Department of Plant Pathology, College of Agriculture, Dharwad for confirming the identity of the fungus.

12 September 1985; Revised 18 November 1985

1. Joshi, S. and Mahadevappa, M., *Cassia sericea*, Sw. (Personal communication)

MONO-TRISOMIC IN *COIX GIGANTEA* (POACEAE)

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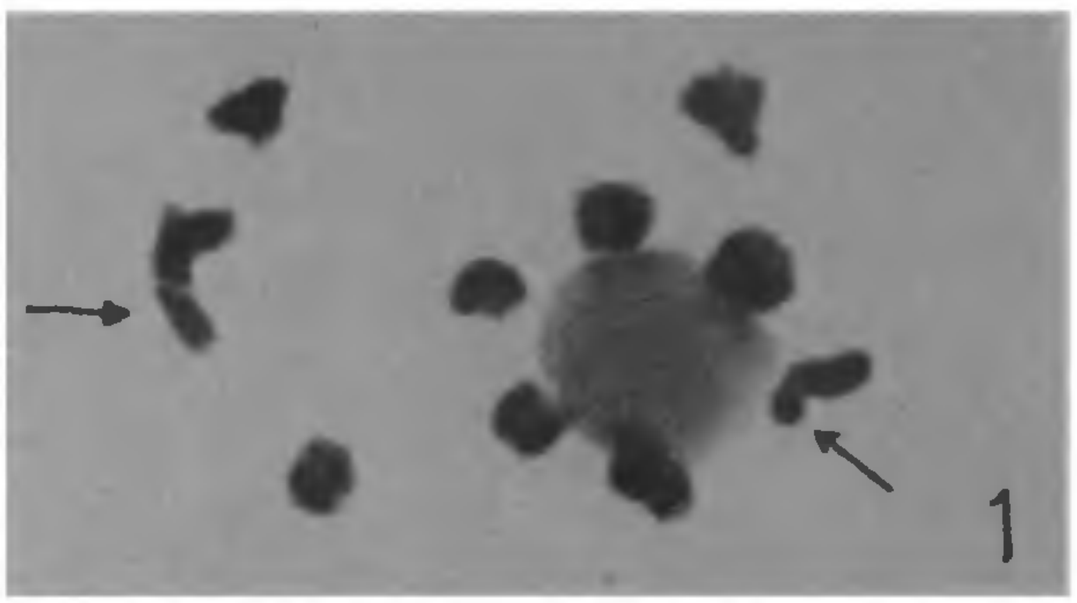
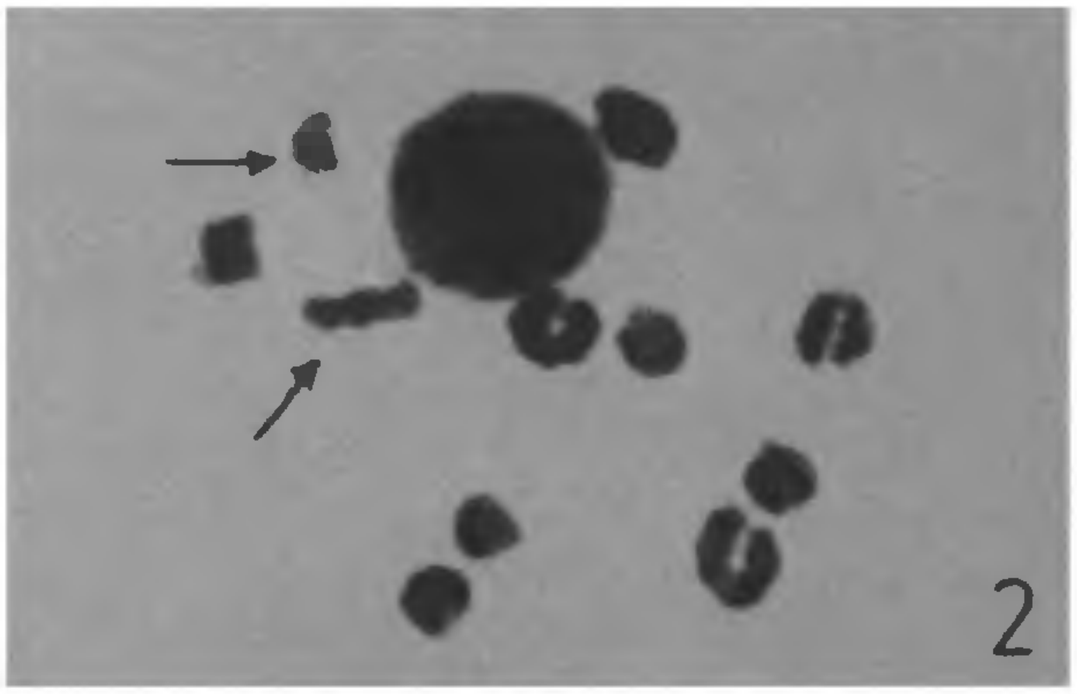
SEVERAL kinds of aneuploids have been reported since they were first reported in plants[1-3]. Khush[4] defined 32 different type of aneuploid constitutions considering the addition or deletion of regular chromosome(s), isochromosome(s), telochromosome(s) or interchanged chromosome to the disomic complement. Recently two more polysomic constitutions, pentasomy ($2n + 3$) and hexasomy ($2n + 4$), in *Coix gigantea*[5,6] and a tetratrisomic ($2n + 2 + 1$) in *Pennisetum americanum*[7] have been added to the above list. A new two-in-one aneuploid constitution, mono-trisomic, in *Coix gigantea* is presented here.

Seeds of *Coix gigantea* Koen ex Roxb were collected from the Purandar Fort and a population of this species is being maintained at the Botanical Garden of the Marathwada University for the past ten years. Some of the diploid plants ($2n = 20$) that showed meiotic nondisjunction[8] and a few irregularities in the chromosome segregation[9] were selfed by bagging the whole plants with muslin cloth before the onset of flowering with a view to obtaining aneuploids. Selfed seed progeny, raised in the following year, comprised about 200 plants each of which was separately studied cytologically by the routine aceto-carmine (1%) squash technique. Among several types of aneuploids recorded in this progeny, one plant that showed mono-trisomic constitution is reported in this communication for the first time. In this mono-trisomic plant ($2n = 20$), as is expected, a large univalent and a small trivalent was noted at diakinesis (figure 1) in quite a few PMCs. However, as is common among trisomics, the extra chromosome was also left out as a univalent (figure 2), there being strong competition for pairing





Figures 1, 2. Typical chromosomal associations in the mono-trisomic of *C. gigantea*. **1.** Diakinesis showing 8II + I + III. **2.** Diakinesis showing 9II + I + I. (arrows indicate trivalent and univalents, × 2, 400).

and chiasmata between the three homologues, and more so in the present plant because the chromosome involved in the trivalent formation is smaller in size.

Monosomics and trisomics, involving different members of the genomic complement one-by-one, have been reported in *Datura*, *Nicotiana*, *Hordeum*, *Triticum* etc[4]. However, complex aneuploids involving different chromosomes at a time on the plus and/or minus side of disomics, as has been reported in *P. americanum* ($2n + 2 + 1$)[7] and in the present note ($2n - 1 + 1$), seem to be rare situations. It is well known that aneuploidy leads to severe cytogenetical, biochemical and hence physiological imbalance seriously affecting the health, survival and reproduction in aneuploids. The mono-trisomic of *C. gigantea*, however, is normal and highly fertile. Further study on its progeny is in progress.

One of the authors (SSB) thanks CSIR, New Delhi for a fellowship.

24 December 1985; Revised 5 February 1986

1. Gates, R. R., *Bot. Gaz.*, 1909, **48**, 179.

2. Lutz, A. M., *Science*, 1909, **29,** 263.
3. Blakeslee, A. F., *Genetics*, 1921, **6,** 241.
4. Khush, G. S., *Cytogenetics of aneuploids*, Academic Press, New York, 1973.
5. Sapre, A. B. and Barve, S. S., *Curr. Sci.*, 1983, **52,** 614.
6. Sapre, A. B. and Barve, S. S., *Genetica*, 1985, **66,** 73.
7. Sai Kumar, R., Singh, U. P., Singh, R. B. and Singh, R. M., *Curr. Sci.*, 1982, **51,** 376.
8. Sapre, A. B. and Barve, S. S., *J. Hered.*, 1985, **76,** 387.
9. Mashalkar, S. G., *Cytological studies in the tribe Maydeae: Studies in the aneuploids of Coix gigantea.* Ph.D. Thesis, Marathwada University, Aurangabad (India) 1983

THREE NEW RECORDS OF FOLIOSE LICHENS FROM NAGALAND (INDIA)

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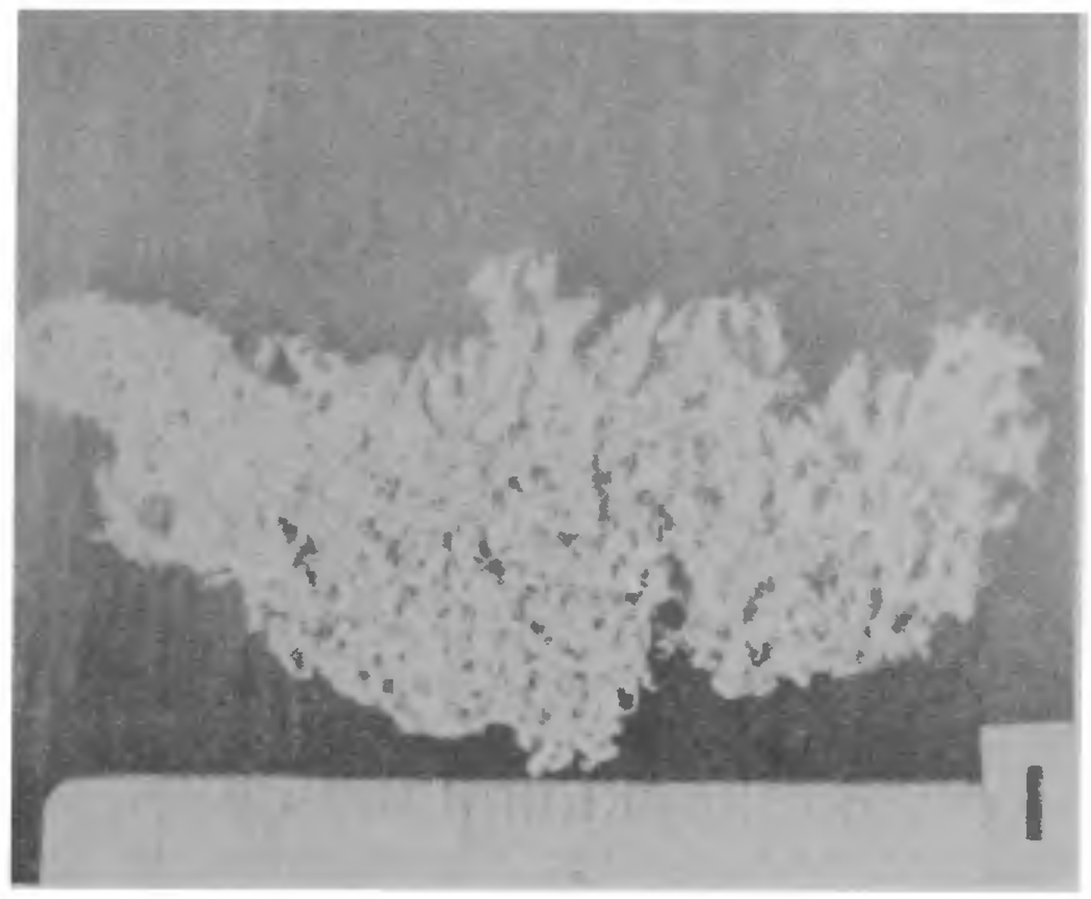
NORTH-EAST India has a rich flora of all groups and several lichen taxa have already been reported[1–4]. During the studies on the lichens of Nagaland, three more species—*Heterodermia hypochraea: Parmelia pseudocrinita* and *Parmelia subcoronata* have been discovered as new records for India, and are described briefly to facilitate their identification. The chemical aspect of these species was studied by TLC methods[5]. The specimens examined are deposited in the Kanjilal herbarium (ASSAM) at Shillong.

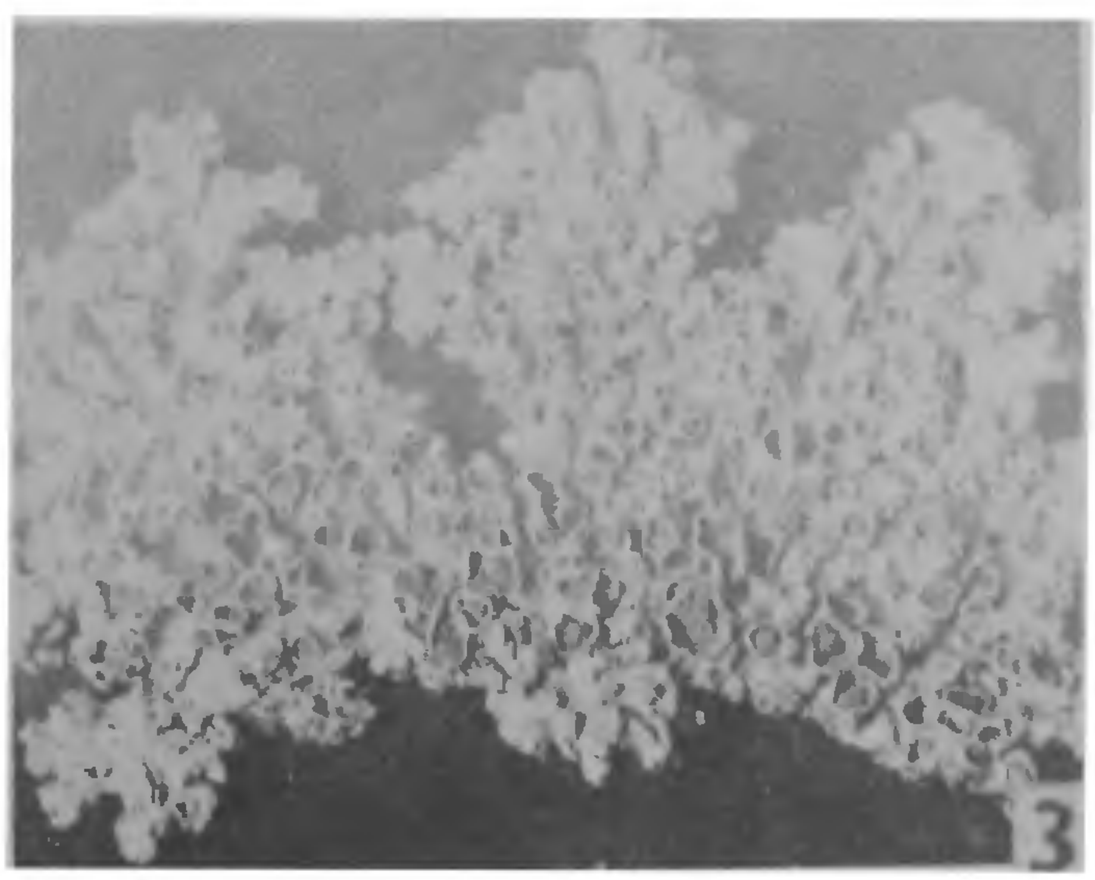
Heterodermia hypochraea (Vain.) Swinsc. & Krog, Lichenologist, 8:119. 1976 (figure 1).

Thallus corticolous, laciniate, suberect, whitish grey; laciniae up to 2 mm wide; upper surface verruculose, convex; soredia and isidia absent; lower surface decorticated, ochraceous; rhizinae marginal, simple to branched; apothecia lacking. Medulla K+ yellow to reddish; C—; KC—; P+ yellow; lower surface K+ purple; atranorin, zeorin and two undetermined substances present.

H. hypochraea known from Japan, South America and East Africa is characterized by suberect rosette thallus with ochraceous lower surface which is K+ purple.

Specimens examined: Nagaland, Kiphire-3 km towards Pungroo road, Sinha, N. 1084.





Figures 1–3. 1. *Heterodermia hypochraea* showing portion of thallus, (× 1.2). **2.** *Parmelia pseudocrinita* showing portion of thallus, (× 0.9). **3.** *P. subcoronata* showing portion of thallus (× 0.8).