vigorous as those raised on medium with AR grade sucrose. Attempts to transplant them are in progress.

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POLYPLOIDY IN *ROTTBOELLIA EXALTATA* LINN. COMPLEX

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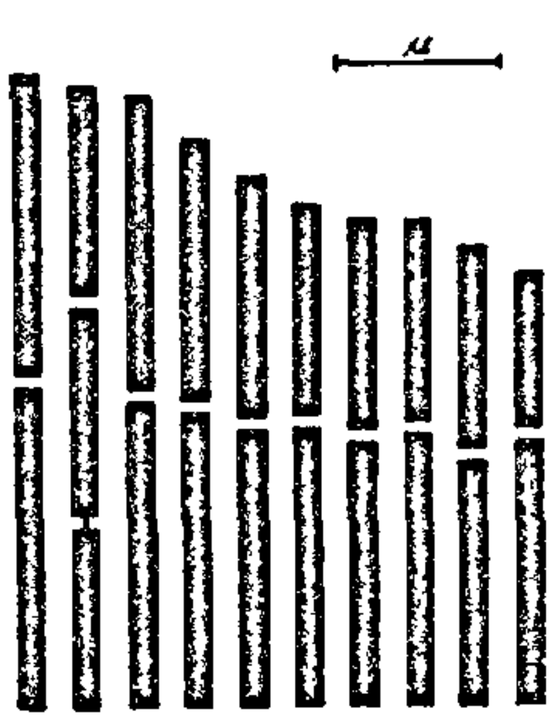
THE genus *Rottboellia* consists of about 30 species which are annual or perennial grasses, distributed in the tropical and sub-tropical regions of the world, of which only one species, *R. exaltata* Linn. occurs commonly in India[1,2]. The vegetative characters such as plant height and length and breadth of leaf are highly variable in this species, and all taxonomists have recognised two varieties, a "short" variety (1–3 ft) and a "tall robust" one (1–12 ft). Several chromosome numbers are reported[3] for this species such as $2n = 20$, 36, 40 and 60. It is not known whether these reports pertain specifically to the "short" morphotype or "tall" morphotype. In the present study detailed karyomorphological studies of both the varieties have been made to find out if there is any chromosomal difference between the two morphotypes.

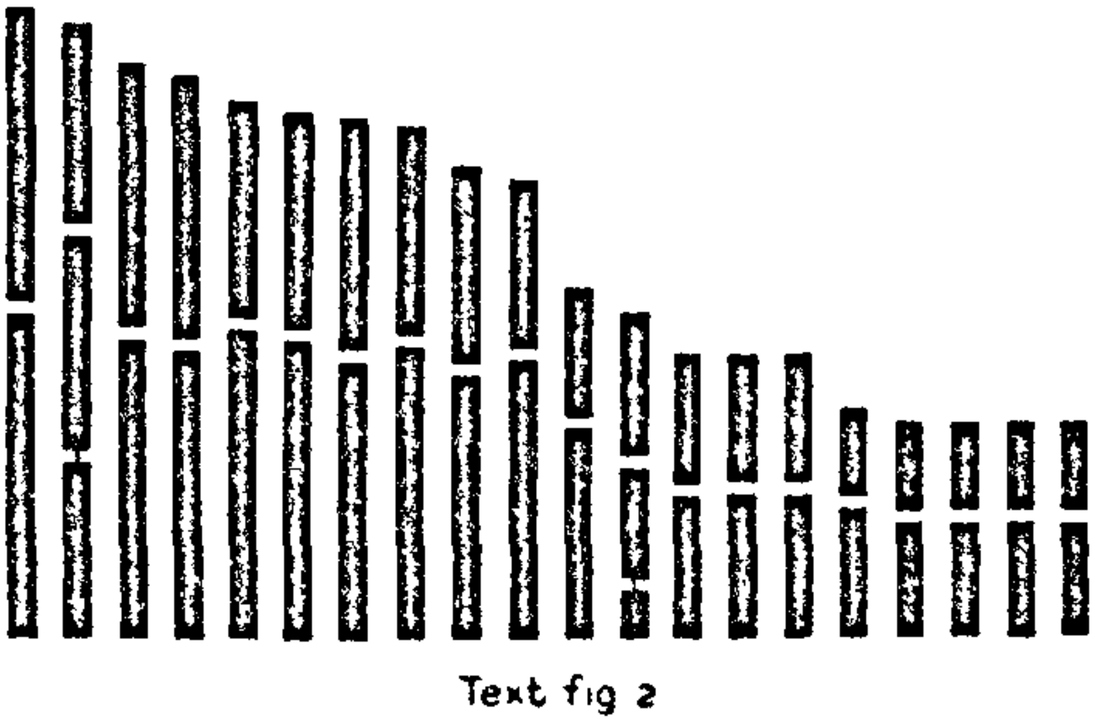
Materials of the species were collected from different localities of Kerala State such as Trivandrum, Kallikkad, Quilon, Kottayam, etc. Chromosome studies were made from PMCs and root tip cells fixed in 1:3 acetic alcohol and stained in aceto-carmine.

The "short" variety showed $2n = 20$ chromosomes which ranged in length from 2.66–3.91 μ. The karyotype analysis[4] showed 9 pairs of m-type and one pair of sm-type of chromosomes and it comes under 1A category[5]. The second pair possesses secondary constriction in the long arm (figure 1). The "tall" variety however showed $2n = 40$ chromosomes ranging from 1.33–3.97 μ in length. The karyotype consists of 19 pairs of m-type and one pair of sm-type and belongs to the category 2B. The second and the 12th pair possess secondary constrictions in the long arm (figure 2).

Ten chromosomes (1–10) of the "tall" variety are found to be almost similar in size and morphology to the 10 chromosomes of the "short" variety, and the remaining 10 chromosomes (11–20) of the "tall" variety are distinctly smaller and their counterparts are not found in the short variety. The tall variety showed 10 large and 10 small bivalents at diakinesis,



Text fig.1


Text fig 2

Figures 1, 2. 1. Idiogram of *Rottboellia exaltata* ($2n = 20$). **2.** Idiogram of *R. exaltata* ($2n = 40$).

the large bivalents being similar in size to the 10 bivalents of the short variety. Both taxa showed perfectly normal meiosis characterized by regular bivalent formation, anaphase separation and formation of normal tetrads. The pollen grains of the tall variety were slightly larger in size. The cytological evidence thus indicates that the tetraploid tall robust taxon is a natural allopolyploid, in the formation of which the diploid short variety could be one of the putative parents. In South India this species exists as a "compilospecies[6]" in which the diploid form is very restricted and the tetraploid widespread in distribution.

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A NEW SPECIES OF *HYPODERMELLA* FROM MAHARASHTRA

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IN the survey of ascomycetes fungi from the State of Maharashtra dead leaves of *Thuja occidentalis* L were collected from Kamalpur, Chandrapur district forest showing many carbonaceous elongated fruiting bodies with a central longitudinal slit characteristic of Phacediales. Section through these bodies revealed the presence of stromatic cup-shaped hysterothecia with parallel asci intermingled with swollen tipped paraphyses. On the basis of structure and ascospore characters, with the available literature, the fungus was concluded to be a species of *Hypodermella* Tubeu[1].

Two species of this genus were recorded from all over the world[2]. Only one record of this genus is known from India[3].

This interesting but rare fungus has been designated as *H. occidentalae* sp nov. A comparison of the present material and *H. rhamni* is given in table 1.

Table 1 *Comparative table of Indian species of Hypodermella Tubeu.*

Species	Hysterothecia	Asci	Ascospores
1. *H. occidentalae* sp. nov.	200–300 × 162–260 μ	140–170 × 22–26 μ	30–52 × 8.6–11.5 μ
2. *H. rhamni* Ramkr.	—	174–230 × 26–37 μ	56–81 × 11–15 μ

From the above data the present collection differs in respect of morphological characters having bigger asci and ascospores and collected on a hitherto unrecorded host, it is, therefore, offered as a new species.

H. occidentalae sp. nov. (figure 1)

Hysterothecia subhypodermal, minute, black, elongated, elliptic oval, opening by longitudinal cleft. Margins reddish wall membraneous, dark brown, pseudoparenchymatous, measuring 200–300 × 162–260 μ. Asci clavate bitunicate, wall thickened at the opex, shortly stalked at the base, 8 spored surrounded by halo loke area, internally halo resembling a membraneous covering, bitunicate, 140–170 × 22–66 μ, paraphyses unbranched, filamentous with swollen tips, usually longer than the asci but not forming epithecium. Ascospores hyaline, elongated, biocelled, irregularly arranged, slightly curved at the tips, measuring 30–52 × 8.5–11.5 μ. On leaves of *T. occidentalis* L. Kamalpur (district chandrapur), October 1981, leg. Wangikar and deposited in the Maulana Azad College herbarium MAH No. 1198 (Holotype).

The ascospores were allowed to germinate in sterile water. They germinated within 24 hr in water with swelling in size, giving out a stout germtube, thus providing their non resisting nature.

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