Physical Signs.—Pupils: right greater than left; left shows no reaction to light, right sluggish. Lingual and labial tremors. Knee-jerks and ankle-jerks absent; Rombergism present. Wassermann reaction: blood positive; cerebro-spinal fluid, 10 cells per cubic millimetre. Globulin and Wassermann reactions positive. Colloidal gold test positive; paretic curve.

Present Condition (three months after malarial treatment).—Mental condition shows a remarkable improvement. No seizures have occurred. Speech is practically normal, and there is no evidence of hallucinations. Has now started light mechanical work at a garage.

CASE III.

J. G., aged 30; general paralysis of the insane. Had syphilis in 1914 and was inadequately treated. In October, 1922, he "lost his speech" momentarily; this recurred every month or so until a few weeks ago, when he became speechless for twenty-four hours and also suffered from transient hemiplegia. For the past few weeks he has been quite unable to carry on his work as "decorative artist." Mentally he was somewhat elated, unduly inquisitive, and slow in replying to questions. His wife stated that he frequently talked "nonsense."

Physical Signs.—Pupils: right greater than left; Argyll Robertson; slight lingual tremors. Knee-jerks present, right greater than left. Ankle-jerks present. Wassermann reaction: blood positive; cerebro-spinal fluid, 18 cells per cubic millimetre. Globulin and Wassermann reactions positive. Colloidal gold test positive; paretic curve.

Present Condition (six weeks after treatment).—Mentally brighter and answers questions rationally and intelligently; he is carrying on his work quite satisfactorily. No further attacks of speechlessness. His wife states that he no longer talks nonsense.

In four other cases the improvement is very definite, while four may be said to have improved slightly. Of the two advanced cases treated, one was a profound dement in poor physical condition and had no conversation beyond a grunt. At the conclusion of the malarial attacks he was able to give some details of his naval service, but relapsed after a few weeks into his former mental state; his physical condition, however, is greatly improved and there is no evidence that his mental condition is becoming worse. The second advanced case showed no very definite change beyond a slightly increased degree of intelligence.

It is recognized that a considerable period from the time of treatment must elapse before results can be accurately gauged and the method of treatment assessed at its true value, especially as the full effect of treatment is said not to be manifest immediately after the termination of the malarial attacks but to appear gradually. Thus far, however, the results in early cases are distinctly encouraging.

In conclusion, we desire to express our thanks to Dr. G. C. Low and Dr. Gregg for enabling us to obtain malarial blood, and to Dr. A. Y. Cochrane, casualty physician at the West End Hospital for Nervous Diseases, for much valuable assistance.

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THE SERUM-ALDEHYDE TEST APPLIED TO TRYPANOSOMIASIS:

OBSERVATIONS ON CAMELS.

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IN August, 1921, a brief note was published in the *BRITISH MEDICAL JOURNAL*¹ of a new reaction for kala-azar discovered whilst investigating the behaviour of the serums of various diseases to commercial formalin in the light of the Gaté and Papacostas reaction for syphilis. The reaction in kala-azar, which differs from the now discredited reaction in syphilis in that the serum becomes first opalescent and then opaque as well as firmly solid in the presence of formalin, was independently discovered by Mackie and Fox² working together, and was carefully investigated by L. E. Napier³ of the Kala-azar Research Department of the Calcutta School of Tropical Medicine, who put it on such an assured footing that it is now used and accepted wherever kala-azar occurs.

In my original notice I suggested that the reaction should be tried in trypanosomiasis, and might prove positive in that disease in view of the close relation of the Leishman-Donovan body to the trypanosome, but I have not been able to find out whether any work has been done on this line in countries where human trypanosomiasis is seen.

Recently I have been able to test the reaction in surra, a trypanosome disease of camels, which causes much sickness and mortality in camel corps, as it is not easily diagnosed except at uncertain periods when the trypanosomes appear in the blood in large or small numbers. The disease is easily cured by tartar emetic provided that no trypanosomes are found in the blood at the time of injection; frequently even small doses are rapidly fatal in the presence of circulating trypanosomes.

The reaction is performed by adding a large drop of commercial formalin (which must smell strongly of formalin) to about 1 c.cm. of the serum in a test tube. The result is read in twelve hours, but is even more definite in twenty-four or forty-eight hours. As in the same test for kala-azar, strictly sterile serum is desirable, but not essential—an important point where one may have to depend on semi-skilled assistance for much of the field routine work involved.

RESULTS OF SERUM-ALDEHYDE TEST IN SURRA.

Camel.	Blood for Trypanosomes.	Days under Treatment.	Amount of T.E. given.	Result of Serum Test.
1	++	nil	nil	Opalescent and gelatinous; tube can be inverted.
2	++	nil	nil	Ditto
3	++	nil	nil	Ditto
4	+	10	0.2 gm.	Opalescent and firmly gelatinous; tube can be inverted.
5	—	27	11.45 gm.	Opalescent and gelatinous; tube can be inverted.
6	—	5)	30.0 gm.	Faintly opalescent, liquid, slightly viscous.
7	—	—	—	Clear and liquid.
8	—	—	—	Clear and liquid.

Camels 7 and 8 were healthy animals used as controls.

The value of the reaction is that it does not depend on the presence of trypanosomes circulating in the blood in demonstrable numbers, and would remain positive in undiagnosed chronic or carrier cases which might appear healthy and whose blood would be negative to trypanosomes except after a daily film examination extending perhaps over weeks, which is not practicable as it would involve careful search of every camel's blood every day in every camel corps. Surra is the only haematozoic disease of camels known, so that the reaction would not be given in any other camel disease.

Moreover, as pointed out to me by an army veterinary officer, all camels bought by Government could be tested for surra, active or latent, before being accepted.

In most cured cases of kala-azar the reaction is entirely lost by the blood serum a few months after completion of treatment, and it would appear that the same may be true in surra, in which disease the reaction is now being worked out on a large scale. It would be of great interest to try the reaction on "cured" cases of human trypanosomiasis as well as on active cases, as it might well prove of value in indicating a definite cure; but as this disease does not occur in India it cannot be worked out here.

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THE *Boston Medical and Surgical Journal* for November 15th, 1923, includes the text of the speeches delivered at the opening of the Thorndike Memorial Laboratory. This building, which is in connexion with the Boston (U.S.A.) City Hospital, contains a spacious and modern x-ray department, and also laboratories for research. This, it is said, is the first organization of its kind in the United States, and constitutes a definite recognition of the value of medical research to a municipal hospital. A ward for about twenty patients is provided, and is divided into small rooms, each holding from one to six beds. The building has been erected in memory of Dr. W. H. Thorndike, who was on the surgical staff of the Boston City Hospital from 1866 to 1883.