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CATTLE IN THE PREVENTION OF MALARIA.

DRS. ROUBAUD AND LEGER in the course of a report on Malaria in Corsica make the interesting suggestion that when cattle are kept in closed houses near human habitations the anopheles maculipennis much prefers to feed on the cattle and leaves the human beings in peace. It is necessary to attend to the construction of the cattle sheds so that they may be acceptable to the mosquitoes, if they are open to the wind and the sun the mosquitoes will prefer to live in the human habitations, but if other conditions are equal they always select the cattle houses.

In India such a method of dealing with mosquitoes would doubtless appeal to the average villager who is not likely to have the slightest objection to keeping his cattle close to his house, and it is quite worth while to make a close study of the conditions under which cattle can be made use of as decoys for the protection of human beings.

The writers do not consider this method in itself sufficient, they lay stress on the use of quinine and anti-larval operations by drainage and the use of trioxymethylene as a larvicide.

It would be interesting to repeat the experiments of Dr. Roubaud and Dr. Leger in India and find whether the cow and buffalo of India are capable of lending their aid in the struggle against malaria.

NEW GENERAL ANÆSTHETIC.

DR. MACKENZIE WALLIS AND DR. HEWER in *The Lancet* of June 4th publish a paper read before the Section of Anæsthetics of the Royal Society of Medicine on April 1st, 1921, on a new anæsthetic for which they claim superiority to both ether and chloroform. Dr. Wallis was for many years engaged on the purification of ether and having eventually obtained a specimen free from impurities he found that it was no longer capable of producing anæsthesia.

Further investigations showed that certain ketones in the ether are responsible for producing anæsthesia. The ketones were treated with carbon dioxide and ethylene and were then dissolved in pure ether in varying proportions. The anæsthetic has been given in 500 cases by Dr. Langton Hewer, in some by Clover's inhaler followed by an open mask, in others by an open mask preceded by open ethyl chloride induction, in others by a modified Boyle's machine combined with nitrous oxide and oxygen, and in a few by intratracheal insufflation.

He claims the following advantages for the anæsthetic.

1. It is less toxic than chloroform or ether.
2. It is less irritating to the respiratory passage than ether.
3. Post anæsthetic vomiting is less than with chloroform or ether.
4. The taste and smell noticed afterwards by the patient is very much less than with ether; in fact they are generally entirely absent.

The anæsthetic is now placed on the market by Messrs. Savory and Moore under the name of "Ethanesal."

Dr. Wallis recognises that much more work remains to be done before an ideal general anæsthetic is available, but if the experiences of Dr. Hewer are confirmed by other users of the drug a distinct advance will have to be recorded. Apart from the question of the superiority or otherwise of Ethanesal there is no doubt as to Dr. Wallis being on the right lines in determining the active anæsthetising principle contained in ether.

Having done this and having eliminated the harmful impurities it becomes only a question of further patient research to discover a uniform, stable and satisfactory form of anæsthetic.

THE ROLE OF METEOROLOGY IN MALARIA.

IN the April number of the *Indian Journal of Medical Research*, Lt.-Col. C. A. Gill, I.M.S., Chief Malaria Medical Officer of the Panjab, discusses the part played by varying meteorological conditions in the spread of malaria.

The paper must be read in the original by all students of malaria, but for the sake of those who have not much time for reading a few of Col. Gill's conclusions are given.

It was found that a mean monthly relative humidity at 8 a.m. of 63 per cent. is the lowest limit compatible with the transmission of malaria in the Panjab. It was also found that there was a pronounced tendency for the fever mortality in the autumn to vary directly with the degree of air humidity existing during the pre-epidemic period.

There were other factors concerned so that high humidity in itself was not sufficient to cause an epidemic of malaria.

In different areas the relation between humidity and "Fevers" is very variable. Rainfall in the Panjab affects the prevalence of malaria not only by favouring the breeding of anophelines but also by influencing the relative humidity of the atmosphere. Excessive rainfall is one of the essential preliminaries to the occurrence of a malaria epidemic in the Panjab, but excessive rainfall alone is, of course, not sufficient to bring about an epidemic.

Col. Gill states that the conditions of temperature and moisture which are essential to the transmission of infection are a monthly mean temperature of 61°F. or over and a monthly mean relative humidity of not less than 63 per cent. and the periods during which these conditions prevail are called the "potential periods of infection."

It was found that the culex mosquito which was the one used for the experiment was very susceptible to a dry atmosphere. With a humidity of less than about 48 per cent. at a temperature of 27°C. it does not survive for more than five days while with a relative humidity of 60 to 80 per cent. life is prolonged to ten days or more under the same conditions. It was found that the mosquitoes prefer places where the air is moist.

It was also found that they feed much more readily when the relative humidity is 50 per cent. than when it is 40 per cent.

Col. Gill has raised a very important question and it must be evident to every one that while there are many other factors of importance in connection with the spread of malarial infection there are good grounds for thinking that the collaboration of a meteorologist with the malarial expert may lead to a great advance in connection with the predicting of malarial epidemics.

ENDEMIC GOITRE.

THE brilliant work by Lt.-Col. McCarrison, I.M.S., on this subject might be supposed to have settled once for all the question of the causation of endemic goitre.

But in spite of the careful experimental work done by McCarrison there remained the serious difficulty of explaining why the disease has remained essentially a place disease, from generation to generation.

The hypothesis of an intestinal infection is not easily reconciled with the remarkable distribution of the disease.

There are certain areas in India in which the disease is extremely common north of the Ganges and very uncommon south of the river.

The only factor which appears to account for this distribution is the presence in the northern areas of rivers which come from the Himalayas and which periodically overflow their banks, so that the tanks and shallow wells of the surrounding areas become filled with water coming from the hills. Some of the people drink the river water all the year round, others get their supply from tanks and wells which are affected in their composition by the inflow of water from the rivers in the rainy season.

The question then arises. In what respect does the water of the rivers that rise in the Himalayas differ from that of the rivers that arise in the plains of India?

The old reply was that some chemical substance was dissolved from the soil or rocks in the hilly regions which gave rise to the enlargement of the thyroid gland in some unexplained way.

McCarrison brought forward evidence to show that the disease could be produced experimentally by the ingestion of fæcal contamination and he came to the conclusion that some living virus was responsible.

The evidence brought forward was so convincing that McCarrison's view is now almost universally accepted.

But there is still the difficulty of the geographical distribution.

Why should this virus be confined to certain sharply defined areas and why should it persist in these for indefinite periods?

Fæcal contamination of the water is not a satisfactory explanation as there is no evidence of a greater degree of fæcal contamination in the affected areas than in the non-affected. It may be suggested that the composition of the water is such that the particular virus which causes goitre can only live in waters having a certain composition while other waters are unsuitable. The old hypothesis of some chemical constituent in the water fits in much more readily with the geographical distribution of the disease, in fact, directly or indirectly the chemical hypothesis appears to offer the only reasonable solution of the disease. It may be that the chemical in the water is the direct cause or it may be that the chemical affected