

FIGS. 1-4. *In vitro* culture of embryonal axis of *Clitoria ternatea*. Fig. 1. Axis after four days' growth. The root and the hypocotyl have elongated. Fig. 2. 6-day-old axis. Note the bending of the hypocotyl. Fig. 3. 15-day culture of hypocotyl devoid of apical bud. Note initiation of adventive roots at the base. Fig. 4. 25-day-old culture of the axis. Note the developing epicotyl bud.

portion recalling the condition during natural germination. Even though there is no need for the cultured axes to 'pull out the cotyledons' the occurrence of curvature in the upper hypocotyl may be viewed as a gene-controlled phenomenon.

The course of growth of the axis is remarkably similar to the events of natural germination: 1. growth of root; 2. elongation of hypocotyl; 3. activation of shoot bud.

The results of this experimental study are comparable with the work on *Cajanus cajan* embryo segments (Kusum Kanta and Padmanabhan, 1964). It is evident from these experiments that embryonal organs are capable of independent development when isolated. However, the pattern and course of their development follow the same lines as in the entire embryo.

I am indebted to Prof. T. S. Sadasivan for facilities and encouragement.

University Botany Lab., D. PADMANABHAN.  
Chepauk, Madras-5 (India).  
October 28, 1965.

#### POLLEN MORPHOLOGY OF A NEW SPECIES OF *CUSCUTA*

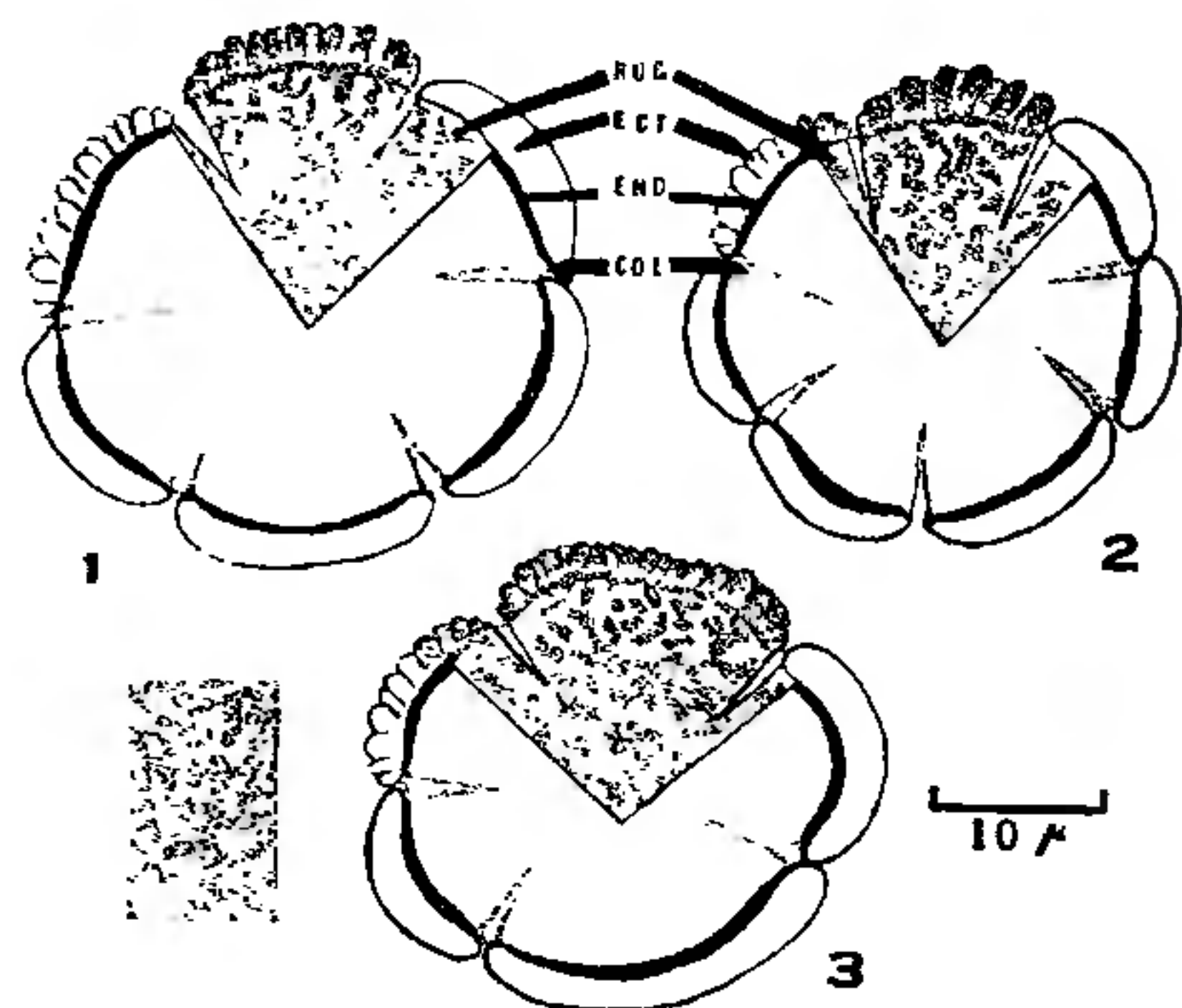
POLLEN morphology of a new species of *Cuscuta*, namely, *C. santapau* Banerji and Das<sup>1</sup> (in press) has been studied. Polliniferous material has been collected from Nepal and the pollen grains have been mounted in lactic acid.<sup>3-6</sup> Terminology used for pollen description is after those of Nair.<sup>4</sup> Pollen grains are 5-7-zonocolpate, spheroidal (equatorial diameter 30.4  $\mu$ ; range 28-32  $\mu$ ). Apocolpium diameter is 13.6  $\mu$ . Exine is 3.2  $\mu$  thick; ectine thicker than endine, surface rugulate.

We have examined the specimen sheets of Wallich and Hooker, that have been referred by Yuncker<sup>7</sup> to *C. reflexa* Roxb. Pollen grains from both the above materials have been found to measure 27.2  $\mu$  (range 24-29  $\mu$ ) and the exine surface to be rugulate. Nair and Rehman<sup>8</sup> give the pollen diameter in *C. reflexa* as 28  $\mu$ , and exine surface in the above and other Indian species, namely, *C. chinensis* and *C. planiflora* as reticulate. The exine in this new species—*C. santapau*—is comparatively thicker.

It is noted that interspecific pollen differences exist within the genus *Cuscuta*. Erdtman<sup>2</sup> recorded the colpi number as 3-4 in *C. lupuliformis* and 3 in *C. lupuliformis*, while Nair and

1. Nitsch, J. P., *Amer. J. Bot.*, 1951, 38, 566.  
2. Kusum Kanta and Padmanabhan, D., *Curr. Sci.*, 1964, 33, 704.

Rehman<sup>5</sup> found 3 colpi in *C. chinensis* and *planiflora*, and 5 in *reflexa*. In *C. santapau* the colpi range from 5-7 in number.



FIGS. 1-3. Figs. 1-2. *C. santapau*; 6 and 7-colpate pollen grains. Fig. 3. *C. reflexa*; 5-colpate pollen grain; ECT—ectine; END—endine; COL—colpi; RUG—rugulae.

The senior author is thankful to the University of Kalyani for the grant of a scholarship.

Department of Botany,  
University of Kalyani,  
Kalyani (W. Bengal). April 13, 1964.

SITESH DAS.  
M. L. BANERJI.

1. Banerji, M. L. and Sitesh Das, *Journ. Arn. Arb.* January 1965, 46 (1).
2. Erdtman, G., *Pollen Morphology and Plant Taxonomy, Angiosperms*, Stockholm, 1952.
3. Johnston, I. M., *Journ. Arn. Arb.*, 1952, 33, 299.
4. Nair, P. K. K., *Bull. Natl. bot. Gard. (Lucknow)*, 1961, No. 53.
5. — and Rehman, K., *Ibid.*, 1963, No. 83.
6. Stern, K. R., *Amer. J. Bot.*, 1962, 49, 362.
7. Yuncker, T. G., *Torrey Bot. Club.*, 1932, 18, 109.

### ANTIDESMA WALKERI—A NEW RECORD FOR INDIA

*Antidesma walkeri* (Tulasne) Pax & Hoffm. (Euphorbiaceae), known only from Ceylon so far, was collected in Agastyamalai Hills in Tirunelveli District, Madras State, at an altitude of about 700 m.; only few plants were located near Inchikuzhi, in moist deciduous forests. The occurrence of this species, at the southern end of the Western Ghats in India, forms an additional information about its distribution (Fig. 1).

*Antidesma walkeri* (Tulasne) Pax & Hoffm. in Engler, *Pflanzenr.*, 81: 118, 1922. *A. lanceolatum* var. *walkeri* Tulasne in *Ann. Sci. nat.* (Ser. 3), 15: 196, 1851; Muell.-Arg. in *DC. Prodr.*, 15 (2): 266, 1866. *A. lanceolarium* sensu Thw. *Enum. Pl. Zeyl.*, 289, 1864. *A. diandrum* sensu Hook. f., *Fl. Brit. India*, 5: 361,

1887 p.p.; Trimen, *Handb. Fl. Ceylon*, 4: 44, 1898.



FIG. 1

This distinct species was included in *Antidesma diandrum* (Roxb.) Roth, by Hook. f. and was followed by Trimen. Trimen, loc. cit., p. 45, states: "I follow *Flora of British India* in reducing this to *A. diandrum* with some doubt, as the flowers are never diandrous in Ceylon, nor does our plant agree in some other respects." The two species can be differentiated as follows:

Leaves lanceolate, acuminate to cuspidate-acuminate at apex; stamens 3-4. *A. walkeri*  
Leaves elliptic or obovate, acute to shortly acuminate at apex; stamens 2. *A. diandrum*  
For a full description of *A. walkeri* see Pax & Hoffm. loc. cit.

*Herbarium specimens examined.*—Henry 16262, collected on 25th May 1963, deposited in the Southern Circle Herbarium, Botanical Survey of India, Coimbatore (MH); this number matches well with the only Ceylon specimen (Thwaites 2602) of *A. walkeri* represented in the Central National Herbarium (CAL).

I wish to thank Dr. H. Santapau for the facilities extended and Dr. K. Subramanyam for going through the manuscript. I also thank Dr. K. M. Sebastine for providing facilities for collection of this species.

Botanical Survey of India, A. N. HENRY.  
76, Acharyya Jagadish Bose Road,  
Calcutta-14. September 17, 1965.