of *Gryllotalpa africana* collected from the environs of Manasagangotri, Mysore (India) formed the material for the present investigations. The chromosome preparations were made from the testes by the colchicine-hypotonic-flame dry technique. The metrical analyses (L^R and I^c values) were calculated according to the method proposed by Levan *et al.*[10]. Heterochromatin studies were made according to Sumner's[11] technique with minor modifications.

The chromosome number is 23 (22A + X) in males (Fig. 1). There are 9 pairs of metacentric autosomes with the L^R values ranging from 101·03 to 31·18 and the I^c values varying from 44·98 to 37·83. The remaining 2 pairs of autosomes are submetacentric with the L^R values of 106·15 and 106·00 and I^c values of 32·80 and 34·23. The X-chromosome is also metacentric with L^R and I^c values of 168·75 and 47·46, respectively. It is the longest member of the complement which accounts for about 17% of the total haploid set. Out of the 2 pairs of submetacentric autosomes, one pair has distinctly stretched centromeres and they serve as the marker chromosomes. The metrical values are given in Table I and the idiogram has been constructed (Fig. 2). The single B-chromosome encountered appears to be metacentric and it belongs to the smallest metacentric autosomal series (Fig. 3). The application of C-heterochromatin technique has

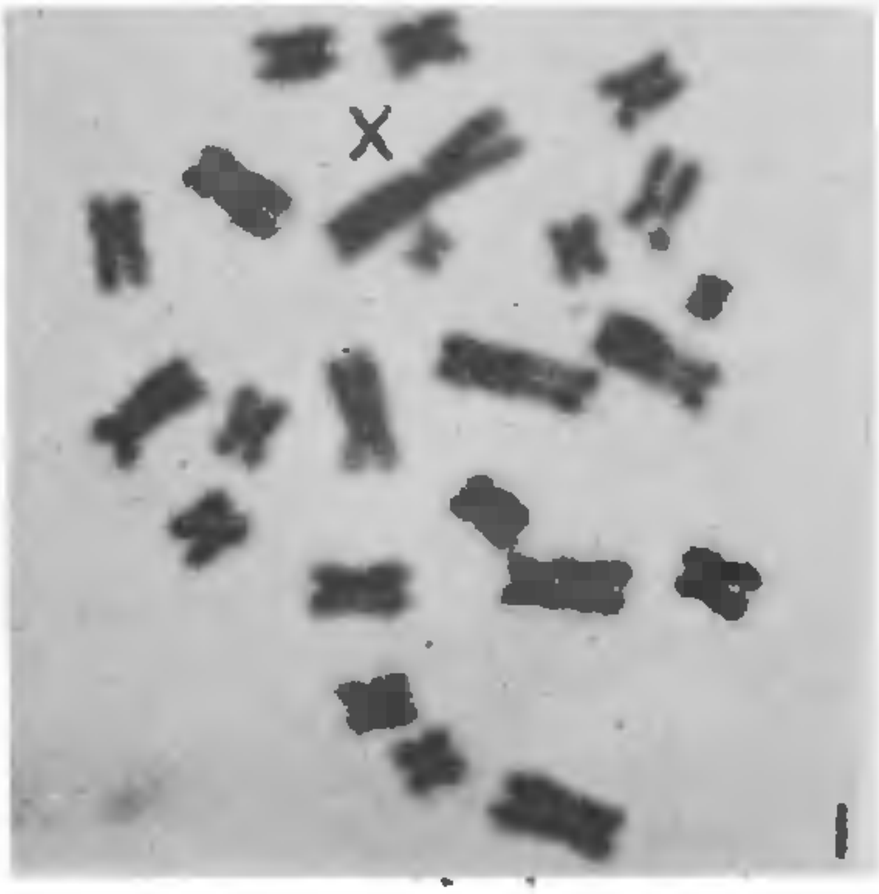

FIG. 1. Spermatogonial metaphase plate of *Gryllotalpa africana*.

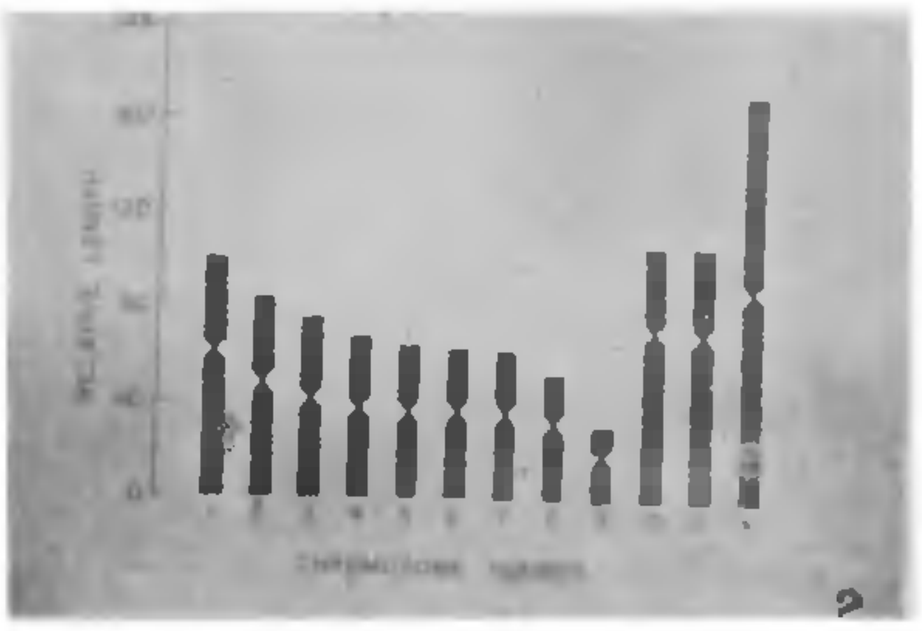

FIG. 2. Idiogram showing the relative lengths.