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Observations on the action of novasural in heart disease.

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Novasural is a preparation containing 33.9 per cent of mercury bound in a large molecule. It is given as a 10 per cent solution in doses of 1 to 2 cc. It was originally introduced as an antisyphilitic, but its marked action on urine output suggested its use as a diuretic. It was first used for this purpose by Zeiler.¹ Later studies have been published by Saxl and Herlig,² Mührling³ and Nonnenbruch.⁴ These writers agree as to its efficiency as a diuretic in selected cases, but fail to agree on the mechanism of its action.

In our cases novasural has been administered to patients with severe heart failure and edema in whom digitalis had failed to relieve the edema. It has been administered in 1 to 2 cc. doses intramuscularly and has been followed by a striking diuresis—the output often rising from 300 cc. to 2000 to 3000 cc. per diem.

The diuresis as a rule starts within two hours and attains its maximum in three to nine hours. The more serious the case, the more delayed is the time of the maximum diuretic effect. The action passes off in about 24 hours.

Studies have been made of the urine, blood, and when possible the edema fluid before, during and after the diuresis. During the diuresis the total output of chlorides in the urine is increased and the concentration is also increased. The total urea and ammonia in the urine may be increased, but the concentration is reduced. The blood chlorides are slightly reduced and the chlorides in the edema fluid follow closely those of the blood. The blood urea shows practically no alteration.

There has been marked clinical improvement in all cases and no untoward effects have been observed.

¹ Zeiler, *Münch. med. Wchnschr.*, 1917, xxxix, 1257.

² Saxl and Herlig, *Wien. klin. Wchnschr.*, 1920, xxxiii, 943.

³ Mührling, *Münch. med. Wchnschr.*, 1921, lxxviii, 1447.

⁴ Nonnenbruch, *Münch. med. Wchnschr.*, 1921, lxxviii, 1282.

The urine was examined daily for albumen, red blood cells and casts to study whether any damage was done to the kidneys. No evidence of any such damage was found during the month following the injections. In fact these findings improved along with an apparent improvement in the circulation.

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Effect of menotoxin on the viability of spermatozoa.

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Macht and Lubin have called attention first in these Proceedings and again in a more extensive publication appearing elsewhere to the remarkable phytopharmacological properties of menotoxin, the toxin present in the blood and other secretions of women at the beginning of menstruation. It was pointed out that while this toxin was extremely poisonous for plant protoplasm it was comparatively very little poisonous for animal tissues, although differences in toxicity between normal and menstrual blood for animals have been found. This difference between the phytopharmacological and zoöpharmacological actions of menotoxin were shown to hold for microscopic organisms as well. Thus menstrual serum was quite toxic for bacteria such as *B. coli* which are generally classed with plants on the one hand, and the same serum was but slightly toxic for trypanosomes which are more closely related to animals, such as the flagellates, on the other. In this connection it was interesting to inquire into the toxicity of menotoxin for spermatozoa.

Fresh and actively motile spermatozoa were obtained from men and the effect of various toxins was studied on the same in hanging drop preparations. It was found that menstrual serum was not more toxic for spermatazoa than normal serum. The authors made further studies on the effect of various chemicals which seem to be closely related to menotoxin. As has been pointed out by Macht and Lubin, menotoxin exhibits chemical