

Table 1 Relative sensitivity of *C. sativum* varieties to EMS and DES

Mutagen/ concentration	Germination Percent of control		Survival Percent of control		Plant height (cm)		Vitamin C content mg/100 g		
	Variety		Variety		Variety		Variety		
	Variety Sheetal	Pusa Selec. 360	Variety Sheetal	Pusa Selec. 360	Variety Sheetal	Pusa Selec. 360	Variety Sheetal	Pusa Selec. 360	
EMS									
Control	—	—	—	—	32.00 ± 0.10	31.1 ± 0.12	161 ± 0.16	160 ± 0.55	
0.05%	90.72	87.10	92.15	91.00	30.00 ± 0.21	29.50 ± 0.15	166 ± 0.15	158 ± 0.61	
0.10%	86.15	81.57	87.30	86.78	28.61 ± 0.15	27.15 ± 0.11	164 ± 0.11	156 ± 0.78	
0.15%	79.03	80.16	80.71	77.10	26.15 ± 0.11	25.00 ± 0.25	158.5 ± 0.22	154 ± 0.10	
DES									
Control	—	—	—	—	32.00 ± 0.10	31.1 ± 0.12	161 ± 0.16	160 ± 0.55	
0.05%	87.65	80.12	87.12	83.17	28.1 ± 0.28	27.70 ± 0.16	159 ± 0.26	156 ± 0.11	
0.10%	80.12	78.00	82.00	78.12	26.57 ± 0.11	24.75 ± 0.12	155 ± 0.76	153 ± 0.26	
0.15%	73.16	74.00	77.78	74.82	24.00 ± 0.78	22.10 ± 0.16	153 ± 0.80	150 ± 0.12	

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A NEW RECORD OF SPIRURID NEMATODE *PARABRONEMA SKRJABINI* RASSOWSKA, 1924 FROM INDIAN GOATS

S. C. YADAV*, O. P. S. SENGAR and
P. P. S. CHAUHAN†

Department of Animal Husbandry and Dairying, R. B. S. College, Bichpuri 283 105, India.

* Present address: Division of Parasitology, Indian Veterinary Research Institute, Izatnagar 243 122, India.

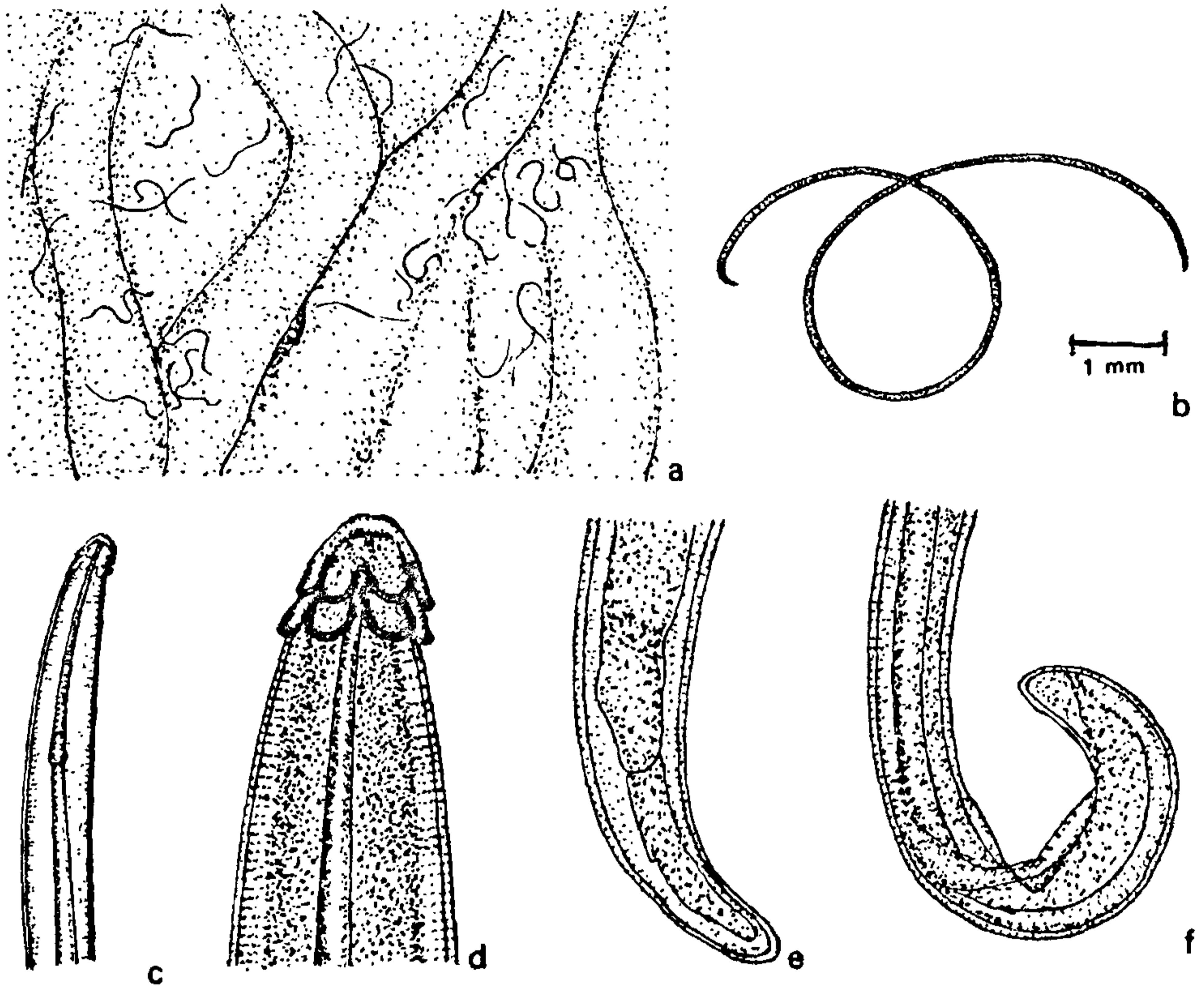
† Department of Parasitology, College of Veterinary and Animal Husbandry, CSA University of Agricultural and Technology Campus, Mathura 281 001, India.

THE genus *Parabronema* was created¹ to accommodate certain spirurid nematodes collected from the stomach of elephants and preserved in British Natural History Museum as *Sclerostoma clathratum* (female) Baird 1868, which was later renamed as *Parabronema africanum*. Yorke and Maplestone² described another species from African elephants as *P. rhodesiense* and yet another was reported as *P. rhinocerotis* from Rhinoceros³

Further, Sarwar⁴ studied the occurrence of this species in Indo-Pakistan border and transferred it to the genus *Squamanema* due to some distinct characteristics and named it as *Squamanema skrjabini*. However, Yamaguti⁵ took it up again and distinctly identified it as *Parabronema skrjabini* from *Squamanema skrjabini*.

P. skrjabini has not been reported from Indian goats so far and is now being recorded for the first time.

This parasite, as revealed during the postmortem is long, slender and dark red in colour found firmly embedded in the mucous lining of abomasum in a zig-zag manner (figure 1a). Their mouth is provided with a pair of lateral pseudolabia each with three papillae (figure 1d). The oesophagus has a short narrow anterior and a long wide posterior part (figure 1c). The males measured from 12.50 to 20 mm with a mean of 15.90 ± 0.69 mm long. They had spirally coiled posterior and longitudinal ridges on their ventral surface (figure 1f), having paired but dissimilar spicules. The females (figure 1b), on



Figures 1a-f. Morphology of *Parabronema skrjabini* in goat. **a.** *P. skrjabini* in situ embedded in the mucosa of abomasum. **b.** A. *P. skrjabini* female magnified in proportion to 1 mm mark on its right. **c.** *P. skrjabini* male (anterior portion) ($\times 86$). **d.** Head of *P. skrjabini* male with pseudolabia and papillii ($\times 434$). **e.** Bluntly pointed tail of female *P. skrjabini* ($\times 86$). **f.** Spirally coiled posterior end of male with typical longitudinal ridges ($\times 164$).

the other hand, measured 30 to 33.50 mm with a mean of 31.25 ± 0.43 mm long and bluntly conical curved tail (figure 1e).

Out of 63 male kids (around one year) examined on postmortem during 1983-84, the overall incidence of this parasite was 39.68%. The incidence was greater during winter than during summer. The kids of Black Bengal breed, however, had practically no infection of this parasite, the Beetal had it to the extent of 75% with the crossbreds ranking midway⁶ between these two.

The pathogenicity of this parasite has not been documented in the case of goats. Their deeply

embedded nature in the mucosa of abomasum is, however, suggestive of traumatic injuries to the stomach lining and its exposure to a variety of microbial infections.

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A NOTE ON CHIMERA IN GUAVA (*PSIDIUM GUAJAVA* L.)

P. H. RAMANJINI GOWDA,
 B. B. MADALAGERI and N. VIJAYA KUMAR
 Department of Horticulture, University of
 Agricultural Science, GKVK,
 Bangalore 560 065, India.

CHIMERAS are of importance in some of the horticultural crops. When a shoot arises with some mutated and some non-mutated cells it is known as Chimera. The stability of Chimeras varies with the kind, depending on the position of the mutated and non-mutated cells of the portion. The existence of chimeral plants has long been recognized in citrus. Chimeral conditions are particularly evident in leaves and fruits. The chimeral appearance in citrus leaf and fruit has been reported by Janick and Moore, where the leaf pattern indicated patches of yellow and green colour. However, fruits have a thin, whitish rind with irregular narrow longitudinal green stripes.

In a clonal population of 128 plants of Guava var. Lucknow-49, a chimeral shoot was noticed in a plant during August 1985 at the Horticultural Research Station, Bangalore. The chimeral shoot had several leaves with yellow and green patches. Over a period of observation, the yellow portion of the leaf started drying due to lack of chlorophyll. The immature fruit in the chimeral shoot had a greenish rind colour with pale blue longitudinally running stripes.

So far no incidence of chimeras in guava has been reported. The usefulness of this chimeral shoot is being studied by inducing roots through air-layering in the mutated shoot.

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SUPPRESSION OF WATER HYACINTH BY THE EXOTIC INSECT *NEOCHETINA EICHHORNIAE* IN BANGALORE, INDIA.

K. P. JAYANTH

All India Coordinated Research Project on Biological Control of Crop Pests and Weeds,
 Indian Institute of Horticultural Research,
 Hessaraghatta Lake Post, Bangalore 560 089, India.

WATER hyacinth (*Eichhornia crassipes*), a free-floating plant of South American origin and considered to be one of the world's most serious aquatic weeds¹, infests more than the 200,000 ha of water surface in India². Manual, mechanical and chemical methods of control are expensive and unsatisfactory as repeated applications are needed³. Considering the high growth rate of this weed and its ability to absorb water pollutants, utilization has been proposed as a method of control⁴. However, Gopal⁵ cautioned that instead of bringing down weed population utilization may help promote growth and maintenance of large weed stands.

Neochetina eichhorniae Warner (Coleoptera: Curculionidae), one of the natural enemies identified in surveys conducted in South America, has established after introduction in many countries⁶. A culture of this insect was obtained from USA in 1982. Field releases were started in Bangalore after exhaustive host-specificity tests conducted under quarantine conditions confirmed its safety for field liberation in India⁷.

A 344 ha tank at Bellandur, located near the Bangalore airport, was selected for field releases of *N. eichhorniae*. This tank is fed by sewage effluents which make rich organic nutrients available for the luxuriant growth of water hyacinth. The weeds in turn provide ideal breeding sites for mosquitoes by keeping the water surface placid and rendering it inaccessible to any methods of chemical control. The Bellandur tank has been identified as the major source of mosquito breeding in the Bangalore airport area. For combating the mosquito menace mechanical removal of water hyacinth was recommended and between August 1982 and March 1983 the Bangalore Corporation spent Rs. 3.5 lakhs by deploying 200 daily wage and 419 regular gangmen⁸. Despite these measures more than half the surface area of the above tank was infested by water hyacinth in June-July 1984, when 3650 adults of *N. eichhorniae* were released.

Adults of *N. eichhorniae* scrape and feed on water