

organ we can only evolve those elements which have a specific and elective affinity for its action; and where this affinity prevails, I repeat that the elements themselves work their own discharge with at least sufficient rapidity. Obviously then, if the science of medicine is to find the means of affecting the course of humoral disorders, we must look further into the operation of drugs than the superficial evidence of their various local affinities. Our only known power of qualifying the specific materials of any excretion lies much deeper in the subject. It lies in such means as we possess for accelerating and retarding the waste of tissues and blood, or that metamorphosis of their material which sooner or later furnishes the elements of discharge. At the head of these means stands bodily exercise, with its attendant increase of oxygenisation, as the natural and by far the most efficient stimulus of the organs of excretion. As to the question, whether there are any drugs which control this process, either to increase or diminish it: here exactly it is that our ignorance displays itself, and that we find our inability to cope with the difficult problems of humoral pathology.

It seems probable that *water* promotes these changes in their normal direction: Becquerel found that, by increasing its use, he could likewise increase the true urinary excretion—that of urea.

There are reasons for believing that mercury occasions in the blood that dissolution of certain materials which is preliminary to their excretion; for first of all (just as with a true humoral disease) there is a period of general uneasiness and febrility; this presently gives way to a second stage of its influence, in which a variety of excretory acts occur with unusual activity; while any effused inflammatory products tend to re-enter the blood, and their fibrin undergoes disintegration. It is not easy to say, whether these phenomena are in the normal direction of chemical change, and whether they effect all the retrogressive elements of the blood; but in one respect the excretions thus evolved obviously differ from the more leisurely productions at the same surfaces—they are more fatid, and therefore probably less oxidized. Likewise, as with all excited excretions, they are apt to become inflammatory; in mercurial pyalism the saliva is abundantly albuminous.

Antimony seems likewise, and in the same manner, to accelerate the destructive metamorphoses of the blood: and in indeed (since the recent researches of Dr. Mayerhofer) we know more about it than about other drugs of the same class. Without materially altering the proportion of coloured corpuscles in the blood it produces a marked diminution in its other solid ingredients, and reduces the fibrin to about a third of its usual quantity. Coincidentally with this change occur the various known acts of increased excretion; and in the urine (which has been especially examined) the waste products of the economy are found in excess—especially the urea, of which there is discharged half as much again as in normal.

What other drugs may act in this manner I am unable with certainty to inform you; but when you find any which, like these, tend to affect several excretions simultaneously, you may have reason to suspect that such is their *modus operandi*.

Such drugs, then, as mercury and antimony, when introduced into the circulation, represent exactly the phenomena of true humoral diseases; they effect or hasten a definite metamorphosis in the blood, under the influence of which the materials for excretion become sensibly increased; they do not stimulate the organs on which they act by means of any specific affinity between