Isotonic salines (90 gr. of salt to the pint of water) have been found to answer all physiological requirements for the replacement of the fluid lost in cholera and the maintenance of the circulation until the flux from the bowel ceases. They are used intravenously, subcutaneously, and rectally as circumstances require. Intravenously they are administered preferably in the form of alkaline isotonic salines, which were first introduced by Sellards. He had observed that in cholera very large doses of alkalies were required by mouth to render the urine alkaline, and concluded that alkalies administered intravenously in conjunction with isotonic salines would probably relieve suppression of urine after collapse, and thus prevent the onset of uræmia. In practice this has proved true. Alkaline salines should therefore be used as a routine measure in the treatment of collapse in cholera, 60 gr. of sodium bicarbonate being added to each pint of isotonic saline solution.

In totally collapsed patients 3–4 pints of saline may be required at once to restore the pulse at the wrist, the solution being run into the vein at the rate of 2 oz. per minute. Should collapse recur, as it frequently does, either because of the absorption of the fluid by the dehydrated tissues or by its leakage through the denuded intestinal mucous membrane into the gut, further injections must be given until the circulation is adequately maintained, ½–2 pints being administered slowly on each occasion as circumstances demand. Intramuscular injections of pituitary extract are of considerable value in combating collapse, in conjunction with intravenous saline injections. Where the pulse at the wrist is very feeble, showing that collapse is impending, subcutaneous injections of isotonic saline under the skin of the flank are often successful in avoiding it. Rectal injections of hyperalkaline saline—150 gr. of sodium bicarbonate to the pint of isotonic saline—should be administered slowly every 2–4 hours in cases where collapse has been overcome but suppression of urine still persists.

Vaccination, either by hypodermic injection of ordinary vaccines or by oral administration of Besredka's bilivaccine, conveys immunity lasting for several months. These vaccines are thus useful where there is continued exposure to infection in endemic areas. In my experience the mixture of essential oils mentioned above, taken three times a day in doses of a drachm, during epidemics afford almost absolute protection against the disease.

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Special Articles.

TEACHING OF PSYCHIATRY TO MEDICAL STUDENTS.

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A NEED for alteration in the teaching of psychiatry in British medical schools has long been apparent, and has now been commented upon by the Royal Commission in Lunacy. A revision of the present curriculum is all the more imperative on account of the mental hygiene movement which, already well established in the United States and elsewhere, is beginning to assume activity in this country. Moreover, it is likely that before long the medical profession will be called upon to deal more effectively than hitherto with the problem of mental disorders. The graduate who wishes to specialise is already provided for in several comprehensive courses of instruction, while the general practitioner embarks upon his work with an all-too-narrow outlook resulting from the scanty attention paid to psychiatry in his student years. Under the present régime not a few medical students carry away with them an unduly restricted and pessimistic impression of mental disorders derived from their experience of demonstrations at mental hospitals, and from instruction which is often limited to descriptions of neurotic and psychotic types, with scanty attention to the underlying principles of investigation and treatment. Not until this attitude is corrected and broadened by a revision of the present methods of teaching will the general practitioner be prepared to play that adequate part in the early treatment of mental disorder which modern knowledge is rendering possible and which the general public is beginning to demand. The matter has been receiving attention in the United States, where the teaching of psychiatry in some medical schools is free from the defects of our system and has certain features which might be adopted with advantage.

Teaching of Psychiatry in America.

Some years ago the American Medical Association made a survey of medical schools in the United States, and categories were drawn up according to the standard of teaching. More recently an inquiry was made concerning instruction in psychiatry, and, while it was found that even in the "A" class schools there was a great variation in the importance attached to this subject, yet it was the general opinion that 60 hours, divided equally between didactic and clinical work, was the minimum time which should be set apart. Several schools in which psychiatry was taught as part of the neurology course reported that their schedules were in process of revision, so that the former might receive the attention demanded by modern requirements. The following are the courses in psychiatry required by certain universities.

1. *Chicago.*

Two year pre-medical courses in psychology are optional, but are strongly urged (48 to 96 hours lectures and practical work).

Clinical Psychiatry.—Demonstration and conference courses at the Psychopathic Hospital (a hospital for early mental cases run in connexion both with the university and a general hospital), 24 hours. Clinical and conference course of 24 hours at a public mental hospital.

2. *Colorado.*

Third Year.—Lectures on the fundamental laws of psychology as applied to the relation of physician and patient, and to diseased states; psycho-analysis.

Fourth Year.—Clinical instruction in psychiatry and neurology, 42 hours. The class is divided into small sections, each spending one and a half hours daily for three and a half weeks. Lectures in neurology and psychiatry, 66 hours. In the lectures in psychiatry special attention is paid to the neuroses and to the principles of psychotherapy.

3. *Columbia, New York.*

Second Year.—Fifteen lectures and demonstrations in psychopathology. 1. Introductory: Mind and medicine. 2. Structural basis for mind (mind and body). 3. General concepts of intellect and emotion. 4. The "ego instinct" group. 5. The "sex instinct" group. 6. The "herd instinct" group. 7. Cultural modifications of instinctive behaviour. 8 and 9. Mental mechanisms. 10. Abnormal types of mental adaptation; Psychoneurosis. 11. Psychosis. 12. Anomalies of mental development; crime, drug, and alcohol addiction. 13. Psychopathology of general illness. 14. Foundations for social psychiatry. 15. Foundations for mental hygiene.

Third Year.—Psychiatry, 15 lectures.

Fourth Year.—Thirty clinical lectures.

A total of 60 hours is required from all students. Certain additional courses are available, but are not obligatory.

4. *Harvard.*

First Year.—Medical psychology, 10 lectures. The topics include: Environment; emotional reactions; modification of experience; rôle played in these reactions by the various systems; ability to receive, elaborate, store, and reactivate impressions; variations in constitutional endowment; special lines of weakness; importance of personal factors in medicine in general and especially in relation to nervous and mental disorders.

Third Year.—Sixteen clinical lectures at the Boston Psychopathic Hospital. Examples of all the more important

varieties of mental disorder; special emphasis on mild and incipient cases which are frequently treated by the general practitioner. More attention is given to the dynamic analysis and practical problems of the individual case than to questions of formal classification. Examples of nervous and mental diseases of childhood are presented. Each student is given an opportunity to study individual cases. Instruction is also carried on in 12 periods of two and a half hours each, in which small groups of students examine and discuss cases under the supervision of members of the staff.

5. *Johns Hopkins Hospital (Phipps Institute).*

The following courses are obligatory.

First Year.—Personality study as a concrete basis on which to become familiar with the data and methods of descriptive and dynamic psychobiology. Ten hours of class discussion followed by group discussion in which personal problems and experiences are reviewed.

This course enables the student to gain some insight into the working of his own mental processes, so that later he may handle patients with greater understanding of the determinants of conduct, emotional factors, intellectual assets and deficits, and so forth. The student is encouraged to think out his own problems rather than to accept some definite school of psychological thought. In many respects this course is more of a mental exercise than a set form of instruction.

Second Year.—Course familiarising the student with the methods of examination of cases with well-defined problems and reaction types. Emphasis is laid on: Methods of taking the life-history; study of assets and determining factors; intelligence tests; mental status; principles of getting at dynamic determining factors of the patient's life; study of orientative activity, associative processes and resources, affective assets, and habit formations.

This course takes 20 hours of group work. The success with which the student approaches this stage of his work will have been determined largely by the thoroughness with which he entered into the course of the preceding year.

Third Year.—Examination and discussion of cases. Review of fundamental psychopathological reaction types. In this course stress is laid on the study of types and problems, on the observation of symptoms and signs in an orderly manner, and on the recognition of outstanding problems of adjustment. Somatic therapy, the principles of treatment by rest, graded re-education and other measures also receive attention. There is a recapitulation and study of psychogenic and constitutional problems. The course is completed in eight periods of two hours each in groups of five students.

Fourth Year.—Eleven clinical demonstrations of psychiatric cases, groups, and topics. Individual study and report of at least six cases (out-patient or ward) during the fourth year.

All the courses of instruction at the Johns Hopkins total not less than 65 hours, spread over the four years of clinical study. The aims of this teaching have been expressed by Dr. Adolf Meyer, Professor of Psychiatry at Johns Hopkins, as follows:—

"The most fundamental departure from current tradition is the emphasis not on the question whether the patient presents one or other of a set of diseases, but rather on the question how many facts and conditions enter into the state of the patient, what reaction complexes are recognisable as relative entities, and what psychopathologic, cerebral, general, somatic, endocrine, toxic, and infectious components. Let us get away from the dominant notion of classification of each patient as having just one exclusive disease."—Progress in Teaching Psychiatry, *Jour. Amer. Med. Assoc.*, vol. lxix., 1917.

The courses at the Johns Hopkins are the most comprehensive and liberal of all, and have served as an example to other medical schools in the United States, in many of which Hopkins graduates hold teaching positions. With the growth of scientific aids to medical diagnosis, and with the development of laboratory methods, there is an increasing danger of overlooking the personalities of the patients and the psychological factors in the clinical picture. How often does a diagnosis of "functional" after exhaustive physical examinations spell the cessation of efforts in further investigation and treatment on psychological lines! Some time ago Dr. G. E. Vincent, of the Rockefeller Foundation, spoke on this topic:

"It has been asserted with some reason that in its preoccupation with the diseases of the body scientific medicine has too much neglected the psychic and social factors. The rapid spread of the cults which invoke various forms of mental suggestion is probably due in some measure to the failure of modern medicine to include in its scope the relations of mental and physical states, to study these in a scientific spirit, and to utilise the healing power of rationally controlled suggestion. Recent progress in psychiatry, war-time experiences with disorders of the mind, the rise of mental hygiene, and the increased attention being given to these subjects in medical schools and at professional meetings, are evidence that the mental aspect of disease is being recognised more fully."

The Ends in View.

The leading medical schools in the United States aim at training the future medical practitioner to deal with the "functionals," the neurotics, and the psychotics which form no inconsiderable part of his practice with some understanding of scientific principles, instead of leaving him to learn by sad experience that many of his problems are psychobiological rather than physical.

Certain features in the schedules given above call for special comment. In the first place the student is introduced to psychology in his preclinical or early in his clinical years, so that he comes to the study of psychiatry with a certain amount of preparation and with some understanding of the dynamic factors which underlie normal and abnormal conduct; secondly, he is prepared to appreciate psychological factors in other departments of his clinical work; thirdly, clinical instruction in psychological medicine is wider and more intensive than is required by our examining bodies, and assumes an importance equal to that of other branches of medicine instead of remaining an unconsidered trifle. The actual handling and reporting of cases gives the student an understanding of psychopathological problems and of methods of treatment which lectures and demonstrations alone could scarcely do.

If, as is hoped and as the Royal Commission has urged, facilities for early treatment of mental disorders are multiplied, it may be expected that out- and in-patient clinics will work in close association with the general (teaching) hospitals. There should be no difficulty in finding adequate material for students even under existing conditions. Additions to an already overburdened curriculum are hardly to be contemplated. But modification of present teaching in psychiatry should receive serious attention.

Lectures in medical psychology have already been instituted in one or two British universities and should be available for students in all medical schools after the second professional examination has been passed. Quite general topics might be selected, provided that their bearing on psychiatry is kept in mind. A course of six lectures might be given as follows: (1) Relation of mind and body; (2) dynamic concept of psychology; (3) emotion and instinct; (4) mental mechanisms; (5) study of personality; (6) the individual and society.

In the teaching of clinical psychiatry greater attention might be paid to the actual handling of cases. The demonstration of severe and chronic types of mental disorder found in mental hospitals and of the more pronounced forms of congenital mental defect is of at least questionable benefit for the general practitioner, provided that he is taught to recognise suicidal risks and other dangerous anti-social tendencies. If no addition to the present curriculum is feasible, at least four of the 10 or 12 demonstrations which are usually given in mental hospitals might usefully be replaced by attendance and instruction in the psychiatric out-patient department of a teaching hospital. The value of investigating and reporting on cases, as is done in internal medicine, cannot be overestimated as a means of familiarising the student with the problems which have to be faced in psychiatry. It will be noted that this is made a special feature of the teaching at Harvard and Johns Hopkins. It is difficult in the dozen or so lectures which are usually given to cover all the ground which is desirable. A lecture devoted to the principles of case-taking and the evaluation and interpretation of symptoms would be of the greatest benefit. Other topics, such as the handling of neurotic and psychotic cases in general practice, the aims of mental hygiene, and the psychopathology of childhood, would be of more practical use

to the general practitioner than instruction about idiocy and dementia. Above all, it is desirable to inculcate a wider appreciation of psychiatry as not being limited to incurable "insanity." Questions on psychiatry should find a regular place in the papers, and cases should be presented for commentary in the clinical part of the final examinations.

It may be anticipated that if the student is given greater encouragement to regard psychiatry as a subject which is as important as other branches of medicine, he will not only reap the benefit in practice by feeling better able to cope with the psychiatric problems which come before him, but also that he will be in a position to further the aims of mental hygiene. Psychiatry has not yet said the last word on the question of the difficult and "nervous" child, the juvenile delinquent, and many other varieties of mal-adjusted personality. In the developments which have already taken place in the United States and which are being attempted in this country the general practitioner must be a sympathetic agent.

MEDICINE AND THE LAW.

Forceps Left in the Body after Operation: "Negligence but not Gross Negligence."

AT an inquest held last week upon a woman, aged 47, who died in St. George's Hospital, the verdict recorded by the coroner (Mr. Ingleby Oddie) was that "death was due to peritonitis following an operation for the removal of a pair of artery forceps negligently left behind in September, 1923, during an operation for the removal of a cyst." The coroner added, "and I further say that the said negligence was not gross and culpable."

The history of the case appeared from the hospital notes of the date in question, which were produced by Dr. R. A. Burns, at present resident assistant surgeon at St. George's Hospital. The deceased had been admitted to hospital on Sept. 16th, 1923, for immediate operation. She recovered and was discharged a month later. On Sept. 15th of the present year an operation was performed and a pair of Littlewood's forceps were found in the pelvis. They were six inches long and were still held together by erosion though broken. The patient progressed favourably and there were hopes of her recovery, but on Sept. 17th she died. Dr. H. B. Weir, who made the post-mortem examination, said death was due to peritonitis following the operation for removal of a foreign body from the intestines; he said he had read of such cases but had never seen one.

The coroner's verdict, it will be observed, distinguishes between simple negligence and negligence which is gross and culpable. This distinction corresponds with the difference between the lesser degree of negligence which is necessary in a civil action for damages and the more serious degree of negligence which must be present to justify a criminal charge. As the deceased did not survive there can be no question of a civil action for damages for negligence; her right to claim damages died with her. Otherwise it would have been strange if a jury in the High Court or in a county court had not considered it negligent to leave a pair of forceps in a patient's body after operation. The legal duty not to do so is so plain as to admit no denial; as the lawyers say, *res ipsa loquitur*—the damage tells its own story. It might, of course, have been difficult for the plaintiff to fix the personal responsibility. Dr. Weir, in his evidence at the inquest, stated that at St. Thomas's Hospital it is the custom to make a sister responsible for looking after all the instruments of an operation; he added, "the surgeon, however, is responsible for everything." The hospital itself would not be legally liable in damages. "A hospital authority," said Lord Justice Kennedy in Hillyer *v.* Governors of St. Bartholomew's Hospital (1909), "does not make itself liable in damages if members of its staff, of whose competence there is no question, act negligently towards a patient in some matter of professional care or skill or neglect to use or use negligently in his treatment the apparatus or appliances which are at their disposal." But the individual physician or surgeon may be sued provided that the action is begun within the period prescribed by the Statutes of Limitations. It is perhaps worth noting that, if the deceased had survived and had sued for damages, the period of six years within which she would have had to begin her action would have dated from September, 1923, when the alleged negligence occurred, and not from the later date when the unfortunate consequences were discovered.

To turn back to the criminal aspect of the case, Mr. Ingleby Oddie's verdict is a refusal to set the criminal law in motion. A coroner's verdict of murder or manslaughter against a named person is technically sufficient to send that person for trial before a criminal court. In practice, however, the coroner's verdict is seldom relied upon for this purpose, but proceedings are initiated before magistrates in order to have the accused committed for trial in the ordinary way. Where, as in the present case, the coroner's verdict has the deliberate effect of exonerating all concerned from any charge of criminal negligence, it would be most unusual to take any further criminal proceedings before magistrates with a view to placing anyone upon his trial.

Destruction of Dog Suspected of Rabies.

A police-sergeant stationed at Balham was summoned on Sept. 23rd for ill-treating a dog by killing it in such a manner as to cause it unnecessary suffering. The dog, it seems, was brought to the police station under suspicion of suffering from rabies. The officer, believing the suspicion reasonably well founded, killed the dog with three blows of his truncheon. It was alleged that the animal's cries aroused the neighbours, and ultimately the Royal Society for Prevention of Cruelty to Animals prosecuted the sergeant. Section 61 of the Metropolitan Police Act of 1839 authorises a constable of the Metropolitan Police Force to destroy any dog or other animal "reasonably suspected to be in a rabid state." The prosecution said there might have been adequate reasons for destroying this dog, but there could be none for killing it in this particular way. The magistrate held that the sergeant had not intended to cause unnecessary suffering but had in fact done so; he should not have hit the dog at random with his truncheon. The case was dealt with by ordering the defendant to pay 5 guineas costs but no penalty.

Parliament has made other provisions for the disposal of unwanted dogs. The Metropolitan Streets Act of 1867 (Section 18) authorises a magistrate, if he has cognisance of a complaint that a dog has bitten or attempted to bite any person in the metropolis, to direct its destruction, "and any police constable may destroy the same accordingly." Stray dogs seized and detained by a police officer under the general powers of Section 3 of the Dogs Act of 1906 may, if unclaimed after seven days, be destroyed "in a manner to cause as little pain as possible," and a warm-hearted legislature added that no dog so seized should be given or sold for the purpose of vivisection.

Rabies is a disease of which, happily, the present inhabitants of this country know very little. Probably, however, they know enough to take no risks. If a dog, alleged to be mad, is seen running at large in a public place, prudence may dictate its immediate destruction by any means possible. But if a dog is chained up at a police station, the same precipitancy may not be necessary. In the recent proceedings, when the police-sergeant quoted the 1839 Act as his authority to destroy upon reasonable suspicion, the representative of the prosecuting Society submitted that that provision applied only to dogs in the public street, not to dogs tied up at a police station. The submission is probably wrong as a matter of law, and in any case sympathy cannot be withheld from the police officer who undertakes an unpleasant and