The Discovery of a Remedy for Malignant Jaundice in the Dog and for Redwater in Cattle.

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Judging from the literature relating to piroplasmosis, no drug is known which exerts any curative action on either canine or bovine piroplasmosis. The canine disease is exceedingly fatal, and, in certain localities, especially in South Africa, it is almost impossible to keep dogs. On the other hand, the disease in cattle causes enormous financial losses, especially in America, Australia, and Africa, not only by causing a considerable mortality, but also by producing a long-lasting anæmia in many of the affected animals.

The discovery of a drug which will bring about a cure of piroplasmosis is therefore a matter of practical importance. Our object in publishing this communication is to announce the discovery of such a remedy. Whilst a full description of our experiments will shortly be published in 'Parasitology,' we desire to place the main facts on record.

Canine Piroplasmosis.

We have discovered that trypanblau and trypanrot are highly efficient remedies in the treatment of canine piroplasmosis. The drugs exert a direct and observable effect upon the parasites by causing the pyriform parasites to quickly disappear; in most cases causing the total disappearance of the parasites from microscopic observation in the peripheral blood. The disappearance of the parasite is usually temporary, since they may reappear in small numbers after an interval of 9 to 12 days; the treated dogs, as a rule, show no symptoms and gradually progress towards complete recovery. In our experience the treated dogs show little or no loss of weight; this being in marked contrast to what is usually observed in the dogs which chance to recover naturally.

Our experiments were carried out upon 20 dogs of various breeds and ages, the majority being highly susceptible puppies. We experimented with a very virulent strain of *Piroplasma canis* from Cape Colony. All of the 7 control (untreated) dogs died of piroplasmosis: 6 died within 7 to 13 days, and 1 on the 36th day after inoculation with virulent blood.

The remaining dogs, 13 in number, were treated as follows:—

Results of Treatment with Trypanblau (up to June 17, 1909).

Dog.	Treated dogs.	Control dogs. (Inoculated at the same time as the treated dogs.)
1	Kept under observation 90 days.....	Control died after 7 days.
2	„ „ 83 „	„ „ 7 „
3	„ „ 69 „	„ „ 9 „
4	„ „ 65 „	„ „ 8 „
5	„ „ 42 „	„ „ 36 „
6	„ „ 43 „	„ „ 8 „
7	„ „ 52 „	„ „ 7 „
8	Died of relapse after 13 „	„ „ 7 „
9	„ „ 15 „	„ „ 7 „
10	Treated when moribund, the dog died three hours later, but the drug obviously affected the parasites	
11	Treated 24 hours after inoculation (*i.e.* before the parasites had appeared), dog alive and well after 65 days; it never showed parasites	„ „ 7 „

Results of Treatment with Trypanrot.

Dog.	Treated dogs.	Control dogs.
12	Alive and well after 111 days	Control dog died after 9 days.
13	Treated in an advanced stage of the disease, the dog died 20 days after inoculation, but no parasites could be found in the blood. The dog apparently died from the after effects of piroplasmosis	„ „ 7 „

The above table speaks for itself, it scarcely requires any comment. We very much regret that we have lost four of our treated dogs from inter-current disease. Two of these dogs died of distemper (42 and 43 days respectively after inoculation), one died of distemper and mange combined (69 days after inoculation), and one died of severe generalised mange due to *Demodex folliculorum* (52 days after inoculation). Dog 13 was treated in an advanced stage of the disease, but its life was prolonged; it is worthy of note that no parasites could be found in the animal at autopsy. Dog 10 was treated only three hours before death; the drug markedly affected the parasites, but it was too late to save the dog's life. In only two cases did we see a relapse follow five days after apparently successful treatment; this was in two very small and poorly developed puppies. The remaining dogs are alive and well to-day and show no parasites microscopically in their blood.

As previously stated, the drugs exert a direct effect upon the parasites. The percentage of infected corpuscles is decreased, the pyriform parasites disappear, rounded and degenerated parasites are seen for a time, and, after

a while, all parasites are lost to view. When, after an interval, the parasites reappear, they do so in exceedingly small numbers, and, after a while, they disappear completely and finally.

All of our dogs were treated by subcutaneous injections of saturated solutions of the dyes.

Bovine Piroplasmosis.

With regard to redwater, we are in a position to state that trypanblau exerts a very prompt effect upon the parasite. The effect is precisely similar to that observed in *Piroplasma canis*. Our experiments upon the bovine disease are still in progress, but we feel that they are sufficiently advanced to warrant the trial of the remedy in the field. We shall report upon our results in a future communication.

The results of these experiments are of considerable interest, since they throw additional light upon the biology of the parasites and entirely confirm the observations of Nuttall and Graham-Smith upon the usual mode of multiplication of the parasites in the circulating blood. The striking effects of the drugs upon the parasites led us directly to make enumerations of the different forms of parasites occurring in the blood of treated and untreated animals. The result of these observations has been to bring to light several interesting facts regarding the life-history of the parasites.

East Coast Fever.

Incidentally we may mention that in one experiment which we have tried, trypanblau exerted no effect whatsoever on the parasite of East Coast Fever in cattle. This does not appear to us surprising, since the parasite is very different from *Piroplasma*, although most writers still persist in retaining it in the genus. For reasons stated elsewhere by Nuttall (1908), the parasite of East Coast Fever should be named *Theileria parva*.

Conclusions.

The obvious practical conclusions to be drawn from our results is that the remedies will prove of value in practice. It is highly probable that they will act in a similar manner in relation to equine and ovine piroplasmosis. The mere fact that remedial agents have been found for diseases which have hitherto run their course, in spite of all treatment, is encouraging, since with time we may reasonably hope to cope with these maladies in an efficient manner.