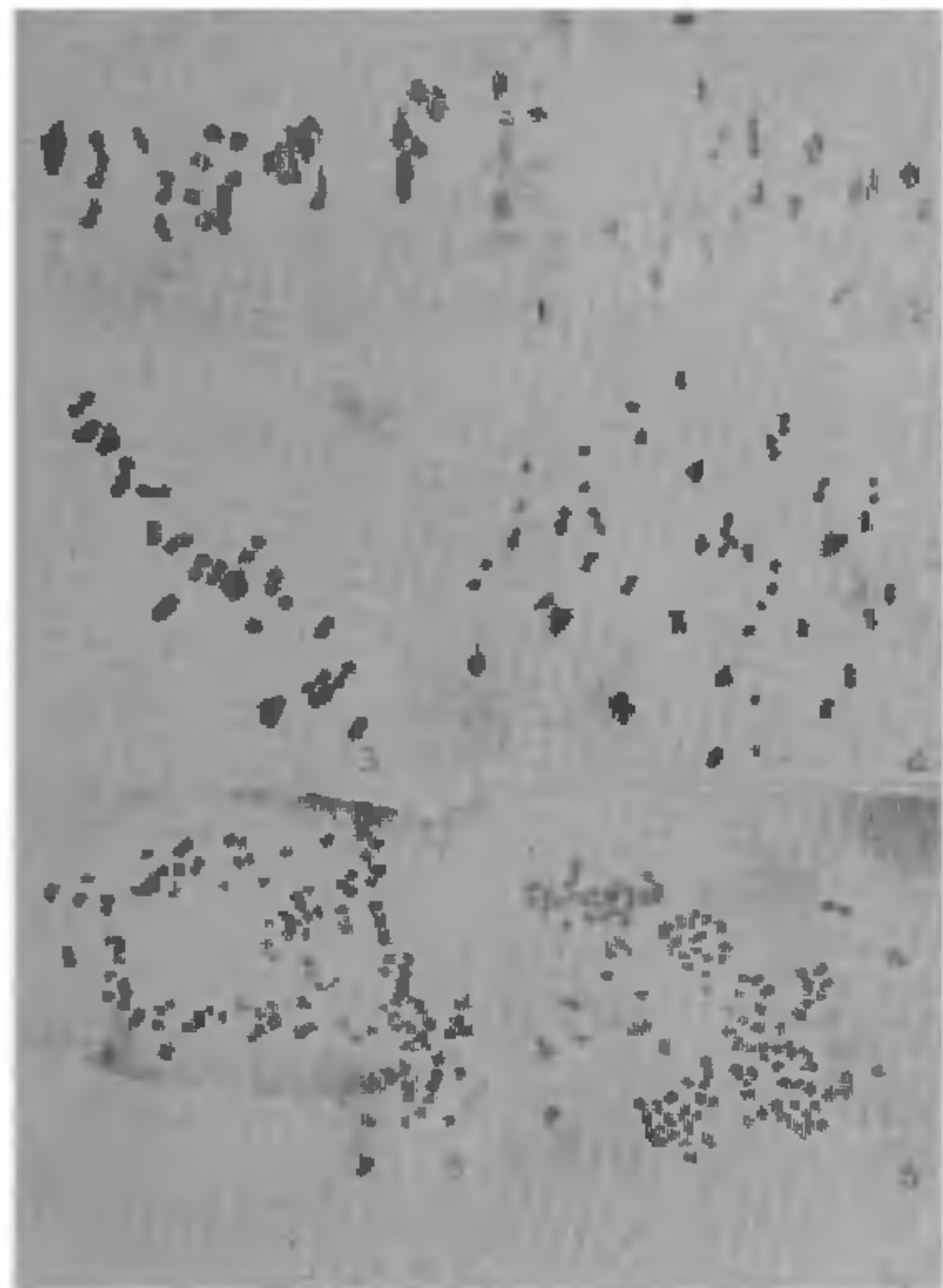


some number in *S. cylindrica* as reported by various authors is  $2n = 40, 92, 102-104, 120 \pm 1$  (Roy<sup>11</sup>, Sharma and Chaudhuri<sup>13</sup>, Heitz<sup>5</sup>, Menzel and Pate<sup>8</sup>), whereas present counts from root tip cells showed an aneuploid number  $2n = 112$  (Fig. 5). *S. powellii* is a hexaploid ( $2n = 120$ ) (Fig. 6).



FIGS. 1-4. Metaphase I. Figs. 1-3. 20 II in *S. intermedia*, *S. caulescens*, *S. pearsonii*. Fig. 4. 4 III + 33 II + 2 I in *S. canaliculata*. Figs. 5 and 6. Somatic cell in *S. cylindrica* and *S. powellii* showing 112 and 120 chromosomes respectively. (All figures,  $\times 1500$ ).

From the foregoing account it is clear that the genus is characterised by a basic number  $x = 20$  and most of the species are predominantly diploids, the other polyploids being either tetraploids and hexaploids or higher aneuploids.

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#### VIRAL WILT—A NEW DISEASE HITHERTO UNRECORDED ON COTTON

THE survey carried out during 1976-77 in cotton trials and germplasm in the fields of All India Coordinated Cotton Improvement Project at Parbhani and Nanded revealed an incidence of viral wilt on a few plants of H-5 (*Gossypium hirsutum* cv. G-67  $\times$  *G. hirsutum* cv. 289E) and Buri-1007 (*G. hirsutum*). The disease was characterized by transitory mild chlorosis in areas of major veins and veinlets preceding necrosis and blackening of the major veins and veinlets followed by phloem browning resulting into sudden wilting and collapse of the plants (Figs. 1, 2). The wilted plants did not recover and dried, crisp leaves, subsequently abscised denuding the branches. Stems dried up progressively from top to root. Though the roots were evidently healthy, rootlets were often found killed. Though phloem browning was marked, no discoloration of xylem was evident. Repeated isolations from infected plants did not yield any fungus or bacterial organisms. The present paper reports the viral etiology on the basis of transmission studies for the cotton wilt disease.

The results on bud-graft transmission indicated that out of the 10 inoculated plants, 8 of H-5 and 6 of Buri-1007 displayed the characteristic symptoms of the disease after 2-3 months. However, the disease pathogen was not transmissible by conventional leaf rub method using carborundum (800 mesh) as an abrasive with sap from infected tissue extracted in a cold neutral 0.05 M phosphate buffer containing either 2-mercaptoethanol (0.02M) or DIECA (0.01M) or  $\text{Na}_2\text{SO}_4$  (0.1%).

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Insect transmission, using aphids (*Aphis gossypii* Glover) and whiteflies (*Bemisia tabaci* Gen.) and carried out as per the procedures described earlier<sup>4, 6</sup> indicated that the disease *per se* was not transmitted either by aphid or whitefly and these insects were not the vector of the disease.

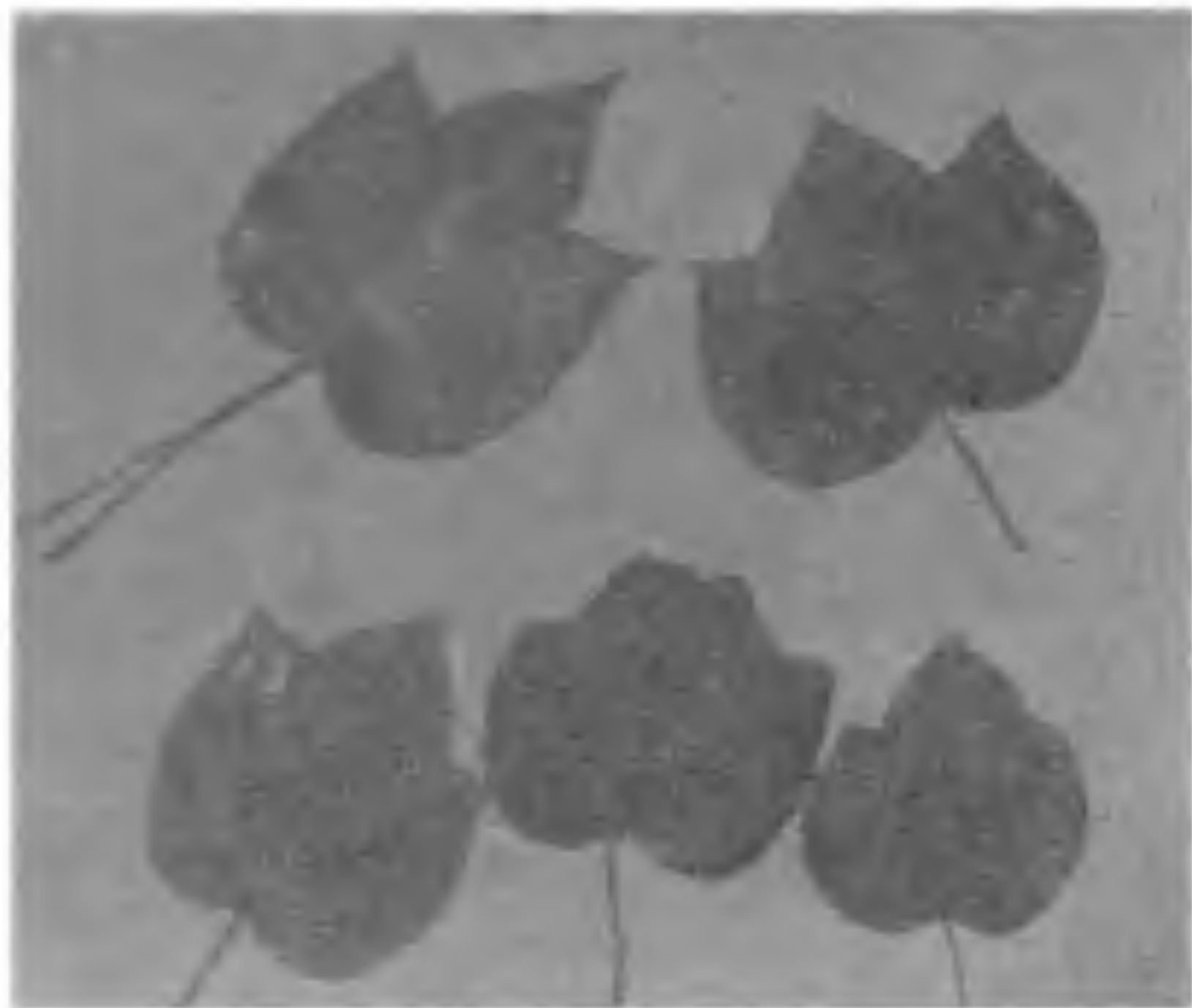


FIG. 1. Leaves of H-5 cotton displaying the symptoms of chlorosis of areas near major veins and veinlets and veinal necrosis.



FIG. 2. A branch of H-5 cotton plant displaying the symptoms of sudden wilting. Note also veinal necrosis and blackening.

The present virus disease differs from other virus diseases<sup>4-6</sup> in symptomatology and insect transmission. The present virus disease differs from cotton leaf curl and mosaic (Bink,<sup>1</sup> El-Nur and Abu-Alih<sup>3</sup>). Moreover, the present disease also differs from tobacco streak (Costa<sup>2</sup>), tobacco ringspot (Rush<sup>8</sup>) and tomato ringspot (McLean<sup>7</sup>) virus infections of cotton in symptomatology and in mechanical transmission. Therefore, the present viral wilt seems to be a new disease hitherto unrecorded on cotton.

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#### A NEW BASE NUMBER FOR THE GENUS *BUNIUM* L.

TRIBE Apieae of Umbelliferae, to which *Bunium* belongs comprises of about 76 genera, 24 of which are polybasic and 52 monobasic. *Bunium* falls in the former category because the six counts known for the three species of this genus are multiple of two basic numbers—10 and 11. *B. persicum* is, however, known to be monobasic, having  $n = 11^2$ .

During a survey aimed to assess genetic diversity among Himalayan umbellifers, the authors scanned three populations of *B. persicum*, all individuals of which uniformly carried a diploid count of 14 (Fig. 1).

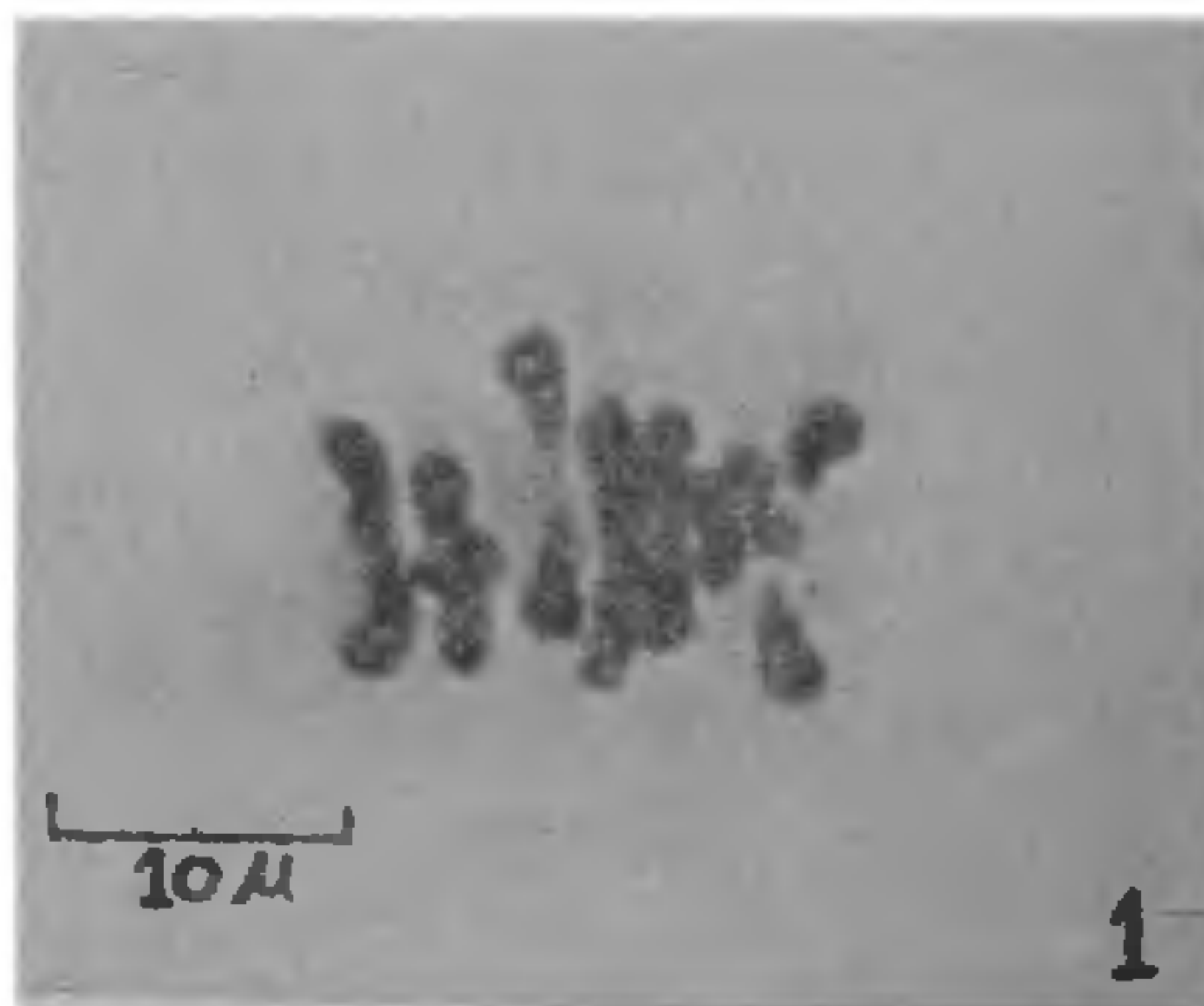


FIG. 1. Metaphase I of P.M.C. meiosis showing 7II lined at the equatorial plate,  $\times 2,333$ .