

terest on this subject, in its relation to practical medicine, has also been recently delivered by Sir William Aitken. To all these gentlemen we are indebted for much valuable information. From these investigations I do not think there can be any doubt in coming to the conclusion that the secretions of living beings are capable of forming leucomaines, alkaloid bodies having poisonous properties, and that many phenomena connected both with health and disease may thus be accounted for. For, as Gautier remarks,* "Of all the extractive composite residua, the alkaloids of animal origin are worthy of the deepest interest. It is only now that they have become familiar to us. They claim our special study from the fact of their constant presence in normal secretions, and must be classed with the most active agents known." From my observations in connection with the surgery of these parts, it seems probable that the development of urine fever is really due to the absorption of some such poisonous compound as an alkaloid which is derived either from urine, or tissue, or wound decomposition, or from all combined, and I would base this conclusion not from any chemical discovery that, so far as I know, has hitherto been made, but from the following deductions which seem to be warrantable from what I have stated :

1. That the presence of urine in relation with a recent wound is necessary for the production of what I have spoken of as urine fever.
2. The mere contact of urine with a wound is not sufficient for its production.
3. That the retention of fresh urine within the area of a recent wound is almost invariably followed by its development in a greater or lesser degree.
4. That where urine is placed under such circumstances as have been last mentioned, the liability to the development of urine fever is greatly diminished when it is sterilised by local or general means.
5. That the retention of fresh urine, blood, and the *débris* of damaged tissue in the confines of a recent wound for a certain time, at a temperature of somewhere about 100° F., could hardly be possible without chemical changes taking place in the constituents referred to.

*Professor Armand Gautier's *Introduction to the Animal Alkaloids*, by Dr. A. M. Brown.

6. That there is a common origin for urine fever is rendered probable by the uniformity of the symptoms attending it, which, though differing in degree, are identical, whether following a surgical operation or an accidental wound.

As some may not be prepared to accept from me, though fortified with the reasons I have urged, that urine or urethral fever is the product of a definite poison introduced into the system, let me occupy your time for a few moments, while I quote from the last essay* of one of the most original thinkers the medical world ever produced, I refer to the late Dr. Austin Flint, of New York.

"Analytical chemistry," he observes, "carries investigation beyond the limits of microscopical observation. The latter, at the present moment, both in pathology and physiology, seems to promise most ; but is it not a rational anticipation to look for future results from chemical analysis of the components of the body, in health and disease, which in brilliancy and practical utility may surpass those of the labors in this field of investigation during the past half century? The medical semi-centenarian can recall the enthusiasm aroused by the labors of Liebig. Histology is now in the ascendant, but is it not safe to predict that before the lapse of another half century there will be another era in organic chemistry, and that light will penetrate dark recesses which histology cannot reach? The supreme objects of study in pathology at the present time are the discovery of micro-organisms and their natural history. But these agents it is probable, are pathogenic, not directly, but indirectly, by means of the toxical products of their activity. What are these products, and how do they give rise to the phenomena of disease? We may ask the same question of certain of the poisons introduced from without the body. How is it that fractional quantities of morphine, hyoscyamin, strychnine, aconitine, atropine, and other alkaloids produce their lethal effects? It conveys no adequate information to say that they act upon the nervous system. This is merely the statement of a fact, not an explanation. For the latter we must look to the organic chemistry of the future."

But objection may be raised against the views I am advocating relative to the way in which urine or urethral fever is developed, by the fact that it

**Medicine of the Future*: Address written for the Annual Meeting of the British Medical Association, 1886.