

Chingleput, Tamil Nadu. The earwigs enter the tunnels made by the early shoot borer and internode borer and both adults and nymphs feed on the borers.

Further studies on the biology and population fluctuations are in progress to determine the functional response of the predators to their borer prey and to evaluate their potential in the regulation of these pests.

Oriental Steel and Agro Chemicals,  
Corporation Shopping Complex,  
Alwarpet, Madras 600 018,  
and  
Parasite Breeding Centre,  
Madurantakam Cooperative  
Sugar Mills, Chingleput,  
Tamil Nadu,  
September 26, 1979.

B. N. RAMAMURTHI.

A. R. SOLAYAPPAN.

1. Buxton, J. H. and Madge, D. S., *Ent. Exp. Appl.*, 1976, 19, 109.
2. Bishara, I., *Soc. Roy. Entomol. d. Egypt Bull.*, 1934, 27, 288.
3. Ramamurthi, B. N., *Proc. Second All India Cong. of Zool.*, Part 2, 1962, p. 285.
4. Bushman, L. L., Whitcomb, W. H., Hammerway, R. C., Mays, D. L., Nguyen Ru, Lepper, N. C. and Smithe, B. J., *Environ. Entomol.*, 1977, 6, 403.
5. Price, J. P. and Shepard, M., *Ibid.*, 1977, 6, 679.
6. Terry, F. W., "Report of the Hawaiian Sugar Planters," *Exptl. Stn. Bull. I*, Part 5, 1905, p. 163.
7. Risbec, *Bull. Soc. Ent. France*, 1935, p. 31.
8. Hebard, M., *Mem. Dept. Agric. India Ent. Ser.*, 1923, 7, 195.

#### A NEW CHROMOSOME NUMBER FOR *FURCRAEA GIGANTEA* VENT.

*Furcraea gigantea* Vent., native of tropical America is closely allied to *Agave*. A few species of *Furcraea* have been introduced into India as garden plants. *F. gigantea* has attained importance as a source of commercial fibre, commonly known as Mauritius hemp<sup>1</sup>. *F. gigantea* is a large rosette plant with tough spiny leaves. It is monocarpic and dies as soon as it produces an inflorescence. Like *Agave* it is propagated by suckers. While making a detailed karyotype analysis of this species growing at the Ethnobotanical Garden of the Botany Field Research Laboratory of this centre it was observed to contain 34 chromosomes in root tip cells. A perusal of literature on the chromosome number for this species revealed that there are reports of  $2n=18$  and 60 only<sup>2</sup>. Hence the

number  $2n=34$  is reported as new to *Furcraea gigantea*. The detailed karyotype analysis is also presented.

Karyotype analysis was carried out from temporary squash preparations of root tips of bulbils. Root tips were fixed in 1:3 acetic acid-ethanol and stained in 2% acetic orcein and 1N HCl mixture (9:1). Those cells with well spread chromosomes were drawn for karyotype analysis.

The diploid complement shows 34 chromosomes ranging in length from  $1.32\ \mu\text{m}$  to  $6.67\ \mu\text{m}$ . Chromosomes in general show a wide range of size difference into 10 long, 14 medium and 10 short chromosomes (Fig. 1).

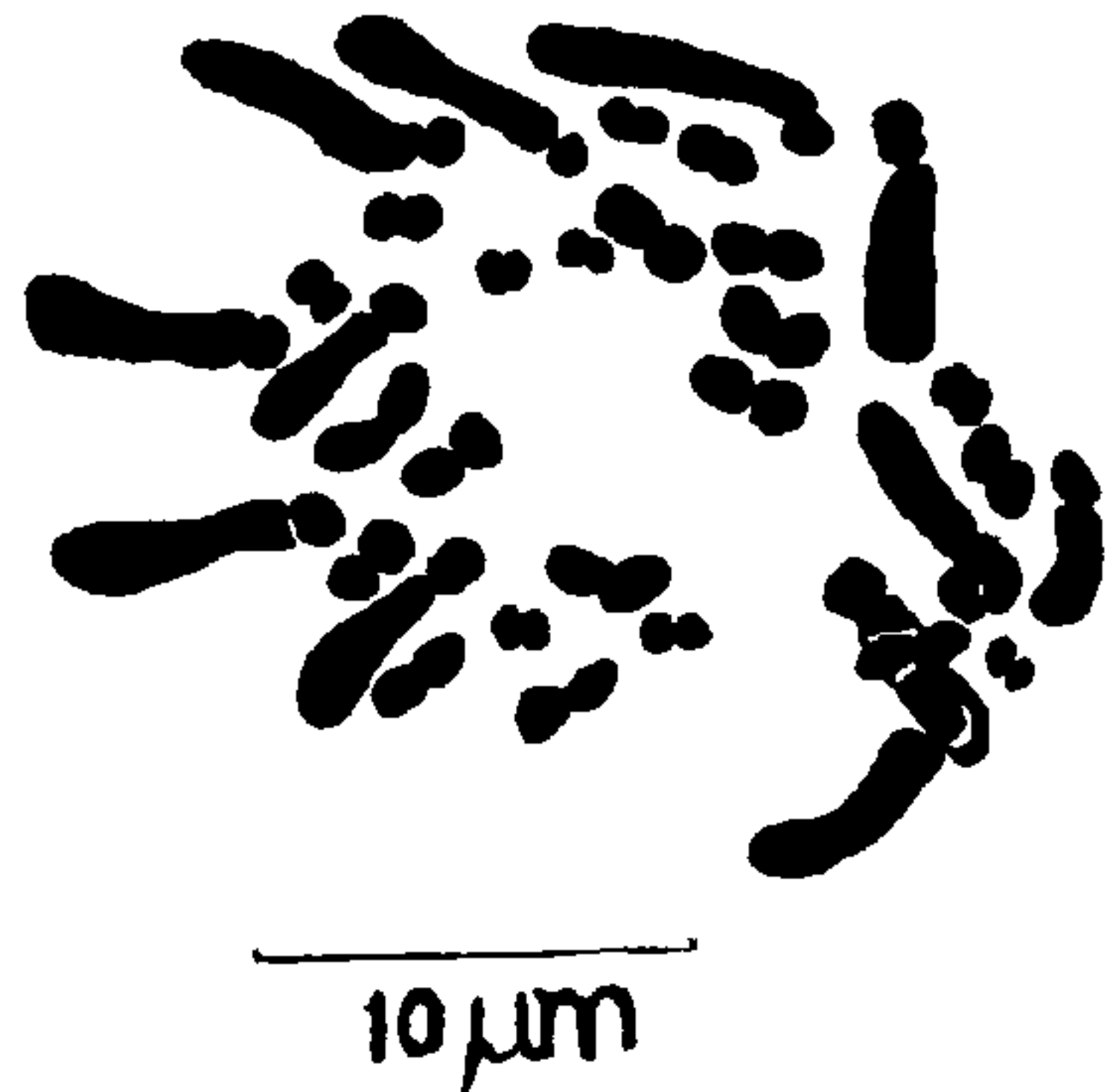


FIG. 1. *Furcraea gigantea* Vent. somatic chromosomes ( $2n=34$ ).

Depending upon the length of the chromosome as well as the arm ratio and centromeric index based on Levan *et al.*<sup>3</sup>, ten groupings have been made and the detailed observations on each type is presented in Table I.

The karyotype is asymmetrical as the chromosomes vary in length and possess centromeres in the terminal (*t*), subterminal (*st*), median (*m*) and in the median point (*M*). According to the classification of Stebbins<sup>4</sup>, the karyotype can be assigned to category 3C.

The somatic chromosome number of 34 reported here is not in conformity with the observation of Catalno<sup>5</sup> who had reported  $2n=18$ ; Whitaker<sup>6</sup>, Matsuura and Suto<sup>7</sup>, Sato<sup>8-10</sup> and Inariyama<sup>11</sup> had reported  $2n=60$ . Sato<sup>8</sup> observed 10 long chromosomes and 50 small chromosomes whereas we have seen 10 long chromosomes (types A, B, C and D), 14 medium chromosomes (types E, F, G and H) and 10 short chromosomes (types I and J) in all the cells and all the root tips examined. The aneuploid number of  $2n=34$  recorded here and that of  $2n=18$  recorded by Catalno<sup>5</sup>, presumably could have given rise to the basic number of  $n=30$  commonly seen in species of

TABLE I

Measurements of somatic chromosomes of *F. gigantea* at metaphase

Chromosome type	Chromosome number	Long arm (l) in $\mu\text{m}$	Short arm (s) in $\mu\text{m}$	Total length (c) in $\mu\text{m}$	Arm ratio (r)	Centromeric index (i)	Chromosome nomenclature
A	1-4	5.34	1.33	6.67	4.02	19.94	st
E	5, 6	5.67	0.67	6.34	8.32	10.57	t
C	7, 8	5.00	1.00	6.00	5.00	16.67	st
D	9, 10	5.00	0.67	5.67	7.46	11.82	t
E	11, 12	3.33	1.00	4.33	3.33	23.09	st
F	13, 14	1.67	1.67	3.34	1.00	50.00	M
G	15-20	1.33	1.33	2.66	1.00	50.00	M
H	21-24	1.33	1.00	2.33	1.33	42.91	m
I	25-28	0.83	0.83	1.66	1.00	50.00	M
J	29-34	0.66	0.66	1.32	1.00	50.00	M

$$c = l + s; r = l/s; i = 100 s/c.$$

*Furcraea*, by fragmentation of the long chromosomes and the medium chromosomes. The somatic chromosome number of  $2n=34$  reported here is new to the genus *Furcraea*.

We are thankful to Dr. E. K. Janaki Ammal, Emeritus Scientist, for her valuable suggestions, guidance and for going through the manuscript. We are grateful to Prof. A. Mahadevan, Director, for providing facilities.

Centre for Advanced  
Studies in Botany,  
University of Madras,  
Madras 600 005 (India),  
September 1, 1979.

Z. ABRAHAM.  
P. NAGENDRA PRASAD.

1. Anonymous, *The Wealth of India, IV*, C.S.I.R., New Delhi, 1956.
2. Fedorov, AN. A. (Ed.), *Chromosome Numbers of Flowering Plants*, Academy of Sciences of the U.S.S.R., V. L. Komorov Botanical Institute, Leningrad, 1969.
3. Levan, A., Fredga, K. and Sandberg, A. A., *Hereditas*, 1964, 52, 201.
4. Stebbins, G. L., *Chromosomal Evolution in Higher Plants*, Edward Arnold Ltd., London, 1971.
5. Catalano, G., *Lavori Inst. Bot. Palermo*, 1930, 1, 1.
6. Whitaker, T. W., *Jour. Arnold Arboretum*, 1934, 15, 135.
7. Matsuura, H. and Suto, T., *Jour. Fac. Sci. Hokkaido Imp. Univ., Ser. 5, Bot.* 5, 1935, 5, 33.

8. Sato, D., *Bot. Mag. (Tokyo)*, 1935, 49, 298.
9. —, *Cytologia*, 1938, 9, 203.
10. —, *Japanese Jour. Bot.*, 1942, 12, 57.
11. Inariyama, S., *Sci. Repts. Tokyo Univ., Sect. B*, 1937, 3, 95.

### GLIOCLADIUM AGRAWALII: A NEW KERATINOPHILIC MOLD

DURING a survey for Keratinophilic fungi and related dermatophytes from soils<sup>1</sup> one new mold was isolated from decomposing buffalo horn pieces from animal house floor sweepings and described here. On preliminary examination this showed keratinolytic activity when tested by a method of Agarwal and Kushwaha<sup>2</sup>

*Gliocladium agrawalii* sp. nov. (Fig. 1).

Coloniae albae, maturae zonis rubellis notatae. Mycelium ramosum, septatum. Conidiophori hyalini erecti, septati, interdum irregulariter ramosi, 15.2–178.44 × 1.4–284  $\mu$ , phialides 2–4, vulgo 3, in verticillis producentes graciles, hyalinas, 19.6–30.8  $\mu$  longas, ad basim 2.8–4.2  $\mu$  latas, apicibus acutis, Conidia elliptica in phialidum apicibus producta, hyalina, tenuiter tunicata, 2.8–7.0 × 1.4–2.8  $\mu$ , in capitulis globosis gelatinosis cumulata 8.4–22.0  $\mu$  diametro.

Colonies white, on maturity showed pink zones, mycelium branched irregularly 15.2–178.4  $\mu$ . Conidiophores give rise 2–4 phialides, generally 3 in verticillis, slender, hyaline, 19.6–30.8  $\mu$  long and 2.8–4.2  $\mu$  broad at the base with pointed tips. Conidia elliptical borne apically on the phialides, hyaline, thin-walled,