

anthisan (neoantergan malleate). The dosage required was between 0.3 and 0.8 g. a day, given in divided doses. Most of these cases were well controlled and had only mild side-effects. Once the required dosage was established increased tolerance to the drug was not observed in the first three months of treatment. Removal of the drug or reduction of the dosage was followed within ten hours to four days by a recurrence of chronic urticaria.

Six cases of acute urticaria were treated, 5 of them the result of sensitisation to penicillin, and in 2 of these the urticaria was controlled even though penicillin treatment was continued. If this effect is confirmed it will allow penicillin therapy to be continued even in patients who manifest severe urticarial reactions.

The commonest side-effects noted were sleepiness, mild headache, nausea, and dizziness. In the main they were not severe. Two patients had a single asthmatic attack during treatment. One severe toxic reaction to parenteral therapy was observed, and it is suggested that in the present state of our knowledge the drug should be administered by mouth only. It is proposed that the initial dosage should be 0.1 g. three times a day and that this should be increased as required to a maximum of 1 g. a day.

Grateful acknowledgment is made to Prof. D. M. Dunlop for his advice and criticism, and also permission to publish his case-records. We are indebted to Messrs. May and Baker Ltd. for supplies of tablets of anthisan.

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## SHRAPNEL SHOT THROUGH THE PLACENTA

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DURING the Palestine disturbances in August, 1939, a woman, aged 24, a primipara nearing term, sustained an injury from the explosion of a nearby bomb. She felt a sharp pain in the abdomen, walked on a little way, and then collapsed. In this condition she was brought to the hospital.

On the right hypogastrium, below the umbilicus, four wounds were visible, the largest of them about 2 cm. in diameter. The innocuous external appearance of the injuries contrasted with the serious general condition. The patient was very anæmic and covered with cold sweat; the pulse was rapid and feeble. All the symptoms pointed to an internal hæmorrhage. The fetal heart was not distinctly heard, and it was very doubtful whether the foetus was living.

The patient was given an intravenous saline drip infusion and placed under ether anæsthesia. The abdomen was opened through a hypogastric longitudinal incision. The bomb shrapnel was found to have pierced the rectus fascia and muscle, leaving a large hole through which torn muscle protruded. There was considerable hæmorrhage.

When the peritoneum was opened, two perforations, each about 1 cm. in diameter, were found in the uterus. Blood and amniotic fluid dripped through the perforations. The abdominal cavity contained about 200 c.cm. of blood and

amniotic fluid. The uterus was opened through a longitudinal incision. Its muscles had been much torn, with strips of muscle hanging loosely in the uterine cavity.

A male child was then extracted; the child was born in pallid asphyxia, which was relieved after treatment lasting 45 min. In other respects he had escaped unhurt.

The placenta was readily separable; it had been shot through near the edge. One of its blood-vessels had been perforated, from which extensive bleeding had taken place into the amniotic cavity.

After complete excision of all the torn tissues, the uterus was sutured in three layers, as in cæsarean section. The bladder had sustained no injury, and it was possible to cover the sutures with bladder peritoneum. No injury to intestines having been found, the peritoneum was closed. The torn soft tissues of the abdominal wall were excised, the skin perforations were sutured, and a drain was inserted.

The postoperative course was undisturbed except for an infection of the abdominal wall. The peritoneum gave no cause for concern. Four weeks later the patient was discharged.

Careful radiography had not revealed the shrapnel which must have entered the uterine cavity; it had doubtless been expelled thence through the vagina during the operation.

Had the patient not been pregnant, the shrapnel would undoubtedly have torn the intestines; but these were shielded by the uterus and the amniotic fluid. The foetus therefore saved its mother.

We have kept the child under observation up to now; he has developed well physically and mentally.

Five years later, early in 1944, the patient consulted me for a missed menstruation. The Aschheim-Zondek hormonal pregnancy test was positive. The patient was aware that her pregnancy, in view of the severe uterine tear which she had sustained, entailed some danger, but she accepted the risk, as she very much desired a second child. She came to me for examination once a month. The pregnancy ran a normal course. At term the question arose whether a cæsarean section should be performed to avoid uterine rupture from the labour pains. In view of my experience in conservative myomectomy and of the favourable outcome of conservative management of delivery in cases so operated on,<sup>1</sup> I decided not to perform a cæsarean section. Labour ran a normal course and lasted only four hours. A healthy boy was born. The placenta was expelled spontaneously without difficulty.

## PALUDRINE IN RELAPSING BENIGN TERTIAN MALARIA

### FURTHER TRIALS

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FOLLOWING the trials with 'Paludrine' already reported (Johnstone 1946a), a further series of cases of relapsing benign tertian malaria were treated at Colchester Military Hospital with paludrine and quinine combined. This treatment was thought to have distinct possibilities in view of the similarity in action of paludrine and pamaquin. As before, a control series of cases treated with the standard quinine-pamaquin course were included in the investigations. Unfortunately the number of admissions to the malaria ward fell so considerably as the investigation progressed that it was finally decided to abandon the trials before an adequate number of cases had been treated. The results, however, seem worth recording.

Exactly similar precautions, admission to hospital, and follow-up were used as in the previous investigations.

In all, 61 cases were treated on the following courses, each course being used alternately:

- (1) Quinine gr. 10 and pamaquin 0.01 g. t.d.s. for 10 days.
- (2) Quinine gr. 10 and paludrine 0.25 g. t.d.s. for 10 days.

1. Zondek, B. *Harefuah*, 1936, **11**, 1; *Surg. Gynec. Obstet.* 1939, **69**, 214.

The final follow-up in these cases includes 29 cases of each series, two patients having failed to report in spite of repeated requests, and one patient having been accidentally killed before the end of the six-month period. The table shows the results obtained in the 58 cases successfully followed for six months.

RESULTS OF TREATMENT

| Course                | No. of cases | No relapse | Proved relapse | Clinical relapse* | Percentage of proved relapses | Percentage of total relapses |
|-----------------------|--------------|------------|----------------|-------------------|-------------------------------|------------------------------|
| Quinine and paludrine | 29           | 18         | 3              | 8                 | 10.3                          | 37.9                         |
| Quinine and pamaquin  | 29           | 24         | 2              | 3                 | 6.9                           | 17.2                         |

\* The criteria of clinical relapse include the history of a rigor and a tertian periodicity of symptoms.

The factors which may have influenced the results have been briefly compared in the two series.

(1) The average intervals between the date of arrival in the U.K. and the date of admission to hospital were for quinine-paludrine 4.8 months, and for quinine-pamaquin 4.1 months.

(2) The probable areas of infection were as follows:

|                      | India-Burma | Far East (P.O.W.) | Other areas |
|----------------------|-------------|-------------------|-------------|
| Quinine-paludrine .. | 24          | 4                 | 1           |
| Quinine-pamaquin..   | 20          | 4                 | 5           |

The fact that each series contains equal numbers of patients who had been in captivity in the Far East obviates any possible bias due to the higher relapse-rate that is to be expected in that group.

(3) The average intervals between treatment and further relapse were for quinine-paludrine 3.6 months, and for quinine-pamaquin 3.7 months.

It was previously thought that paludrine possibly gave a longer period of freedom from relapse than did the combined pamaquin-quinine treatment (Johnstone 1946a). This suggestion is not borne out by the present investigation, in spite of the fact that the dosage of paludrine was larger than in the previous investigation.

(4) As would be expected, no difference was noted in the rapidity with which the temperature fell to normal in the two series, since both received equally large doses of quinine.

#### CONCLUSIONS

This series is too small for conclusions to be drawn regarding an exact relapse-rate, but the results indicate that paludrine with quinine is not so effective as pamaquin with quinine for controlling further relapses of benign tertian malaria.

The possibility that paludrine may have a synergistic action similar to that of pamaquin has not been confirmed.

The results obtained in the quinine-pamaquin series closely approximate to those previously reported (Johnstone 1946a and b, Malaria Committee 1945), and the quinine-paludrine results are very similar to those found with paludrine alone (Johnstone 1946a), mepacrine (Malaria Committee 1945), and '4430' (Johnstone 1946b).

I wish to thank Major-General Sir Alexander Biggam for permission to publish this paper; and many members of the staff of the Colchester Military Hospital for their help. I am indebted to Imperial Chemical (Pharmaceuticals) Ltd. for the supplies of paludrine.

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## Reviews of Books

### Renal Diseases

E. T. BELL, M.D., professor of pathology, University of Minnesota. London: H. Kimpton. 1946. Pp. 434. 35s.

Professor Bell's renown as a morbid anatomist and his special interest in the kidney are well known; his monograph, besides surveying the literature of both medical and surgical diseases of the kidney, contains a detailed analysis of renal cases in a series of 32,360 autopsies, with statistics and numerous case-records. It is primarily an exposition of pathological findings and their interpretations, and it is well illustrated with 117 photographs and 4 colour plates, all original, well chosen, and germane. The section on tubular disease is disproportionately short, perhaps because Dr. Bell is interested mainly in the glomerular basement-membrane (as his good account of the diabetic kidney shows). He hopes, he says, to encourage closer co-operation between pathologist and clinician; and if pointing out the gaps and contradictions in our knowledge of function will help to fill and resolve them, the book should fulfil its purpose. At present we know little of the functional aspects of renal disease, except in essential hypertension, and it is inevitable that the chapters on function and functional disturbances ("extrarenal azotæmia") should be less satisfactory than the rest. Clinicians will regret the absence of clinical charts or diagrams, and the scanty reference to the grosser biochemical disturbances; and English readers will be surprised to find no mention of the work on nephritis of Ellis, Evans, and Wilson. Despite these minor criticisms the book is a stimulating achievement.

### Ranson's Anatomy of the Nervous System

(8th ed.) Revised by SAM LILLARD CLARK, M.D., PH.D., professor of anatomy, Vanderbilt University, Nashville. Philadelphia and London: W. B. Saunders. 1947. Pp. 532. 32s. 6d.

It is a difficult task to take over the revision of an established textbook which is stamped with the individuality of its creator. In the 8th edition of "Ranson" Dr. Clark has succeeded in revising and even improving a good book while preserving its distinctive approach to the subject. The matter has been to some extent rearranged, and gross descriptive anatomy is now collected into one section. A new set of illustrations made from parasagittal sections makes it possible for the reader to picture the structures of the brain-stem in three dimensions. The whole book has been revised to include the results of recent research. It is doubtful whether the addition of a chapter of clinical illustrations was worth the space, for the comments are necessarily sketchy and there are already plenty of books dealing with the applied anatomy and physiology of the nervous system. The statement that the posterior columns of the spinal cord conduct sensory impulses serving tactile discrimination and localisation is based on Head's views; but, as Walshe has pointed out, these activities are not forms of sensibility but judgments, and cannot be assigned to tracts in the spinal cord.

### Heparin in the Treatment of Thrombosis

An account of its chemistry, physiology and application in medicine. (2nd ed.) J. ERIK JORPES, M.D., reader in biochemistry, Caroline Institute, Stockholm; foreword by Prof. J. R. LEARMONTH, CH.M. London: Oxford University Press. 1947. Pp. 260. 18s.

Just before and during the war, interest in the possible treatment of thrombosis by anticoagulants was stimulated by the production of heparin on a commercial scale in Canada and Sweden. Venous thrombosis, long known as a cause of surgical tragedies, is now recognised as being just as common an agent of sudden death in the medical wards. It is among the dangers of taking to one's bed for any illness; and is responsible, too, for much disability from swollen legs, and for pleural pain and breathlessness. Even when emboli appear it may not be easy to locate their source; the process begins in the deep veins of the calf in almost every instance, and emboli have usually appeared before the leg begins to