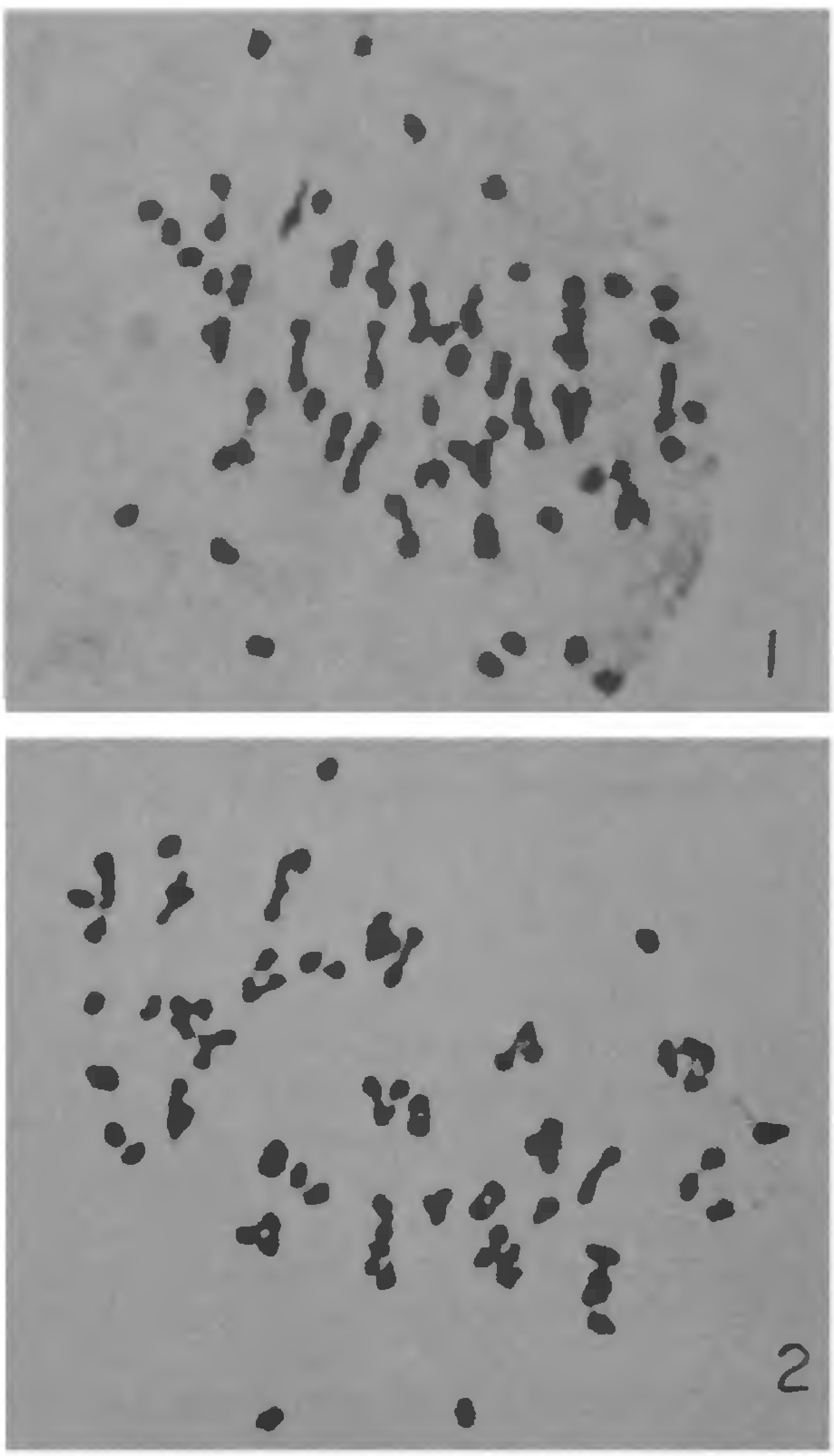
S. villosum Mill ($2n = 4x = 48$), a sterile heptaploid hybrid ($2n = 7x = 84$) was obtained. Generally in hexaploid and tetraploid cross, a pentaploid hybrid with $2n = 60$ chromosome is expected. The occurrence of heptaploid hybrid indicates the sexual functioning of cytologically non-reduced gametes. The crosses were successful only when *S. nigrum* was used as the female parent. It is believed that heptaploidy originated from an embryo resulting in fertilization of reduced egg cell of *S. nigrum* by non-reduced male gamete of *S. villosum.*

The parental species exhibited regular meiosis with 36 and 24 bivalents, respectively. The hybrid was sterile and showed highly irregular meiosis (figures 1, 2). Anaphase I and the subsequent stages were irregular and characterized by laggards, chromatin bridges and unequal distribution of chromosomes at poles. In the hybrid, at metaphase I, the mean pairing of chromosomes, per cell, was $19.72(12\text{–}28)_{I} + 12.48(19\text{–}16)_{II} + 12.80(6\text{–}18)_{III} + 0.56(0\text{–}2)_{IV} + 0.08(0\text{–}1)_{VI}$; the range of values is given in parentheses. Occurrence of as many as 18 trivalents indicates the structural homology of the parental chromosomes. This may mean that *S. villosum* participated in the ancestry of *S. nigrum* or both have been derived from a common ancestor[2].



Figures 1, 2. Meiosis in heptaploid hybrid. **1.** Metaphase I showing $27_{I} + 15_{II} + 9_{III}$; **2.** Metaphase I showing $12_{I} + 12_{II} + 12_{III} + 3_{IV}$.

Failure of chromosome reduction in the first meiotic division or failure of cytokinesis during the second meiotic division leads to the formation of non-reduced gametes[3]. If $2n$ gamete played a prominent role in evolution of higher polyploids in the section *Solanum,* it is likely that considerable proportions of the polyploids at higher level believed to be allopolyploids are actually autoploid. Then, the diploid-like meiotic behaviour of polyploids may be caused by a special genetically controlled mechanism as in *Phleum*[4].

1 May 1986; Revised 4 June 1986

1. Krishna Rao, M., *Genetica,* 1971, **42,** 157.
2. Edmonds, J. M., In: *The biology and taxonomy of the Solanaceae,* (eds) J. G. Hawkes, R. N. Lester and A. D. Skelding, Linnean Soc. Symposium series, No. 7, 1979, 529.
3. De Wet, J. M. J., In: *Polyploidy: biological relevance,* (ed.) W. H. Lewis, Plenum, New York, 1980, p. 3.
4. Müntzing, A. and Prakken, R., *Hereditas,* 1940, **26,** 463.

TAXONOMIC STATUS OF *FLACOURTIA RAMONTCHI* L HERIT

N. KRISHNAN
Department of Botany, PSG College of Arts and Science, Coimbatore 641 014, India.

FLACOURTIA RAMONTCHI L Herit and *F.sepiaria* Roxb were united under *F.indica* (Burm f) Merr, by Merril[1]. Both *F. ramontchi* and *F. sepiaria* possess thorns. According to earlier reports[3–4] the thorns do not bear flowers and fruits in *F. ramontchi* while they usually bear flowers and fruits in *F. sepiaria.*

In the present work it was observed in the same plant of *F. sepiaria* flowers in the axils of the leaves and also on thorns. Therefore, the exclusive absence of flowers and fruits on thorns in *F. ramontchi* distinguishes that taxon. But in the recent taxonomic works[5,6] no valid status has been assigned to *F. ramontchi.*

F. sepiaria and *F. ramontchi* have the same somatic chromosome number (figure 1). However they differ in karyotype details[7].

Chromosome characteristics	*F. sepiaria*	*F. ramontchi*
Chromosomes with secondary constrictions	2 pairs	4 pairs
Chromosome with subterminal centromeres	Nil	1 pair
Chromosomes with satellites	Nil	1 pair
Chromosomes with median centromeres	9 pairs	7 pairs

Therefore in spite of identical chromosome numbers these two taxa differ conspicuously in their chromosome morphology. Naturally, *F. sepiaria* and *F. ramontchi* are not one and the same and so have to be treated as different taxa.

In fact, there are many instances where certain species of a particular genus differ not in chromosome number but in karyotype such as *Corchorus*[8], *Crotalaria*[9] and *Leucas*[10]. In such cases karyotype differences serve as markers of the individuality of the concerned taxa.

The chromotographic profiles of *F. sepiaria* and *F. ramontchi* show certain differences in the distribution pattern of free aminoacids and phenolic substances[11]. All the free aminoacids seen in *F. sepiaria* are seen in *F. ramontchi* also but the latter taxon has an addition of one more compound. As for the phenolic compounds, *F. ramontchi* has an addition of two compounds not seen in *F. sepiaria.*

In the light of the above findings it seems reasonable to retain the original specific status of *F. ramontchi.*

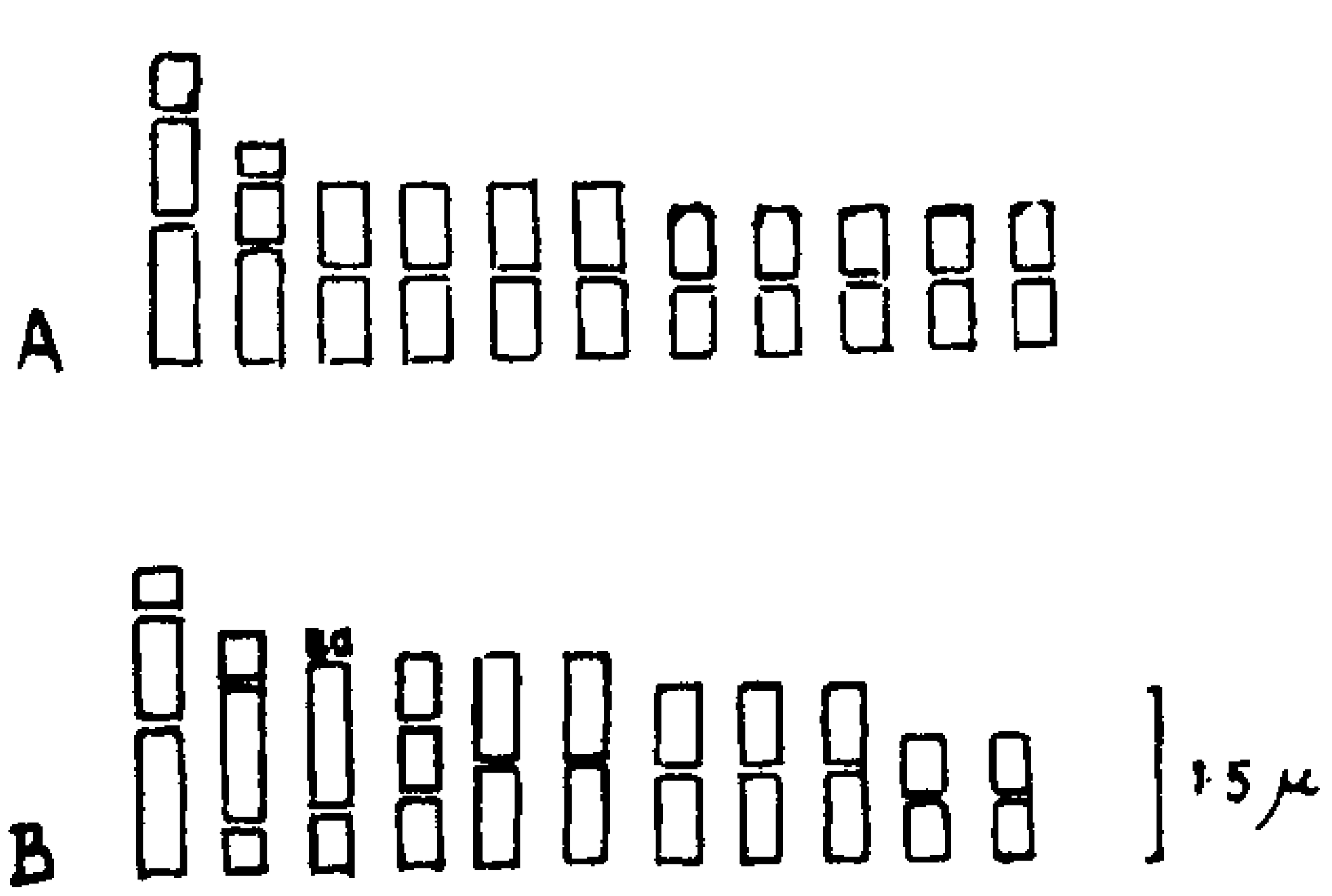


Figure 1. A. *F. sepiaria* Karyotype. **B.** *F. ramontchi.*

7 August 1985

1. Merril, 1917 *vide Sleumer*, 1954, p. 77.
2. Gamble, J. S., *Flora of the Presidency of Madras*, Botanical Survey of India, Calcutta, 1935, **1**, 30.
3. Rhaizada, 1953 *vide Sleumer*, 1954, p. 77.
4. Prain, D., *Bengal Plants*, Botanical Survey of India, Calcutta, 1963,**1**.
5. Sleumer, H., Flacourtiaceae In: *Fl. Malesiana Bull.*, (ed.) C. G. G. J. Van Steenis, 1954, **1**, 1.
6. Baker, C. A. and Bakhuizen Van Den Brink, R. C., *Flora of Java*, 1963, **1**, 282.
7. Krishnan, N., Ph.D Thesis, Annamalai University, 1977.
8. Sharma, A. K. and Roy, M., *Agron Lusit*, 1958, **20**, 5.
9. Chennaveeriah, M. S. and Patil, B. C., *Cytologia*, **38**, 73.
10. Krishnan, N., *Curr. Sci.*, 1980, **49**, 521.
11. Krishnan, N., *Indian J. Bot.*, 1983, **6**, 190.

EFFECT OF ACCELERATED AGING ON DIFFERENT PROTEIN FRACTIONS OF OKRA SEEDS

GURMIT SINGH and HARI SINGH
Seed Research and Production Unit, Punjab Agricultural University, Ludhiana 141 004, India.

EARLIER studies on seed deterioration have concentrated only on total proteins and their reduction indicated a decline in seed vigour[1]. However, in examining the deterioration in protein metabolism, significant changes of some minor but important protein fractions might remain undetected if only the total proteins were examined. This study, therefore, deals with different protein fractions in relation to seed deterioration in okra seed, since such information is obscure in different types of seeds.

Ten grams of okra [(*Abelmoschus esculentus* L (Moench) cv] 'Punjab Padmini' seeds were acceleratedly aged at 100% relative humidity at 45 ± 1° C for 5 days[2]. Hundred seeds in triplicate were germinated