

TABLE I
Two-factor ratios of crosses of Baroda lintless with Cocanada 45, A8 and the New multiple recessive

Lintless	Lined		Lin less		Total	χ^2	P	Cross-over		
	X	x	X	x						
obs										
Baroda lintless —										
x Cocanada 45	F ₂	M ₂ -m ₂	152	27	33	9	212	4.285	0.3-0.2	
"	"	F ₁ -f ₁	117	33	31	11	212	6.096	0.2-0.1	
x New multiple recessive	F ₂	L ₂ ^A -l ₂ ^{CS}	159	50	53	18	280	0.152	0.90-0.98	
"	"	M ₂ -m ₂	175	54	48	23	280	2.197	0.7-0.5	
"	"	N ₂ -n ₂	166	3	51	21	280	0.833	0.9-0.8	
"	"	F ₂ -f ₂	153	56	48	23	280	2.476	0.5-0.3	
x A8	F ₂	L ^L -l	199	18	28	45	290	84.836	< 0.01	17.9
"	F ₁	"	107	24	22	51	307	111.519	< 0.01	16.3
									*17.05 ± 1.72	
	F ₂	L ₁ ^K -l ₁	198	18	19	45	290	83.480	< 0.01	18.3
	F ₂	"	172	14	13	52	261	121.799	< 0.01	14.8
									*20.46 ± 1.97	
		Leaf shape	Narrow	Broad						
	F ₂	L ₁ ^K -l ₁	152	35	34	29	290	40.765	< 0.01	27.4
	F ₂	"	110	36	26	39	261	46.910	< 0.01	26.4
									*26.93 ± 2.28	

* Linkage with L₁ in F₂ and F₃ data.

— for the linkage degree of freedom alone was found to be very large and significant in all the cases. The results show that the *li*₂ gene for lintlessness in the Baroda lintless mutant is linked with the leaf-shape locus with a cross-over value of 17.05 per cent. = 1.72 and with the lint colour locus with a cross-over value of 20.46 per cent. = 1.97. The leaf-shape gene is linked with the lint colour gene with a cross-over value of 20.93 per cent. = 2.28 and confirms the linkage previously reported by Hutchinson (1934) with a cross-over value of approximately 30 per cent. Since the cross-over value of the Baroda lintless gene with either leaf-shape or lint colour gene is nearly equal, the locus of the new gene is somewhere midway between the L and L₀ genes.

As regards other genes, namely, those for leaf nectaries, pollen colour, petal colour and anthocyanin, the deviations from the expected ratio are not significant and indicate occurrence of free assortment between these and lintlessness.

Economic Botanist,
Baroda.
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1. Fisher, R. A. "Statistical methods for research workers" 1930, 2nd ed. 2. Govande, G. K., *Crop Sci.* 1944, 13, 15. 3. Hutchinson, J. E., *Journ. Gen.*, 1934, 28, 437.

CONCENTRATION OF HEVEA LATEX BY CREAMING AGENTS

TRAUBE had investigated the efficiency of many vegetable colloids to cream latex and his patent covers all vegetable mucilages in general and specially those extracted from carrageen and Iceland mosses.

The above invention gave an impetus to others to study the creaming efficiency of gum Arabic, gum tragacanth, gum karaya, Algeinic acid, alginates and also materials containing hemicelluloses such as oat, wheat and barley straws; castor, rape, cotton, soya beans, groundnut and linseed meals; bean pods, copra, saw dust, methylated starches; and the gums extracted from certain thickened roots.

Researches by the United States Rubber Company have resulted in the addition to the above list the vegetable colloids obtained from the seeds of plants of several botanical species specially the Leguminosæ.

Experiments on creaming were carried out in the Travancore Rubber Works Laboratory in 1941-42 and it was found that the gums extracted from the leaves and bark of certain plants, specially Laurineæ *Sebifera* and *Malabar Vayana*, were able to cream the latex. Since the extraction of the creaming agent from large quantities of plant material was tedious and not practicable commercially further studies were dropped.

The mucilage obtained by cold or hot water extraction of the seed cover of *Trigonella foenum-graecum* was noted to cream latex very efficiently. The mucilage was prepared by immersing the seeds for about two days in water, boiling for about two hours and then filtering off the coteledons through cloth. The thick mucilage was mixed with latex of D.R.C. 35 per cent. and the mixture was heated to 50° C. and left undisturbed in a glass jar. Heavy curdling took place in about 30 minutes and in the course of about 6-8 hours cream of D.R.C. 58 per cent. and a lower layer of serum having a D.R.C. 0.2 per cent. were formed. A sample of cream obtained after four days' creaming had a D.R.C. of 63 per cent. This creaming agent is more efficient than the best creaming agent, sodium alginate. The creaming agent loses its colloidal state by keeping for more than four days and is not efficient thereafter. The gum extracted from 1 lb. of the seed is able to cream about 8 gallons of latex. The cream keeps well for months and the traces of creaming agent do not adversely affect the stability of the latex. It can be easily compounded with chemicals to manufacture dipped goods. The creaming agent is not efficient to cream *Cryptostegia latex*.

My thanks are due to Mr. P. R. Narayanan, B.Sc., for his assistance; and to the management of the Travancore Rubber Works for the facilities given to me.

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ON A NEW RECORD OF AN INSECT— BORER OF 'AMLA' (*PHYLLANTHUS* *EMBLICA*, L.)

DAMAGE was done to a number of plants by a moth at Shivajinagar in Poona during August-September 1944. It was observed that a few trees ranging from 1 to 3 feet in circumference were having bored holes in their trunk 2 feet above the ground-level. These holes were 2 to 3 inches deep, measured 0.4 inch in diameter at the openings, and had a silken web covering the entrance.

The observations were done from 15-8-1944 to 15-9-1944. The maximum temperature during this period was 33° C., the minimum 22° C., and the average humidity was 72 per cent. at 11 a.m.

Shiny, black moths, with yellow stripes on the abdomen, and golden yellow marks on the neck, thorax, and wing bases emerged nearly each day between 10 a.m. and 1 p.m. There was no emergence before or after this time. The pupa wriggled up to the entrance and the moth came out through the broken silken covering of the entrance. It was a very sluggish flier and attempts to breed it in the laboratories have failed. It was not traced to breed on any plants in the locality, during or after the above period of observation.

This moth has been identified to be *Paranthrene chrysochloris* Hmps. There is no record of the occurrence of this moth on Amla (*Phyllanthus emblica* L.). Amla is a crop of economic importance in our forests, and the importance of its fruits as a great

source of vitamin C has been shown by a number of workers (Srinivasan, 1944¹). It remains to be seen whether this has been noticed doing similar damage elsewhere. I was shown the observations on this very moth on this very tree during the same months and time taken in 1937. I am told by the reliable observer that no such damage was seen, neither this moth observed on this tree between 1937-1944. It thus remains to be seen whether similar gap of time is seen elsewhere in this moth on Amla. It may be suggested that if there are such regular gaps seen, then a periodicity as shown by Roonwal² (1944) may be indicated.

I am extremely thankful to Mr. J. C. M. Gardner, Entomologist, Forest Research Institute, Dehra Dun, for the identifications and information. Mr. H. P. Paranjpey, Retired Horticulturist, Poona, very kindly brought the damage to my notice and gave me all help in the observations.

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¹ *Nature* (33 2), 1941, 153, 684. ² *Curr. Sci.*, 1944, 13, (5), 135.

EVALUATION OF PEPTONE SUITABLE FOR PARENTERAL THERAPY

PEPTONE solution for parenteral administration is generally used for non-specific protein therapy. But it is not known on what compositions of such peptones, the therapeutic efficacy would depend. Accordingly, work in this direction has been undertaken in this laboratory and working with Witte's peptone and its fractionated primary and secondary proteoses prepared by ammonium sulphate precipitation and subsequent dialysis, it is being noticed that both the fractions along with the original whole Witte's peptone solution produce more or less pyrogenic reactions in rabbits. The solutions were all injected intravenously in equivalent doses in terms of nitrogen. The primary proteose fraction, however, gives rise to two distinct type of reactions which can be readily detected. One is an anaphylactoid shock reaction leading to hurried respiration followed by slow stertorous breathing, loss of sphincter control with involuntary micturition and defaecation, and loss of muscle tone developing into a flaccid paralysis of the hind legs. The other type is a hyper-pyrexial reaction causing severe rise in the body temperature (4° F. or more above the normal). It has been found that severity of these two types of reaction vary with the dose of primary fraction injected. Thus, with the higher doses (from 5.0 c.c. to 10 c.c. per kg. \equiv 25 to 50 mgm. nitrogen per kg.) the anaphylactoid reactions become more prominent and the hyper-pyrexial reaction is only a temporary one. But with the lower doses (2.5 c.c. to 5 c.c. per kg. \equiv 12 mgm. to 50 mgm. nitrogen) anaphylactoid reaction is absent, but there is a severe hyper-pyrexial reaction. This hyper-pyrexial reaction, of course, diminishes with the dose and merges into the pyrexial reaction,