HIGHEST DILUTIONS COMPLETELY INHIBITING GROWTH IN 48 HOURS AT 37° C. (MEDIUM: PEPTONE-BROTH CONTAINING 10 PER CENT SERUM; pH 7·2.)

Substance	*M. salivii*	*Strept. haem A.*	*Strept. aureus*	*E. coli*	*Proteus vulgaris*
Arsenoxide (*m*-amino-*p*-hydroxyphenylarsenoxide)	1 : 160,000	1 : 80,000	1 : 160,000	1 : 10,000	1 : 10,000
Acetarsol B.P. (*m*-acetylamino-*p*-hydroxyphenyl-arsenic acid)	*	*	*	*	*
Novarsphenamine B.P. (*N*-methylenesulphoxylate of *m*-amino-*p*-hydroxy-arsenobenzene	1 : 10,000	1 : 10,000	1 : 10,000	*	*
Arsenoxide in 0·1 per cent thioglycollate broth	1 : 5,000	1 : 10,000	*	*	*
Proflavine (2 : 8-diaminoacridine)	1 : 320,000	1 : 160,000	1 : 80,000	1 : 80,000	1 : 10,000
Mercuric chloride	1 : 40,000	1 : 160,000	1 : 40,000	1 : 80,000	1 : 80,000

* Signifies not inhibitory at 1 : 5,000.

at the arsenoxide level of oxidation is a potent antibacterial acting after the fashion of the mercurials, whereas closely related arsenicals at both higher and lower levels of oxidation are inactive. Hence the Voegtlin and the Fildes hypotheses are more closely linked than heretofore. This hitherto unsuspected antistaphylococcal action of arsenoxide is, in our experience, inferior only to that of penicillin, ethyl mercurithiosalicylate ('Merthiolate') and crystal violet. In view of the widespread experience of the use of this drug in syphilis, it should not be a difficult matter to determine whether it is clinically useful in staphylococcal infections.

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Cataphoretic Velocities of Pure Copper Ferrocyanide Sol

THE cataphoretic velocities of the sols formed from the precipitates from potassium ferrocyanide and copper sulphate solutions peptized with water after washing by centrifugalization were measured by the microcataphoretic method[1].

In the pure sol of copper ferrocyanide, the cataphoretic velocities of particles of different sizes vary from $-16{\cdot}5 \times 10^{-5}$ to $-56{\cdot}8 \times 10^{-5}$ cm. per sec. per volt/cm. It is found that the larger particles move with a higher velocity and smaller particles with a lower velocity. Therefore the velocity we actually get after calculation is the average of all the velocities of all the particles.

The cataphoretic velocities of centrifuged sols are less than those of the non-centrifuged sols[2]. The cataphoretic velocities of a sol increase with time. If the non-centrifuged sol be kept for a month and then centrifuged, it is found that the centrifuged sol has a higher velocity than the non-centrifuged sol.

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A Method for Collecting Sporozoites of *Plasmodium gallinaceum* by Feeding Infected *Aedes aegypti* through Animal Membranes

THE well-known difference between the resistance of blood-inoculated and mosquito-induced malaria indicates that sporozoites, or the stages arising immediately from them, are very resistant to the action of the known anti-malarial drugs. Since a true prophylactic drug, that is, one which will prevent sporozoite-induced infections, is the most urgent requirement in the chemotherapy of malaria, a method for testing drugs directly on sporozoites is of great importance. Hitherto the only method of doing this was to obtain sporozoites by the dissection of salivary glands from infected mosquitoes, which is both laborious and unsatisfactory, as the sporozoites are always mixed with and may be protected by fragments of the salivary gland cells. Thus it is difficult to obtain them in uniform suspension and to be sure that they are all exposed equally to the action of the admixed drugs being tested.

In order to overcome these difficulties, we began to work upon the possibility of obtaining sporozoites free from gland tissue by feeding infected mosquitoes (*Aedes aegypti*) through animal membranes. Gordon[1] had shown that mosquitoes would feed through a fresh animal membrane, and Yoeli[2] had infected *Anopheles elutus* with *Plasmodium falciparum* by inducing the mosquitoes to gorge upon infected blood through a prepared rabbit-skin membrane.

The type of membrane which we have found to be the most successful is one made of chicken skin. We prepared it by soaking the skin of a 1–3 week old chick in absolute alcohol for at least 30 minutes, washing it in running tap water and stretching it over a piece of glass tubing 2·5 cm. × 6 cm., and keeping it in place, until dry, by a thin rubber band. On drying, the skin is thin and parchment-like and adheres firmly round the glass tubing, making a water-tight seal.

The highest rates of gorging are obtained when the blood in the membrane (1·5–3 c.c. of heparinized chick blood) is warmed to 41–42° C. and kept warm by a surrounding water-jacket filled with water at that temperature. Moistening the outer side of the membrane, that is, that presented to the mosquitoes, with saliva also increases the rate of gorging as compared with a dry surface. The apparatus is placed upon the mosquito-netted top of a jar containing *Aedes aegypti* so that the surface of the membrane rests upon the netting. Gorging is effected in the dark in an incubator at 28° C., in a moist atmosphere.

We have infected *Aedes aegypti* with *Plasmodium gallinaceum* by feeding mosquitoes through a mem-