

The computation of the damping is in this general case a trifle more tedious than when the soil is a pure conductance, but surely pays for the trouble taken. In the special case when  $\cos b = \sin b = 1/\sqrt{2}$ , i.e. the capacity effect just as great as the conductivity effect, we have the damping curve A drawn in full in the accompanying diagram (Fig. 1); for comparison the trivial case of  $\cos b = 1$ ,  $\sin b = 0$  is also shown (B).

The former curve explains the very remarkable feature, first revealed by Mr. Barfield himself on the Daventry station, and amply confirmed by Mr. Lemoine on the Swedish stations at Karlsborg and Motala, namely, that the damping is *negative* for the first 20 or 30 kilometres. This is nothing but a feint on the part of the woods, which soon revenge themselves by an almost catastrophic damping farther away. It is a happy coincidence on certain wave-lengths that, in day-time, reflection sets in at the right moment to reinforce the vanishing direct ray. The same effect ought also to be shown by great expanses of fresh water, for example, the very pure water of Lakes Wetter and Wæner in Sweden, where the conductivity seems to be of the order  $10^{-14}$  E.M.U.

The third curve drawn (C) is a by-product from the computations obtained by reversing the sign of  $b$ . This should be equivalent to introducing an inductive load, not improbably exerted by trees on waves shorter than their fundamental, thus explaining the very rapid decay of such waves when early entering a wood.

As the composite damping on the longer broadcasting wave-lengths is shown to be inversely proportional to something between the first and the second power of the wave-length, the Washington Conference of 1927 has seriously hampered the attempts to build up a broadcasting service in densely wooded and sparsely inhabited countries such as Sweden, by forbidding the use for this purpose of waves longer than 1850 m. No doubt this clause will be amended in the near future. In Sweden 'wood' means nothing less than some 40,000 trees per square kilometre!

It seems not improbable that a thorough investigation of the properties of various wave-lengths might result in better knowledge, and consequently better legislation.

BRUNO ROLF.

Meteorological Bureau,  
Stockholm, Feb. 23.

#### A Dogfish without Pelvic Girdle or Fins.

A SPECIMEN of *Scyllium canicula* was noted, amongst a number of dogfish received from Plymouth, in which the pelvic fins were entirely absent and the sex was consequently indeterminate externally.

This naturally raised the question as to whether the pelvic girdle was normally developed. Subsequent dissection showed that there was no trace of the girdle. The dissection also showed that the animal was a fully mature male with the internal urinogenital organs normally developed, but, correlated with the absence of pelvic fins, there was no trace of claspers.

The urinogenital papilla was situated somewhat nearer the vent than is usually the case.

Abdominal pores were present on each side of the cloaca, but they did not open internally to the coelom.

E. M. SHEPPARD.  
J. H. LLOYD.

University College,  
Cardiff.

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#### Functional Differences between Left and Right Splanchnic Nerves.

STIMULATION of the peripheral end of the divided right splanchnic nerve in the abdominal cavity has revealed several marked differences in the resultant effect upon the blood-pressure from the well-known results obtained by similar stimulation of the left nerve. If the right nerve be stimulated by successive stimuli of sufficient strength at frequent intervals, a rapid exhaustion of the nerve occurs. Using a rapidly interrupted current with the secondary coil 10 cm. from the primary and 2-volt accumulator, it is found that there is a rapid diminution in the pressor response, and after about four or five stimulations no further rise of blood-pressure can be elicited with the same strength of current.

I have obtained this effect with cats under various anaesthetics, and in the decerebrate and pithed conditions. Repeated attempts have failed to produce these results in the left nerve.

Coincident with the diminution of the rise of blood-pressure, a curious after rise becomes increasingly apparent. It occurs immediately after cessation of stimulation, and is very rapid in its formation. Ligation of the adrenal glands does not alter it, nor does ligation of the superior mesenteric or portal veins.

Continuation of the series of stimulations after exhaustion has taken place causes a *fall* of blood-pressure to be manifested, and eventually a condition is reached when even the strongest stimuli evoke falls of blood-pressure. The falls are most easily elicited by mechanical stimuli (Fig. 1).

Such results indicate that the right splanchnic nerve contains a considerable number of vaso-dilator fibres.

My thanks are due to Prof. Swale Vincent, without whose assistance and advice much of the work would have been impossible.

J. H. THOMPSON.

Department of Physiology,  
Middlesex Hospital Medical School, W.1.

#### Dug-out Canoe in Algoa Bay.

THE origin of the dug-out canoe, over which there was so much controversy, has now been finally settled. I have ascertained definitely that the canoes are in use in the East Indies, mostly at Celebes and the Malacca. At the latter place there are men who actually make them for sale.

The blocks with holes in them, at the sides of the canoe, are five in number. Three are for supports for plank seats on which the paddlers sit. The other two are for the purpose of securing the bamboos to which the outriggers are attached. The slot at the bottom of the canoe is for the insertion of the base of a pole for a sail.

F. W. FITZSIMONS.

Port Elizabeth Museum,  
Port Elizabeth, Feb. 18.

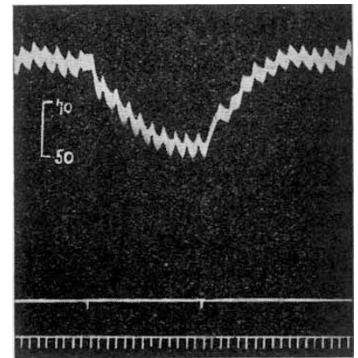


FIG. 1.—Mechanical stimulation of the peripheral end of the right splanchnic nerve by means of a glass rod producing a fall of blood-pressure. Time in 5 seconds.