

while scientific medicine has been earnestly and perseveringly working at these most intricate problems, many commercial houses by the introduction of practices not in harmony either with the conditions demanded by the primary hypotheses or with the teachings of bacteriology, and also by the publication of extravagant statements founded on no scientific evidence, have misled many in the profession into the use of mixed vaccines and semi-secret unstandardizable mixtures of bacterial products.

While it may perhaps be said that clinical investigation indicates that some temporary benefit may follow the injection of many protein substances in chronic infections, the general results obtained under observation have been most unsatisfactory. "Fundamental principles demand that therapeutic vaccines be composed of bacteria as little different and as little removed as possible from the special strains of bacteria causing the infection against which the vaccine is to be used." (Hektoen.) Therefore autogenous vaccines alone are to be relied upon, and it would appear a simple matter in almost every case for such to be prepared at the same time that the bacteriological diagnosis is made. We may add that the physician who accepts the mixed vaccines of commerce without knowing the exact etiological factor of the infection treated, certainly abandons rational medicine and gropes in the dark.

Concerning the use of drugs in our therapy a second statement that can be made, and which appears to me of great importance, is that the profession as a whole, while using drugs freely, often too freely, gives too little study to our gradually increasing knowledge of the exact physiological action of drugs and too little study to the dosage in which they should be employed. Drugs are to-day often prescribed with an erroneous idea of their power to influence special conditions or symptoms, and are often used in unsuitable doses. As simple illustrations the following may be cited: It is now generally agreed that a digitalis action when demanded by the heart's condition is best obtained by the use of the drug in full doses till its effects become manifest. In many prescriptions that I have seen the amount given is too small to secure the greatest benefit. To obtain results from the use of strychnine as a respiratory stimulant larger doses than the 1-50th or 1-60th grain in which it is often prescribed, are necessary. The strength of tincture of nux vomica in the last edition of the *Pharmacopœia* was reduced 50 per cent. to make it correspond with the strength of this tincture in other countries. I have asked several druggists whether physicians had made any difference in the amount of this tincture ordered in their