

can only be its chemical properties, using this term in its widest sense. The conclusion arising out of these which constituted the hypothesis to be examined was: (3) That substances closely allied chemically must have an analogous action on the system, or the diversity in their operation should be capable of explanation on chemical principles. In other words, chemical groups ought to form therapeutical groups. No fact in therapeutics is more certain than that iron cures anæmia and chlorosis, and this metal stands at the centre of a group closely allied in chemical properties, which have to it certain well-defined relations. This group, then, furnished the conditions requisite for experiments which might support or overthrow the hypothesis. A second object also offered itself, which a few remarks will explain. The usual interpretation of the good effects of iron in anæmia is that it supplies a natural constituent of the blood which is deficient. This, however, if a true explanation at all (which is strenuously denied by some eminent men on grounds which need not be enumerated here), carries us back but a very short step towards a real comprehension of the mode of action of iron. To attain this the question must be answered, why iron is a normal constituent of the blood. The answer is not given by simply enumerating the uses which it serves. As understood by me, iron is normally present in the blood, because of the chemical affinity between it and the organic matter of the blood corpuscles, and it is useful in virtue of the influence which this affinity exerts on the organic processes. According to this view, then, iron does not cure anæmia because it is a constituent of healthy blood—i.e., the two do not stand in the relation of cause and effect; but the cure of anæmia and the presence of iron in the blood are alike consequences of the affinity of iron for organic matter and of the influence of this affinity on organic operations. If the mode of action of iron be that indicated, then an allied metal, having similar relations with the organic proximate principles, will have a similar effect on the organic processes; and it may be that under certain circumstances its curative influence may be even superior to that of iron. This, however, is inherently improbable; but it is not at all unlikely that by the administration together with iron of one or other of the allied metals, the action of the iron may be aided. The object, then, was to ascertain, if possible, the indications for the employment of a particular member of the group as an accessory to iron in any class of cases. Manganese and nickel stand on one side of iron, the other on the other, as to their general chemical relations; and it seemed worthy of attention, should it be found that they exerted any favourable influence at all, to endeavour to determine what special set of symptoms associated with anæmia indicated the addition of one or other of them to iron."

The metals were administered in the form of chloride, and cases are related in which both manganese and nickel cured anæmia as promptly as iron could have done it, while zinc failed. Manganese did good whether the anæmia was associated with amenorrhœa or menorrhagia, from which I conclude that the favourable effect of manganese is attributable to its influence on the general health and on the blood, and not to any special effect on the catamenia; but I found that, "in using these metals as accessories to iron, manganese seemed to have a special influence in promoting the return of the catamenia, and nickel a special property of checking leucorrhœa."

Drs. Ringer and Murrell by their experiments on the comparative effects of salts of sodium, potassium, and ammonium, and of the arsenites and arseniates, are rendering services to scientific therapeutics, the value of which can scarcely be estimated. When alkalies or salines are indicated, it is not a matter of indifference what base we employ. Almost the only property common to potash and soda is their power of combining with and neutralising acids; in their relations with the important organic constituents of the body, nerve, muscle, blood-corpuscles, and albumen, they differ completely. Their similarity is apparent only, and from their physiological effects alone we might conclude that they were respectively the alkaline members of different series of metals. Carbonate of potash and of soda will alike neutralise free acid in the stomach, but after absorption their combinations with the blood and the whole of their course and work in the system will be different. The researches of Drs. Ringer and Murrell, therefore, have a bearing on practical therapeutics; but, more important than this, more important than the guidance they afford in the employment of different preparations

of arsenic, more important than the introduction of an additional remedy for amenorrhœa in manganese, is the coördination of therapeutics with chemistry and the advance made towards a scientific basis for medicine.

I am, Sir, your obedient servant,
Seymour-street, Jan. 16th, 1883. W. H. BROADBENT.

MAIN SEWERAGE AND HOUSE DRAINAGE OF CANNES.

To the Editor of THE LANCET.

SIR,—In the autumn of 1882 the Mayor of Cannes saw me relative to works of main sewerage for Cannes. He was in England for the purpose of obtaining information as to the best English mode of sewerage. I furnished him with copies of reports, plans, sections, and details, but in conversation stated that details were only useful to an expert who knew by experience where and how to apply them. Some weeks after this interview I learned from the Mayor that many defects in the sanitary state of Cannes must be admitted, and I also further learned that the municipality had determined to adopt the best remedial measures and to adopt and carry out the best forms of works, money being ready for the purpose. So you see THE LANCET had not stirred in vain. Shortly after the return of the Mayor he wrote asking me if I could visit Cannes, inspect the town, look over the plans and details proposed to be carried out, and advise as to works generally. If, however, I could not visit Cannes personally, I was requested to recommend some one of known repute to visit Cannes at once both to advise and report. I could not go, but nominated Captain Douglas Galton, R.E., F.R.S., &c., who consented, and who, after nearly a month's residence in Cannes, returned this week with plans and details to enable him to report. I need not say that a report from an authority so eminent will deserve, and I doubt not will receive, full recognition both in Cannes and in England. Works of main intercepting sewerage have been commenced, but are suspended during "the season." Extra costs are, however, being incurred by the municipality, and extra care is being taken to cleanse, disinfect, and scavenge the district. The residents in Cannes, and the intending visitors, may therefore take it from me that the Mayor and municipality have determined to make the town and district what they ought to be—that is, as perfect in sanitary works and regulations as is practicable.

I am, Sir, yours, &c.,
London, Jan. 16th, 1883. R. RAWLINSON.

"A NEW OPERATION FOR CATARACT."

To the Editor of THE LANCET.

SIR,—Having imagined that all conceivable methods had already been devised and practised for the extraction of cataract, I was somewhat surprised to see in your last issue an article by Professor Galezowski, of Paris, entitled "A New Method of Cataract Extraction without Excision of the Iris." I hope Professor Galezowski will not be offended if I offer a few friendly criticisms upon his paper, and point out to him that his operation resembles so much one that has previously been performed as hardly to merit the title of a "new operation." In describing the steps of his procedure, Professor Galezowski says, "After having seized the conjunctiva with fixation forceps, I puncture the transparent cornea just at its junction with the sclerotic with a very narrow-bladed Graefe's knife, and at a point 3 mm. above the horizontal diameter, then inclining the edge slightly forward I cut the corneal flap in such a manner that its summit shall be 2 mm. distant from the sclerotic margin."

Now, I would suggest that in nine cases out of ten no corneal flap could be made according to Professor Galezowski's directions. The average diameter of the cornea rarely exceeds 10 mm.; the space, therefore, above the horizontal diameter would rarely exceed 5 mm., and if the knife were entered 3 mm. above the horizontal diameter, and made to emerge 2 mm. below the sclero-corneal margin in nine cases out of ten it would emerge at the same spot where it entered, and the result would be an horizontal incision. In the tenth case the corneal flap, if such it could be called, would rarely exceed half a millimetre in height. Now, if this is what