The mucilage obtained by cold or hot water extraction of the seed cover of *Trigonella fœnumgrœcum* 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 looses 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 effect 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.

New Delhi, A. K. M. PILLAI.
November 1944.

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* Hmpsn. 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, 1944[1]). 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 Roonwal[2] (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.

Zoology Department, P. J. DEORAS.
Fergusson College,
Poona 4,
November 23, 1944.

1 *Nature* (38 2), 1944, **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. ≡ 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. ≡ 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,

which is of course associated with injection of all peptone solutions. In the cases of secondary proteose fraction and Witte's peptone (whole) solution, the reactions obtained are of the usual pyrexial type.

From the antigenicity tests in guineapigs, it is found that none of the fractions gave rise to any anaphylactic sensitization which was, however, invariably produced in animals injected with egg albumin.

Further work is in progress to find out which fraction would be of therapeutic value and what type of reaction could be taken as an index of therapeutic activity so far as its power of leucocytic mobilisation is concerned.

Bengal Immunity Research Laboratory, Calcutta, November 30, 1944. S. N. Sen. A. N. Bose.

A SIMPLE HIGH IMPEDANCE VOLTMETER

Due to its versatility the vacuum tube in its manifold forms has lent itself to a veriety of circuits for electrical measurements, particularly of voltages across high impedance sources. The circuit described here was developed in connection with the design of a sound intensity meter by one of us (N. B. B.) for acoustical measurements in the laboratory using a d.c. microammeter which was available as the indicating meter. Fig. 1 shows the circuit employed using a diodepentode tube in rather an unconventional way of preceding the diode part by the pentode stage for which the diode portion along with the indicating meter forms a part of the load. This offers the obvious advantage for a voltmeter circuit which should ideally have an infinite input impedance at all frequencies; the high input impedance of the pentode section is not seriously impaired by the load and its lower input capacitance offers a wider uniform frequency response.

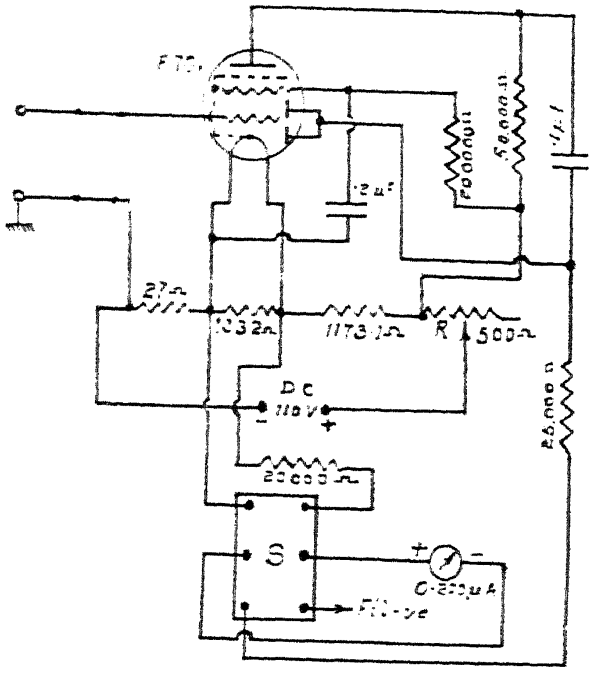

FIG. 1

Fig. 2 shows the calibration curve, using RCA type IF7GV tube, which is a straight line for the whole range; full scale deflection corresponds to an input of about 2·4 volts. Any further increase in the input voltage results in distortion introduced by the pentode

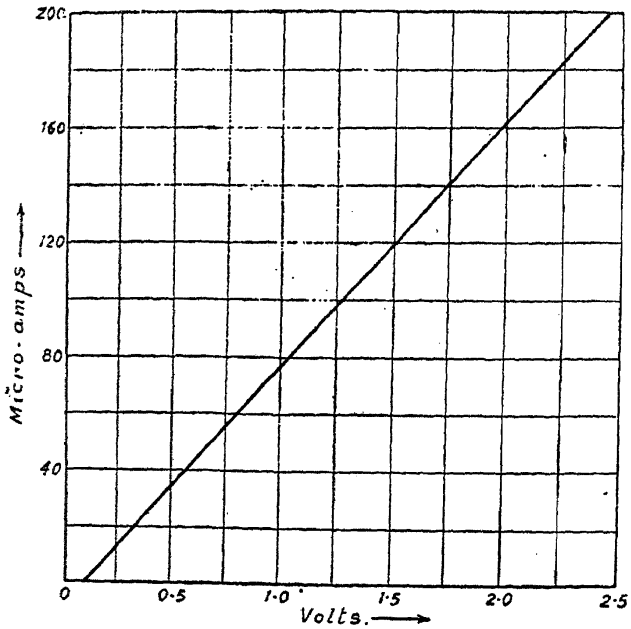

FIG. 2

stage. Hence for higher ranges, multiplier resistances should be used but they must have higher values so as not to bring down the input impedance of the voltmeter. The lower ranges of voltage will necessitate an additional pentode stage for amplification ahead of the voltmeter. Both these can easily be rigged up so that the voltmeter essentially works within the range specified by the curve in Fig. 2, which has been found the same for frequencies between 60 c.p.s and above 10,000 c.p.s.

The instrument is designed to work on 110 volt d.c. supply available in the laboratory but its low current consumption of about 80 m.a. will permit a dry battery operation, if necessary. The switch S (Fig. 1) is provided to check the correct operating voltage across the filament of the tube, which is read on the same meter; this operation simultaneously ensures the correct plate and grid bias voltages. The entire circuit is assembled in an aluminium box 6" × 5" × 4" in overall dimensions. Besides the switch the only control on the panel is a potentiometer which controls the supply voltage.

Recently T. A. Ledward has desecribed a voltmeter (*Wireless World*, Vol. L, 162, 1944 June) employing a similar idea using two diode-pentode tubes in a bridge circuit for essentially the same performance offered by the much simpler circuit described here with its modest demands on components, power consumption and attention.

Electroacoustics, Dept. of Electrical Technology, Indian Institute of Science, Bangalore, *December* 14, 1944. N. B. Bhatt. B. Subramanian.