This species is closely allied to *Spodiopogon rhizophorus* (Steud.) Pilger with which it differs as shown below :

Spodiopogon rhizophorus (Steud.) Pilger	*Spodiopogon jainii* sp.nov.
1. Culms stout	Culms slender
2. Spikelets densely hairy	Spikelets sparsely hairy
3. Sessile spikelets 6–7 mm long	Sessile spikelets 3·5–4 mm long
4. Pedicelled spikelets 4·5–5 mm long	Pedicelled spikelets 3–3·5 mm long
5. Lower glume 7–9 nerved; distinctly 2-mucronate at apex; margins hyaline, not ciliate	Lower glume 5–7 nerved, apex truncate, margins ciliate
6. Upper glumes 9–13 nerved	Upper glume strictly 7-nerved
7. Hairs on glumes 3-5 mm long, white	Hairs on glumes at the most 2 mm long, purplish
8. Paleas of lower florets acute at apex	Paleas rounded at apex
9. Lemmas of upper florets deeply bifid, lobes long acuminate	Lemmas of the upper florets notched at apex, lobes acute or shortly acuminate
10. Awns 15–20 mm long	Awns 6–10 mm long

The species is named after Dr. S. K. Jain, Director, Botanical Survey of India, in recognition of his outstanding contributions to the study of Indian grasses.

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GAMMA RADIATION INDUCED CHANGES IN THE PEROXIDASE ACTIVITY OF CHICKPEA SEEDLINGS

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PEROXIDASE activity was measured in the seedlings raised from gamma-irradiated dry seeds of white seeded chickpea variety L 144. The seeds were germinated and grown in Petri dishes[1]. Peroxidase activity was determined in cotyledons and embryo-axis separately up to 6 days of growth. The tissue (0·5 g) was homogenized in 6 ml of 0·05 M sodium acetate buffer pH 4·5 and centrifuged at 10,000 rpm for 15 minutes at 0° C. The enzyme activity was measured in the supernatant by measuring the change in O.D. at 470 nm due to oxidation of O-Dianisidine in a medium containing H_2O_2. One unit of enzyme was the amount of enzyme which caused a change of 0·1 in O.D. The experiment was repeated twice with duplicate samples.

The enzyme activity increased with time in cotyledons as well as embryo-axis. Increase in the enzyme activity was also noted as a result of gamma-irradiation in 5 and 10 kR treatments, the increase being more at 5 KR (Table I). Higher doses resulted in decreased activity. The stimulation persisted upto 4th day of germination after which it declined. A similar study on 'desi' chickpeas (data not given) also showed increased enzyme activity due to irradiation in the cotyledons in 5 kR treatment. Higher doses were detrimental.

TABLE I

Percentage change in the peroxidase activity of chickpea seedlings

Radiation dose (kR)	Age of the seedling (days)			
	1	2	4	6
Cotyledons				
5	+16·1	+ 7·9	+10·4	− 2·2
10	+ 6·5	+ 5·3	+ 4·2	+ 1·1
20	− 6·5	− 5·9	− 4·2	− 6·5
30	− 6·5	−10·5	−10·4	−20·4
40	−12·9	−21·1	−20·8	−32·3
Embryo-axis				
15	+13·0	+ 6·9	+12·5	+ 7·4
10	+ 9·4	+ 4·0	+ 3·1	− 7·4
20	−13·0	−13·3	−12·5	−12·5
30	−25·4	−17·2	−18·8	−22·2
40	−21·7	−21·6	−31·3	−33·3
Activity (units) in control				
Cotyledons	372	912	1152	2232
Embryo-axis	276	696	768	648

Gamma-radiations cause damage to the tissue by producing H_2O_2 and organic peroxy radicals[3], and peroxidases are the internal mechanism for removal of these radicals. The increase in the enzyme activity at the lower doses could be a direct response of the

tissue tc increase in peroxides. At higher doses the whole of cellular metabolism is grossly impaired resulting in lower enzyme activities.

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BEHAVIOURAL COMPONENTS IN FEEDING, REPRODUCTION AND DISPERSAL OF THE GRASS SEED-FEEDING THRIPS *CHIROTHRIPS MEXICANUS* CRAWFORD

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Information on several grass-seed infesting thrips of the genus *Chirothrips* Haliday is available with reference to their ecology (Hukkinen[1]; Oettingen[2]; Riherd[3]; Ananthakrishnan[4]; Wetzel[5]; Koppa[6]; Ananthakrishnan and Thirumalai[7]), biology (Evans[8]; Ananthakrishnan and Thirumalai[9]) and male reproductive system (Pitkin[10]). Emphasis has been made in this study on the behavioural aspects relating to feeding, reproduction, and dispersal of *Chirothrips mexicanus* in the field as well as in the laboratory.

Materials and Methods

Flowers of *Chloris barbata* with pre-pupae were collected at random from the field and transferred to the collecting chamber composed of a chimney, a conical flask, and a polythene bag to obtain the emerging adults, which were reared in separate culture tubes provided with flowers of known age. Inflorescences of different ages, marked with different colour threads, were provided within the same culture tube to study the preference of *C. mexicanus* for a certain age of inflorescence both for feeding and for egg-laying. In the field, to study their pupal and adult dispersal behaviour, the inflorescences were covered with polythene bags.

Observations

Feeding

Age of the inflorescence appears to influence adult and larval feeding of *C. mexicanus*. Gravid females lay a single egg in each ovary of 7–13 day-old inflorescence. The hatching larvae, which initially feed on the ovarian surface of 13–17 day-old inflorescence, consume the single ovary fully by the time they attain the pupal stage, thus meeting their entire nutritional requirements for development. With further development the pupae remain immobile and protected within the glumes. Adults prefer ovaries of 2–5 day-old flowers with high milk content (Fig. 1), consuming an average of 11 ovaries (8–14) per day (Plate 1. A and B).

Mating and Oviposition

Biological studies of *C. mexicanus* indicate that the apterous males always emerge before females, the sex-ratio of male and female being constantly 1 : 2. During male emergence the majority of the females in the same compound spike is in the pupal stage. Subsequently, the males enter the glumes of the same compound spike and mate with the female pupae, which have developed wing buds and premature ovaries. Males are found to be polyandric. Oviposition starts 4–5 days after adult emergence and continues for 4–5 days. The adult females select the ovaries of 7–13 day-old flowers for egg-laying (Fig. 1). They enter the fertile glumes of the spikelets and by bending their abdomen slightly over the ovary, insert single eggs each at the apex of an ovary, projecting partially outside it. In the laboratory, the female on an average lays two eggs per day.

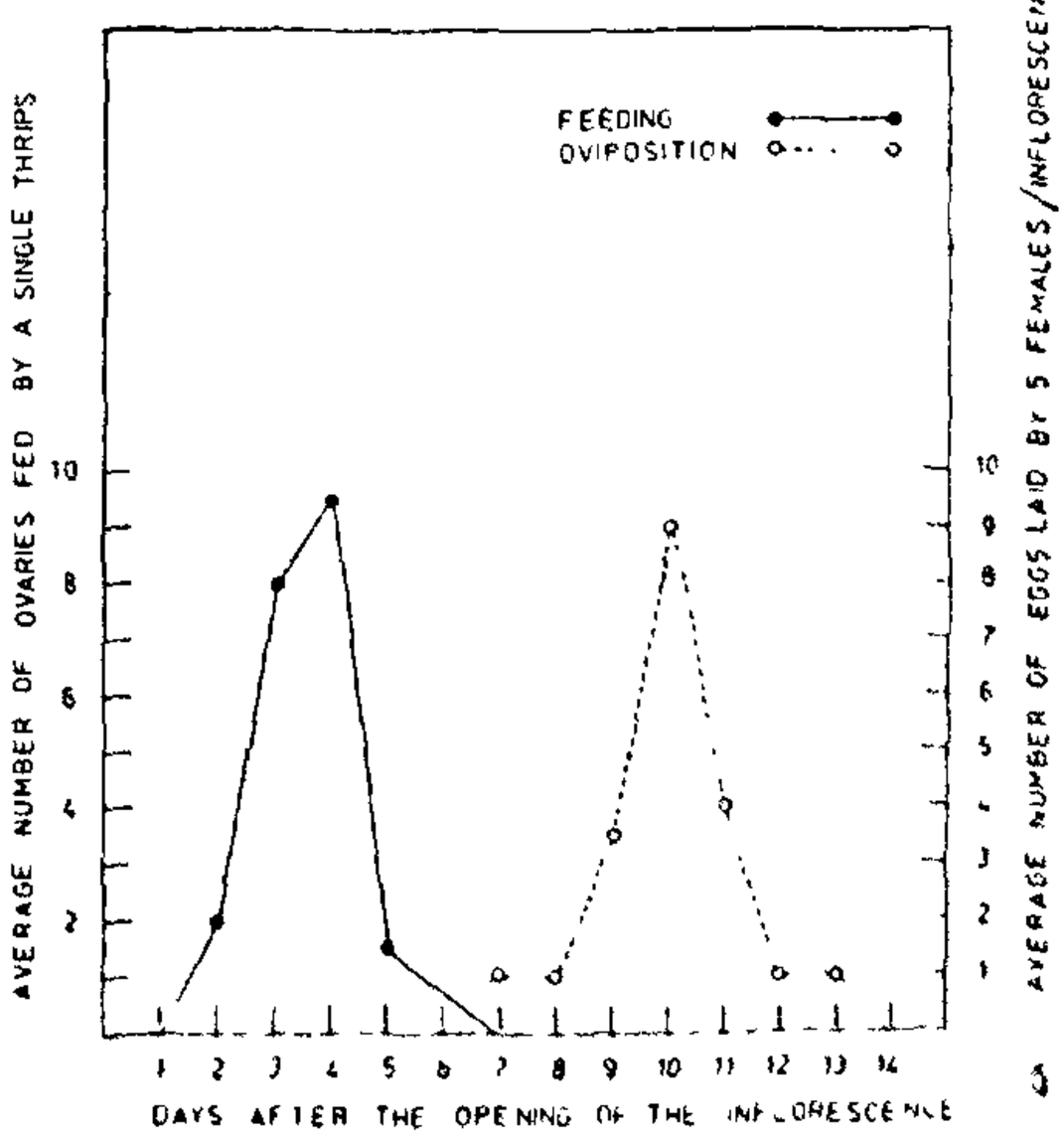

Fig. 1. Showing the preference of *C. mexicanus* to *C. barbata* ovary for feeding and oviposition.