

characters can be used to detect and estimate apomixis. But both characters have their own advantages and disadvantages. With the tan plant character, one has to grow the plants for making a progeny test. In the case of shrivelled-seed character, apomixis frequency can be estimated from the crossed seed itself. However, shrivelled seeded lines are useless as breeding lines, while tan plants lines are much more desirable than purple plants. Further, earhead diseases result in improperly filled grains simulating the shrivelled character. It is therefore suggested that tan plant character is used in estimations of apomixis in breeding experiments and the shrivelled grain character in quick estimations in basic studies aimed at achieving obligate apomixis.

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A SPONTANEOUS MUTANT WITH THREE-STYLE PISTILS IN *AVENA SATIVA* L.

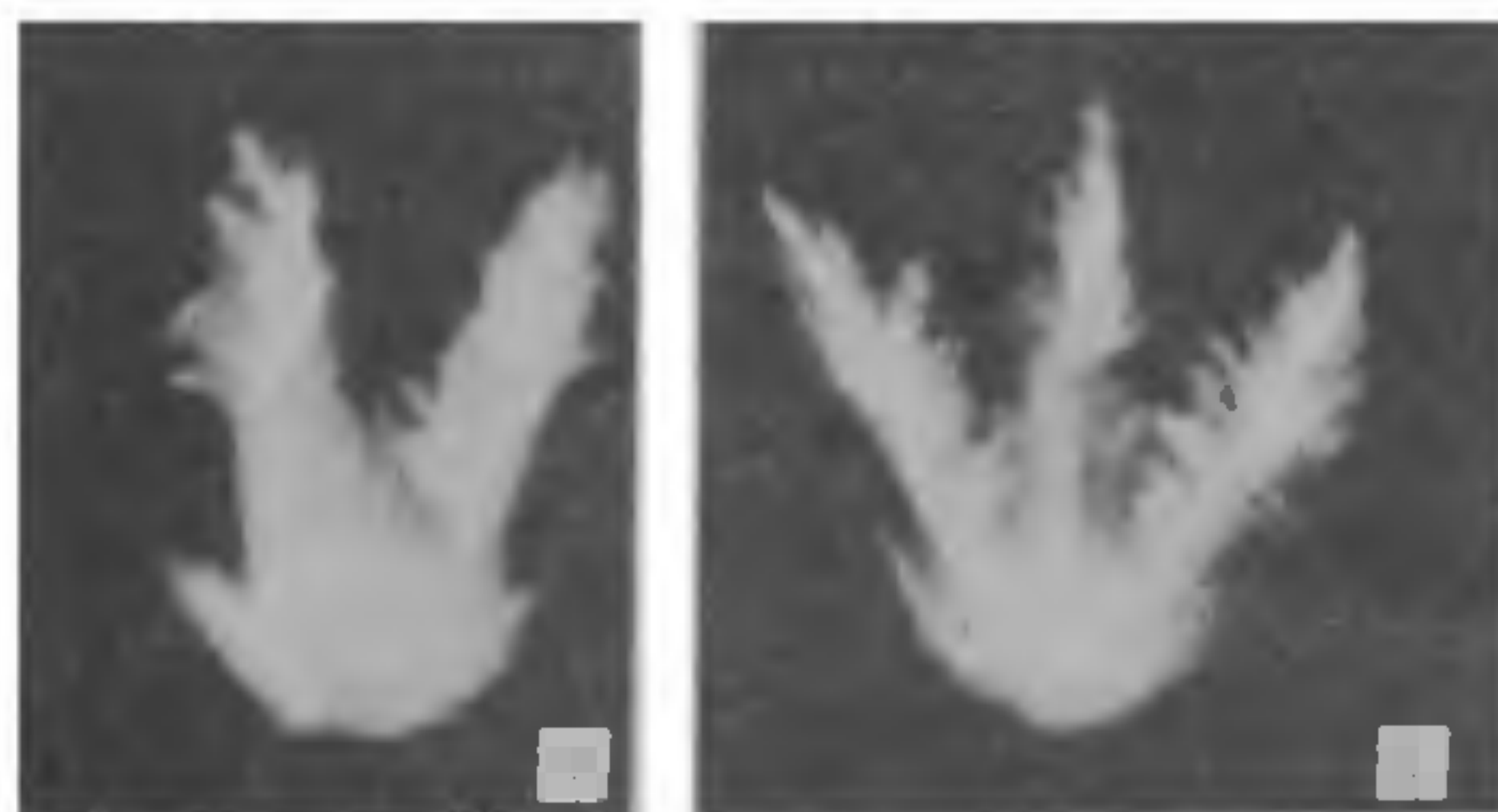
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THE grasses are characterized with pistil consisting of a one-loculate ovary having a single ovule and usually two styles bearing feathery stigmas¹. Robbins² pointed out that in all grasses the pistil contains three fibrovascular bundles, with two extending into stilar branches and the third continuing into either the dorsal lobe or a stilar branch. In the genus *Avena*, the ovary invariably at its apex, bears two whitish feathery stigmas on very short styles (figure 1).

While emasculating the florets of various *Avena sativa* L. genotypes raised in the 1981–1982 crossing block at this Institute, the florets of one plant of the strain 'OS-8' were found to possess three styles. The progeny of this plant was raised during *rabi* 1982–'83 along with normal parental line. No differences in the morphological plant attributes and flowering time were found. However, all the plants in the progeny of the mutant were found to possess three styles and stigmas in many florets (figure 2). Cytological observations on pollen mother cells of these plants exhibited normal meiosis with 21 bivalents at metaphase I.

It was found that 111 out of the 316 mature florets from 17 panicles taken at random possessed three styles. Since all the plants in the progeny were characterised by the presence of such florets, the penetrance of the three-style pistil character appeared to be complete. However, the expressivity of this trait varied from 12.5–60% with an average value of



Figures 1 & 2. 1. Pistil of normal *A. sativa* with two styles. 2. Pistil of the spontaneous mutant with three styles.

35.13%. The caryopsis developed from the ovaries with two or three styles did not differ in size, shape and other morphological traits.

Hubbard³ listed a comparison of presumed primitive and advanced grass spikelet characters. The primitive types were supposed to have pistils with three styles and stigmas while in advanced ones only two (rarely one) stigmas are observed. Hutchinson⁴ observed that the tribe *Avenae* still retains certain primitive features such as several flowered spikelets and five to many nerved lemmas. The spontaneous occurrence of the *A. sativa* mutant having pistils with three styles strengthens the view that the primitive types of this genus were characterised by three styles and stigmas on a three-carpel ovary.

Studies on the nature of inheritance of the three-style pistil character are in progress. It is expected that this harmless spontaneous mutant would serve as a genetic marker.

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AN UNIQUE CASE OF MONOZYGOTIC SYNCHORIAL TWINS IN THE INDIAN LANGUR MONKEY, *PRESBYTIS ENTELLUS ENTELLUS* (DUFRESNE)

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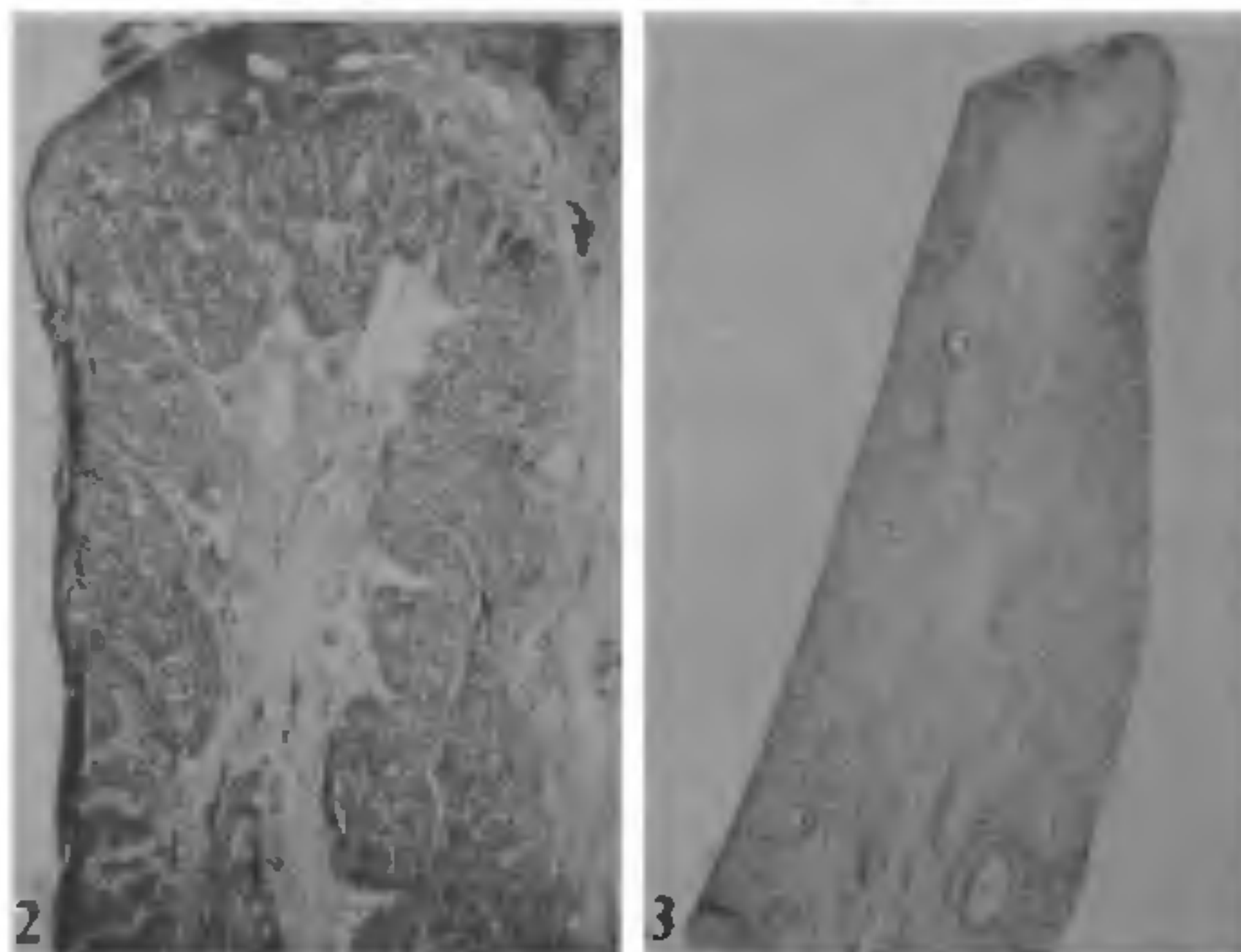
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EXCEPT among the marmosets¹⁻³, twinning is not a normal phenomenon among non-human primates. Several instances of twin births or twin embryos have been reported as exceptions in a few Old World monkeys³⁻⁶. However, in none of the cases so far described has it been incontrovertibly shown that the twins are monozygotic, although secondarily a fusion

of the two chorionic sacs of fraternal twins may result in synchorial twins³.

To our best the present report is the first to demonstrate a case of unquestionable monozygotic synchorial twins in the Indian langur.

Female specimens (36) of langur were collected around Nagpur during different months of the year 1980-81. Among these, 14 were pregnant, six of which were at full term. One of the full-term pregnant monkeys had nearly full term twin foetuses in the uterus (figure 1). The uterus measured 26.4 cm in the



Figures 1-3. 1. Uterus cut open to show twins attached by their umbilical cords to the primary placental disc. $\times \frac{1}{4}$. 2. Section of the right ovary to show a large lobulated corpus luteum. $\times 16$. 3. Section of the left ovary showing a few developing follicles. $\times 10$.