stored in benzene or alcoholic solution. The writers prefer to use the term *cortical hormone* pending definite knowledge of the chemical nature and physiological function of the hormone or hormones involved. Further fractionation experiments are in progress.

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CERTAIN BIOLOGICAL EFFECTS OF HIGH FREQUENCY FIELDS

BIOLOGICAL utilization of the electromagnetic spectrum has only recently spread into the region between radio and infra-red rays, with promise of revealing a useful field. The material and methods used in the present study have some advantages in outlining the problems to be taken up in a subsequent detailed analysis of the biological effects of this physical force.

A preliminary survey of the individual variation in

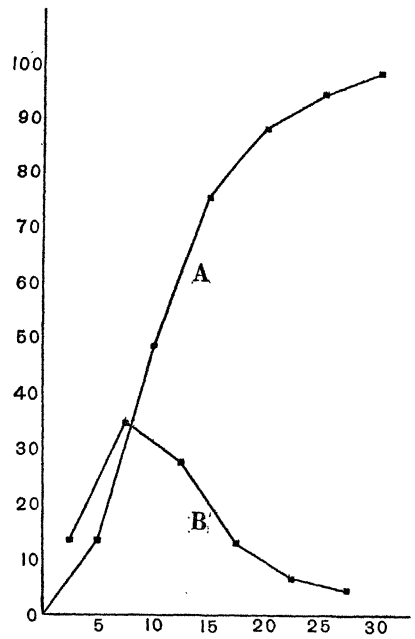

FIG. 1

Abscissae represent time of exposure in seconds; ordinates, per cent. of exposed wasps dead after twelve hours.

response of *Habrobracon juglandis*, a parasitic wasp, to the same dosage in a high frequency electrostatic field is here reported. Exposure was made at 3.5 meter wave-length and auxiliary circuit current of 1.8 amperes.

Material, nearly random as to age, sex, condition of feeding and metabolic state, as determined by temperature at which wasps have been kept, was used.

Wasps placed together in the field for the same length of time may be apparently lifeless, normal or in any intermediate condition at the end of the exposure.

Effects of the field were measured by lethality, which can not be determined immediately, since apparently lifeless individuals may recover, and normals die, within the first few hours after treatment. Groups of ten to fifteen were exposed together, and counts of living and dead were made twelve hours later when individuals could be assigned definitely to either group.

Curve A shows totals of such counts, expressed as percentage of total exposed which were dead after twelve hours, treatments being for five, ten, fifteen, twenty, twenty-five and thirty seconds. Curve B shows the increase in lethal percentage at each dosage over that of the next smaller exposure; it expresses the percentage of individuals expected to die within $\pm$ 2.5 seconds of each exposure time. The average time for death was 11.41 $\pm$ .09 seconds of treatment. The coefficient of variability was 56.27 $\pm$ .74 per cent., determined from 2,159 wasps.

An attempt is being made to determine any possible part age, sex, feeding and metabolic state may play in the wide range of individual susceptibility to the high frequency field, first observed by others in mice, by testing the range of variability under the action of each factor separately, the other three being kept constant.

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