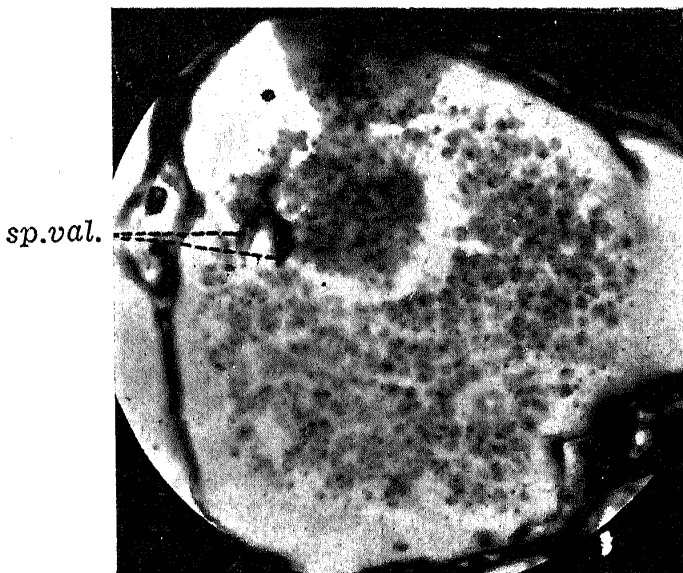


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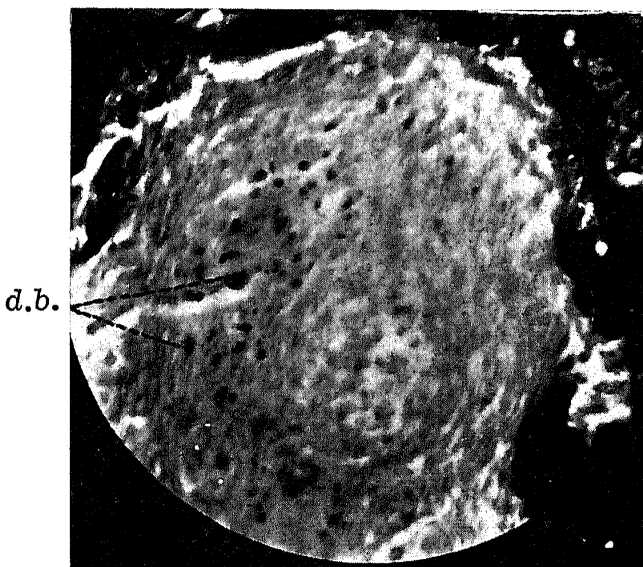
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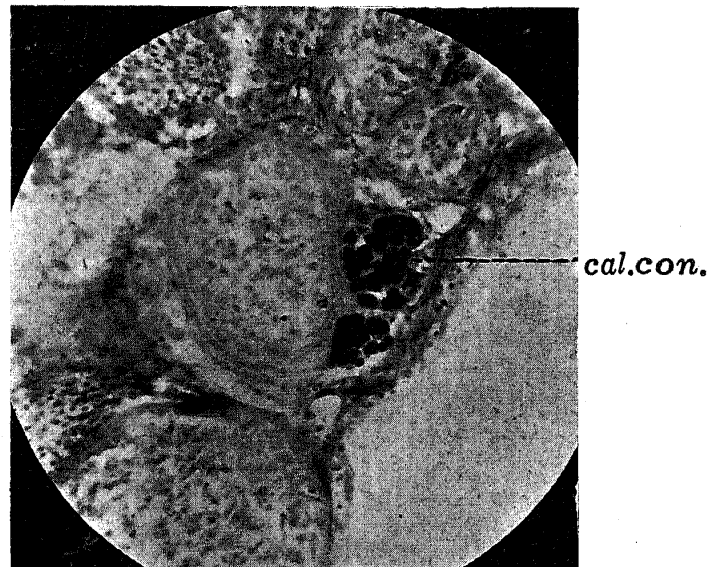
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# A LIST OF HOSTS OF SOME PHANEROGAMIC ROOT-PARASITES ATTACKING ECONOMIC CROPS IN INDIA

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DURING the last eight years, investigations have been in progress in the Economic Botanist's section, on phanerogamic root-parasites with particular reference to *Striga* and *Orobanche*. Early in the investigations on *Striga* it was found necessary to prepare a list of all the hosts on which the parasite lives in the absence of the cultivated hosts and compare it with the list of hosts published by previous workers. Only two such lists have appeared so far—one by Sawyer<sup>8</sup> in Burma and another by Saunders<sup>7</sup> in South Africa. Both these authors have worked on only one species namely *Striga lutea* and have given a list of its hosts as determined locally. Among the Indian publications on this subject, the papers by Van Buuren,<sup>2</sup> Luthra<sup>6</sup> and Barnes<sup>1</sup> may be mentioned.

Several requests for a list of the hosts of different species of root parasites have been received and it is felt that a list for India, although not complete, will partially fulfil the requirements of other workers on this subject. An attempt has been made to bring the following list as up-to-date as possible by including in it both the previous lists for *S. lutea* and any other host species mentioned by the Indian works referred to above. Wherever possible the author first recording the fact of the parasitism of the host species has been named.

Parasite	Host	Authority	
		Foreign	Indian
<i>Striga lutea</i> , Lour	<i>Andropogon annulatus</i> Forsk.	Sawyer	
	<i>Andropogon caricosus</i> , Linn.	Sawyer	
	<i>Andropogon monticola</i> , Schult.		Kumar and Solomon
	<i>Andropogon sorghum</i> , Hack.		Mollison
	<i>Andropogon sudanense</i> , Leppman and Bossmann		Chibber
	<i>Aristida adscensionis</i> , Linn.	Sawyer	
	<i>Avena sativa</i> , Linn.	Saunders	
	<i>Brachiaria distachya</i> , Haines		Coimbatore Agricultural Institute
	<i>Celosia argentia</i> , Linn.		Kumar and Solomon
	<i>Chloris gayana</i> , Kunth.	Saunders	
	<i>Chloris virgata</i> , P. Durand	Saunders	
	<i>Commelina Hasskarli</i> , Clarke		Kumar and Solomon
	<i>Corchorus fascicularis</i> , Lambk.	Sawyer	
	<i>Cynodon dactylon</i> , Pers.	Sawyer	
	<i>Cyperus rotundus</i> , Linn.	Sawyer	
	<i>Dactylis glomerata</i> , Linn.	Saunders	
	<i>Digitaria sanguinalis</i> , Scop.	Saunders	
	<i>Echinochloa frumentacea</i> Link.	Saunders	
	<i>Echinochloa crus-galli</i> , Beauv.	Saunders	
	<i>Eleusine ægyptiaca</i> , Desf.	Sawyer	Kumar and Solomon
	<i>Eleusine coracana</i> , Gaertn.		Millets Section, Coimbatore
	<i>Eragrostis abyssinica</i>	Pearson	
	<i>Eragrostis</i> spp., Host.		Van Burren
	<i>Eriochloa polystachya</i> , Duthie.	Sawyer	
	<i>Euchlena mexicana</i> , H.B.K.	Sawyer	
	<i>Eurochloa helopis</i>	Saunders	
	<i>Hordeum intermedium</i> , Keke.	Saunders	
<i>Indigofera glandulosa</i> , Wild.		Kumar and Solomon	
<i>Imperata arundinaceæ</i> , Cyrill	Palm and Heusser		

Parasite	Host	Authority	
		Foreign	Indian
<i>Striga lutea</i> , Lour	<i>Ipomea reniformis</i> , Chois	Sawyer	
	<i>Oryza sativa</i> , Linn.		Barber
	<i>Panicum brizanthum</i> , Hochst.	Saunders	
	<i>Panicum coloratum</i> Kunth.	Saunders	
	<i>Panicum colonum</i> Linn.	Sawyer	
	<i>Panicum distachyum</i> , Linn.	Sawyer	
	<i>Panicum flavidum</i> Retz.	Sawyer	
	<i>Panicum Isachne</i> , Roth		Kumar and Solomon
	<i>Panicum maximum</i> , Jacq	Saunders	
	<i>Panicum miliaceum</i> , Linn.	Saunders	
	<i>Panicum miliare</i> , Lamk.	Sawyer	Kumar and Solomon
	<i>Panicum prostratum</i> , Lamk.	Sawyer	
	<i>Panicum repens</i> , N.L.B.	Sawyer	
	<i>Paspalum dilatatum</i> , Linn.	Pearson	
	<i>Paspalum scrobiculatum</i> , Linn.		Chibber
	<i>Paspalum virgatum</i> , Linn.	Saunders	
	<i>Pennisetum typhoideum</i> , Rich.	Sawyer	Kumar and Solomon
	<i>Pennisetum unisetum</i> , Benth.	Saunders	
	<i>Saccharum officinarum</i> , Linn.	Pearson	Mollison
	<i>Secale cereale</i> , Bieb.	Saunders	
	<i>Setaria gerrardii</i> , Stapf.	Saunders	
	<i>Setaria italica</i> , Beauv.	Sawyer	Kumar and Solomon
	<i>Setaria lindenbergiana</i> , Stapf.	Saunders	
<i>Setaria nigrirostris</i> , T. D. and Schizz	Saunders		
<i>Sporobolus coromandelianus</i> , Link.	Sawyer		
<i>Tribulus terrestris</i> , Linn.	Sawyer		
<i>Triticum vulgare</i> , Host.	Saunders		
<i>Zea Mays</i> , Linn.	Fuller	Kumar and Solomon	
<i>Striga densiflora</i> , Benth.	<i>Andropogon contortus</i> , Linn.		Van Buuren

Parasite	Host	Authority		
		Foreign	Indian	
<i>Striga densiflora</i> , Benth.	<i>Andropogon pumilus</i> , Roxb.		Kumar and Solomon	
	<i>Andropogon sorghum</i> , Hack.		Van Buuren	
	<i>Commelina Hasskarlii</i> , Clarke		Kumar and Solomon	
	<i>Cyperus spp.</i> , Linn.		Kumar and Solomon	
	<i>Desmodium diffusum</i> , DC.		Kumar and Solomon	
	<i>Digitaria Royleana</i> , Prain.		Kumar and Solomon	
	<i>Eleusine ægyptiaca</i> , Desf.		Kumar and Solomon	
	<i>Eragrostis spp.</i> Beauv.		Van Buuren	
	<i>Euchlæna mexicana</i> , Schrad.		Kumar and Solomon	
	<i>Glossocardia linearifolia</i> , Cass.		Kumar and Solomon	
	<i>Indigofera cordifolia</i> , Heyne		Kumar and Solomon	
	<i>Iseilema laxum</i> , Hack.		Kumar and Solomon	
	<i>Iseilema wightii</i> , Andrews		Barnes	
	<i>Lophopogon tridentatus</i> , Hack.		Kumar and Solomon	
	<i>Panicum Isachne</i> , Roth.		Kumar and Solomon	
	<i>Paspalum sanguinale</i> , Lamk.		Kumar and Solomon	
	<i>Paspalum scrobiculatum</i> , Lamk.		Kumar and Solomon	
	<i>Pennisetum typhoideum</i> , Rich.		Kumar <sup>5</sup>	
	<i>Saccharum officinarum</i> , Linn.		Luthra	
	<i>Setaria glauca</i> , Beauv.		Kumar and Solomon	
	<i>Setaria italica</i> , Beauv.		Kumar and Solomon	
	<i>Tragus racemosus</i> , Scop.		Kumar and Solomon	
	<i>Tripogon Jacquemonti</i> , Stapf.		Kumar and Solomon	
	<i>Striga euphrasiodes</i> , Benth.	<i>Andropogon contortus</i> , Linn.		Kumar and Solomon
		<i>Andropogon sorghum</i> , Hack.		Luthra
		<i>Aristida funiculata</i> , T. and R.		Kumar and Solomon
		<i>Cyperus spp.</i> , Linn.		Kumar and Solomon
<i>Digitaria Royleana</i> , Prain.			Kumar and Solomon	
<i>Eragrostis cynosuroides</i> , Beauv.			Kumar and Solomon	

Parasite	Host	Authority	
		Foreign	Indian
<i>Striga euphrasioides</i> , Benth.	<i>Oldenlandia aspera</i> , DC.		Kumar and Solomon
	<i>Oryza sativa</i> , Linn.		Barnes
	<i>Panicum colonum</i> , Linn.		Kumar and Solomon
	<i>Panicum ramosum</i> , Linn.		Kumar and Solomon
	<i>Polygala erioptera</i> , DC.		Kumar and Solomon
	<i>Saccharum officinarum</i> , Linn.		Barber
	<i>Spermacoce stricta</i> , Schlecht.		Kumar and Solomon
	<i>Sporobolus diander</i> , Beauv.		Kumar and Solomon
	<i>Zea Mays</i> , Linn.		Kumar and Solomon
<i>Striga orobanchoides</i> , Benth.	<i>Dysophylla quadrifolia</i> , Benth.		Barber
	<i>Euphorbia antiquorum</i> , Linn.	Trimen	
	<i>Hygrophila seryphyllum</i> , Andrews		Van Buuren
	<i>Lepidagathis cristata</i> , Willd.		Van Buuren
<i>Sopubia delphinifolia</i> , G. Don.	<i>Anthistiria ciliata</i> , Linn.		Kumar and Solomon
	<i>Chrisopogon montanus</i> , Trin.		Barnes.
	<i>Peltophorus divergens</i> , Camus		Kumar and Solomon
	<i>Andropogon sorghum</i> , Hack.		Kumar <sup>4</sup>

The above list gives 54 hosts of *S. lutea*, of which only 18 have been recorded in India. The authors have contributed five new hosts to this list.

Of the list of 24 hosts of *S. densiflora*, the authors are responsible for 18. Of the 15 hosts of *S. euphrasioides*, 12 have been recorded by the authors for the first time. *S. orobanchoides* has only four hosts to its credit, all of which have been mentioned previously. The authors have contributed two new hosts of the four recorded for *Sopubia delphinifolia*.

Saunders<sup>7</sup> believes that non-graminous plants cannot be hosts of *S. lutea*. It is not clear how he came to this conclusion. But Sawyer<sup>8</sup> has listed five non-graminous hosts and the authors record three more. It would appear that the presence of members of the Graminæ is only necessary for the germination of *Striga lutea* seeds ; once they have germinated they can attack other host roots besides those of the Graminæ. This is a tentative conclusion as

the host list was prepared after collecting the parasites together with their immediately neighbouring hosts along with a clod of earth ; the roots were then gently washed in water and whenever a swelling characteristic of the point of haustorial connection was found, the host was preserved for identification later. Herbarium specimens of several hosts of all the species of *Striga* have been prepared and preserved in this manner.

Barnes,<sup>1</sup> in stating that according to Gamble,<sup>3</sup> *S. densiflora* is not recorded as parasitic, records one case of parasitism in this species. During the past eight years work, the parasitism of *S. densiflora* on the hosts given in the above list has been confirmed over and over again. It may also be noted that Tadulingam and Venkatanarayan<sup>9</sup> in their book on South Indian weeds mention only *S. lutea* and *S. euphrasioides* as parasitic and have omitted *S. densiflora* altogether.

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