

SPECIAL CORRESPONDENCE.

EDINBURGH.

[FROM OUR OWN CORRESPONDENT.]

Relation of the Chemical Constitution and Physiological Action of Medicine.—Addition of Iodide of Methyl to Vegetable Alkaloids.

AT one of the recent meetings of the Royal Society of Edinburgh, a very interesting paper was read by Drs. Crum Brown and T. R. Fraser, upon the influence of direct chemical addition upon the physiological action of substances. This paper is the first of a series which may be expected to throw great light upon one of the most interesting questions which can suggest themselves; viz., the relation existing between the chemical constitution and the physiological action of medicinal and poisonous substances. That such a relation must exist, we can have no doubt; and, indeed, attempts have been made by some to establish the relation in certain cases. Hitherto, however, the subject has not received that systematic investigation which it is now receiving at the hands of the authors of the paper, to which I wish to draw attention.

In order to arrive at any accurate knowledge as to the influence which chemical constitution exerts upon physiological action, it would appear to be desirable to take substances having a very definite and energetic physiological action, and then to perform upon them a chemical operation, having for its object the promotion of a definite change in the constitution, and to examine the modification which the physiological action has undergone. Such has been the plan which the authors have pursued; the bodies which they have chosen for examination are the more active of the vegetable alkaloids, and the chemical operation, of which they have studied the effect, has been the direct addition of iodide of methyl. It was shown by How that, when iodide of methyl acts upon strychnia, brucia, morphia, and other alkaloids, it adds itself to them, and beautiful crystalline bodies are produced which differ considerably in character from the salts of the alkaloids. The authors have already examined the physiological action of the bodies produced by the addition of iodide of methyl to strychnia, brucia, morphia, thebaia, codeia, and nicotia.

The iodide of methyl-strychnium is prepared by first treating finely pulverised strychnia with a solution of carbonate of potash in dilute alcohol, and then adding an excess of iodide of methyl mixed with about its own volume of rectified spirit, and digesting in a flask for twenty-four hours. The spirit is thereafter distilled off, the residue dissolved in water, and crystallised. It is well known that doses of strychnia, varying from one-twentieth to one-thirtieth of a grain, rapidly produce in rabbits most violent convulsions, and in a few minutes kill the animal; the phenomena produced being due to a localisation of its action on the cord. It was found that twelve grains of iodide of methyl-strychnium, when administered (by subcutaneous injection) to rabbits weighing three pounds, produced no effect whatever. Fifteen grains produced symptoms, and twenty killed; but the animal died with symptoms altogether different from those produced by strychnia. In place of violent and spasmodic convulsions and muscular rigidity, the appearances were those of paralysis with complete general flaccidity. The spinal motor nerves were either paralysed, or speedily became so; and, instead of the speedy occurrence of muscular rigidity, the muscles remained flaccid, contractile, and alkaline for several hours. In short, by the addition of iodide of methyl to strychnia, the toxic properties of the latter are diminished about 140 times; and the body produced possesses the physiological action of curare; viz., paralysis of the end-organs of the motor nerves.

Similarly, Brown and Fraser have discovered that the toxic properties of brucia, thebaia, and codeia are immensely diminished by the addition of iodide of methyl; and that the bodies produced, instead of being, as all three of these alkaloids are, strongly convulsent, possess, on the contrary, the physiological action of curare. Morphia, as is well known, possesses both soporific and convulsent properties; its toxic

action is much diminished by the addition of iodide of methyl; its convulsent action is destroyed, but its soporific action remains. The above are amongst the chief results which have been obtained by the authors, and appeared to possess such interest as to warrant my drawing the attention of your readers to them.

ASSOCIATION INTELLIGENCE.

METROPOLITAN COUNTIES BRANCH.

THE following requisition has been received by the Council of the Branch.

“Gentlemen,—We hereby require you, in pursuance of Law XIII of the Branch, to call at the earliest legal opportunity a Special Meeting of the Branch, for the purpose of taking into consideration the treatment which Dr. Eastlake has received from the Governors of the British Lying-in Hospital.

(Signed) GEORGE CRITCHETT. HENRY MAUDSLEY.
ROBERT GREENHALGH. THOMAS HILLIER.
GEORGE HARLEY. WILSON FOX.
J. HALL DAVIS. FREDERIC BIRD.
ALEXANDER HALLEY. J. ZACHARIAH LAURENCE.”

In accordance with this requisition, a Special General Meeting of the Branch will be held at 37, Soho Square, on Tuesday, March 10th, at 4.30 P.M. precisely, to consider the matter referred to in the requisition.

A. P. STEWART, M.D., } *Honorary Secretaries.*
ALEXANDER HENRY, M.D., }

SOUTH-EASTERN BRANCH: EAST SURREY DISTRICT MEETINGS.

THE next meeting of this Branch will be held at the Royal Crystal Palace Hotel, Norwood, on Thursday, March 12th. The chair will be taken at 4 P.M., by Dr. HETLEY, of Norwood.

Dinner will be provided at 6 P.M.

Papers, etc., are promised by Mr. Langton, Dr. Horace Jeaffreson, Dr. J. M. Bright, etc.

HENRY T. LANCHESTER, M.D., *Hon. Secretary.*

Croydon, February 29th, 1868.

METROPOLITAN COUNTIES BRANCH: ORDINARY MEETING.

AN ordinary meeting of the above Branch will be held at 37, Soho Square, on Friday, March 20th, at 8 o'clock P.M., when Dr. Anstie will read a paper on the Use of Alcoholic Stimulants in Acute Diseases.

A. P. STEWART, M.D. } *Honorary Secretaries.*
ALEXANDER HENRY, M.D. }

REPORTS OF SOCIETIES.

CLINICAL SOCIETY.

FRIDAY, FEBRUARY 28TH, 1868.

SIR THOMAS WATSON, Bart., President, in the Chair.

TWELVE gentlemen were elected members of the Society.

Mr. THOMAS SMITH showed a patient, aged 17, whose Knee-joint had been excised eight years ago. The result of the case supported a statement made by him some years ago that, provided the epiphysal cartilages were uninjured by the operation, the growth of the limb would, in all probability, be unchecked. In reply to a question from Mr. Bryant, Mr. Smith stated a small portion only of the cartilage of the epiphysis of the femur had been removed during the operation.

Dr. ANDREW CLARK read an account of a case of Fibroid Phthisis, which is published at page 218 of the present number.

Dr. C. J. B. WILLIAMS regarded the disease called by Dr. Clark Fibrous Phthisis, as of the same nature with that observed in two cases published by himself thirty-three years before. This disease had been subsequently described by Dr. Corrigan of Dublin as cirrhosis of the lung. He believed that it always originated in pleuropneumonia, and that its most characteristic peculiarity consisted in the contraction of the diseased organ, or rather of the fibroid material, deposited in it; and of the consequent dilatation of the bronchial tubes. This deposit—“caco-plastic” lymph—no doubt often occurred as a disease of itself; but he thought it was most frequent as a modification of ordinary phthisis.