

Says L. Brunton, "Facts seem to point to ferments or enzymes as the agents by which the tissues are built up and pulled down in their constant change, which continues during life; and the action of drugs on these enzymes is becoming one of the most important questions of pharmacology" (see *American Public Health Association*, vol. vi. p. 103).

From time to time in the last five years the journals have contained records as to this possibility of individual prophylaxis. But all this was only the clinical experiences of physicians. Too often these are not accorded the same consideration as what are called crucial or laboratory experiments.

It has recently been necessary for Sir James Paget, as president of the Pathological Society of London, to contend that clinical observation is scientific, and that the sick-room is a laboratory with its crucial experiments, as real as those in which culture-experiments are instituted.

But now experimental tests have come directly to our aid in determining the effects of prophylactic remedies. Before this we knew that arsenic, potassium chloride, quinine, and excess of iron, etc., could be made constant for days and weeks in the blood by medication.

In 1884, under the direction of the Local Government Board of England, Dr. J. T. Cash instituted a series of experiments as to chemical disinfectants, and made report thereon. The object of the earlier investigations, recorded in a late report, was to inquire whether certain substances belonging to the aromatic series, when introduced into the body of a living animal, were capable of preventing the development of a particular virus within that animal. Later research was extended to a metallic salt (corrosive sublimate), which acts otherwise than aromatics with regard to albuminous bodies.

It was with this that the most decided result was secured. The result sought was to find "its power of resisting, in the condition in which they occur within the animal body, the multiplication of the active principle of the virus against which they are directed to such an extent that the virus is destroyed, or only reproduces itself so fully as to cause a modified or abortive attack of the disease in the animal body experimented on." The disease chosen for the experiments was anthrax, the severest test of all. The result of the first series of experiments was such as to show that the previous administration of corrosive sublimate may considerably modify the course of the anthrax disease in rabbits. The paper concludes by saying, "that, although these few experiments are not conclusive, they cannot fail to encourage the hope that we may yet succeed in creating with precision, within the animal economy, by the action of this and perhaps other drugs, a temporary condition of resistance (in this case seven weeks), which may so limit the activity of the anthrax virus that it will merely produce a passing, and at the same time protecting, disorder, instead of a fatal disease."

The next year (1885) Dr. Cash made to the Local Government Board a further report on mercury as a means of prophylaxis to anthrax. In this he says, "I have followed up the investigation of the prophylactic action of the perchloride still further, and the favorable opinion I was before led to entertain of its efficacy has been abundantly confirmed."

Dr. Klein has also satisfied himself of the restraining powers of the perchloride of mercury. Tomassi-Crudelli and others claim that arsenic has the same control as a preventive of malaria. These results may be taken as a confirmation of the clinical evidence given, and of the view we long since expressed as to the coming importance of various allied modes of prophylaxis in the prevention of various communicable diseases.

Heretofore we have mentioned some other prophylactics which we believe to have been effectual in preventing or mitigating some of the parasitic diseases. With this new evidence, I believe the time has come for a thorough testing, both by the practitioner and the biological investigator, of this new method of preventing and controlling disease. There are now many who believe that the real action of some of our most successful remedies is just this: the mitigation or prevention of a microphytic disease does not necessarily mean the destruction of the organism, but its inhibition *in loco*, or the modification of its chemical action on the tissues or of its products so as to render it harmless. It is a part of that anti-

septic medication which Professors Yeo and Brunton, and many others, recognize as steadily gaining ground for approval.

If, in an individual case of exposure, or an outbreak in a family or a neighborhood, this kind of prophylactic treatment is available, it is easy to forecast the wonderful beneficence of the result.

If, for instance, in an outbreak of diphtheria in a family or in a neighborhood, we can put all persons exposed to it for a few days upon a prophylactic treatment, or if in the first outbreak of cholera in a locality all exposed persons can be rapidly brought under the inhibitive effect of a prophylactic administered promptly and continuously, we will have in our possession a mode for the limitation or prevention of epidemics far more likely to have practical application than any system which involves the cutting of the skin, or the introduction in any form of the actual virus of the disease. At any rate, with two such modes of defence at hand, we might hopefully expect to substitute the word 'sporadic' for 'epidemic,' and to bring many a vagrant pestilence within the range of our control.

The present age of advancing medical art, will be rendered still more notable if it can be found that simple and active medication, on the outbreak of any communicable disease, will protect all those exposed thereto from contagion, or so modify its effect as to make the attack benign.

THE ALASKAN SOCIETY OF SITKA.

IT seems that the opening-up of Alaska to tourists is to result in some real benefits to science. An exceptionally intelligent and influential body of visitors appears to have visited the Territory during the past summer; and in the last issues of the *Alaskan* and the *North Star*, both of which are published at Sitka, are to be found the practical results of the presence of the body of visitors referred to. The *North Star* states that the training-school at Sitka particularly interested the tourists, and their interest seems to have taken a practical form. In this paper's account of the visit we read that at the instigation of President Butler, of the College for the Training of Teachers in New York City, and under his leadership, a large subscription was made for the purpose of equipping the kindergarten and the wood-working departments of the training-school. The list of subscribers is printed in full in the Alaska papers, and it contains the names of many prominent persons in the educational, political, and business worlds.

The same visitors were very much impressed with the necessity of taking steps to preserve information concerning the folk-lore and arts of the native Alaskan population. After leaving Sitka, Presidents Gilman and Butler were appointed a committee to draw up a constitution for a society which should have for its object the collection and preservation of such information. This constitution was drawn up, and signed by most of the visitors, and was then submitted to the residents of Sitka, who a few weeks ago called a public meeting, and proceeded to organize a society, which is to be known as the Alaskan Society of Sitka. The constitution as adopted states that the purpose of the society is to collect and preserve information in regard to the arts, history, language, religion, and folk-lore of the native population of Alaska, and also in regard to the structure, climate, mineral resources, fisheries, flora, and fauna of the country, and in brief to observe, collect, record, and publish facts in regard to the entire Territory, continental and insular.

The members of the society are the following founders, and such others as may be elected to membership from time to time. The founders are Pres. D. C. Gilman of Baltimore, Pres. Nicholas Murray Butler of New York, Senator C. B. Farwell of Chicago, Edwin H. Abbott, Esq., of Milwaukee, Prof. Louis Dyer of Cambridge, Prof. A. V. Young of Evanston, Ill., Thomas Hill, Esq., of San Francisco, and Elliot F. Shepard, Esq., and John B. Pine, of New York.

Resident members are to be chosen from the residents of Sitka who by their tastes, studies, or pursuits are qualified to promote the objects of the association. Corresponding members are to be chosen from those interested in the object of the society in all parts of Alaska, and from those officers who have been stationed in the Territory. Honorary members are to be chosen from those who have in any way distinguished themselves in promoting the study of Alaskan geography, natural history, ethnography, or other branches

of science. An annual report is to be made, and scientific papers may be published from time to time in the name of the society, after they have obtained the approval of a committee of scientists to be designated by the directors.

It is also intended to establish a museum at Sitka in which a large portion of the material to be collected by the society can be preserved. It is doubtful if any of our Territories possesses greater geographical and ethnographical interest than Alaska, and we trust that the Alaskan Society of Sitka will make the best use of its opportunities, and collect material which will be invaluable for scientific purposes.

So little is generally known in the United States concerning the meteorology of Alaska, that it will be of interest to read the summary of the report of the Signal Service officer stationed at Sitka, for the month of September last. The highest barometer for the month was 30.38, and the lowest 29.26. The monthly range of the barometer was 1.12. The mean temperature was 57°, the highest point reached being 60°.5 and the lowest 36°.5. The least daily range of temperature was 5°.5, and the mean daily range 11°.6. The mean daily dew-point was 45.5, and the mean daily relative humidity 80.7. The total movement of the wind during the month was 6,030 miles, the highest velocity reached being 46. The total precipitation for the month was 10.57 inches, and on 20 days .01 of an inch or more of rain fell. The number of clear days during the month was 5, of fair days 8, and of cloudy days 17. On three days light frost occurred.

HEALTH MATTERS.

The Corset.

DR. ROBERT L. DICKINSON, lecturer on obstetrics at the Long Island College Hospital, has prepared a very elaborate paper on the corset, discussing from a scientific standpoint the questions of pressure and displacement caused by it. This paper was read before the Brooklyn Pathological Society, where it excited great interest and discussion. It has been published in full, with seventeen figures, all of which were drawn by the author of the paper, illustrating the effects of corset-pressure on the chest and abdomen and their contained organs, in the *New York Medical Journal* of Nov. 5. Dr. Dickinson says: "Ridicule, argument and invective have been freely expended upon the artificial small waist since the days of Martial and Galen. Yet the habit of corset-wearing has received little systematic study, and men's opinions are widely at variance. We frequently meet with the statement that corset-wearing works great injury; we discover a catalogue of five and ninety different diseases and disorders due to tight lacing; we find Bouvier, who has written the elaborate and interesting history of this article of dress, vigorously asserting that 'the modern corset, moderately tightened, is without appreciable influence on the health of the healthy woman;' and we encounter all shades of opinion between these extremes. But unsupported assertion is poor evidence, although a general impression must carry some weight. To obtain clear perceptions of the action of the corset, I have endeavored to measure the amount of pressure it exerts, to ascertain the distribution of the pressure, and to determine the displacements resulting therefrom, studying the subject with as little bias as possible, stating bald facts, and rarely expressing opinions."

The first tests which Dr. Dickinson applied were to determine the external pressure by the manometer; and as a result he gives a table of the various pressures within the body, as that of the blood and of the expiratory force of the lungs, when compared with the pressure exerted by the corset.

In reference to the words 'tight' and 'loose' as applied to corsets, the author says these words need to be defined. They lack precision, but are necessary. We cannot determine any limit of contraction in inches as the dividing-line, since in certain cases an inch and a half lessening of waist-measure with one woman will cause more pressure and more distress than five inches in another. The guide must be the patient's sensations, when we can trust her testimony, and signs that are readily appreciated, such as the restricted respiration and movement, evident discomfort when the corset is first hooked, flushing of the face in a warm room, and the

indentations in the skin after removal of the corset. Appearance goes for nothing: a large bust and wide hips or shoulders give an impression of slenderness in the waist which may be entirely deceitful. The least pressure he has estimated from a corset is twenty-one pounds: the greatest pressure is eighty-eight pounds. Within the half-minute that follows any exertion, such as rising, lying down, turning over, or straining, the mercury in the manometer rises from a half-inch to an inch and a half, then gradually falls to its steady level. On taking off a corset, one often observes that if the circumference of the waist is taken at once, and again a few minutes later, an increase of about an inch will have occurred. Six inches difference between the circumference of the waist over the corset and the waist with the corset removed is the greatest difference which he has measured. Five and a half and five he has met with once each. In the woman who wears no corsets the many layers of bands about the waist, on which heavy skirts drag, are sufficient to cause considerable constriction, as Dr. Mosher states. The thoracic cavity suffers less diminution in size and alteration in shape from corset-wearing than the abdominal. The principal constricting effect is exerted below the fifth rib. The inferior edge of the lung is compressed, and its ability to distend the lower part of the pleural cavity seriously crippled. Compensation in part is effected by the tendency of the corset, when firmly adjusted, to raise the shoulders, forcing the upper lobes to do the breathing, as Sibson has proved, raising the thoracic, or five upper ribs, widening the interspaces (also a constant condition in the female), and in this way expanding the highest part of the conical thoracic cavity. Freer play of the apices in women who wear corsets would lead one to expect consolidation at these points to be relatively less frequent than in men, while affections at the base should be more commonly met with. An increased tendency to emphysema of the upper lobes might also be anticipated.

The author raises this interesting question, May the peculiar character of the respiration in women be attributed to the use of corsets? Two observers who are especially qualified to testify have stated the case very forcibly. Sibson says, "In the adult female the form of the chest and abdomen and the respiratory movements are often undoubtedly modified by tight lacing. The form of the chest and the respiratory movements do not differ perceptibly in girls and boys below the age of ten. Although the form of the chest remains nearly the same until the age of twelve, the abdominal movement is then somewhat less, and the thoracic somewhat greater, in girls than boys. At this age and earlier, stays are worn, and, though they do not compress the body materially, yet they restrain the free expansion of the lower ribs during free exercise. After the age of fourteen the form of the chest and the respiratory movements differ materially in females and males. I think it probable that in females, even if they wore no stays, the thoracic respiration would be relatively greater, and the diaphragmatic less, than in man; but this is only surmise. Delicate men," he says further, "approximate to the female thoracic breathing; vigorous women, to the male abdominal breathing; and long-distance runners have the least thoracic breathing of all men (in the quiescent condition). The diaphragm would seem, therefore, to be a muscle capable of developing to meet increased demands as much as any other that the athlete strengthens."

Walshe says, "The agricultural woman, who knows not stays, breathes more like a man than the town female. Besides, during sleep the conditions of pectoral and ventral action of the female are much less strikingly different from those in the male than in the waking state: the waist is relieved for a time from constriction. And, further, the male and female dog breathe almost exactly alike, as do the horse and mare: the action is abdominal and lower costal."

Dr. Dickinson calls attention to the observations of Dr. Mays of Philadelphia, who has recently studied the respiratory movements of Indian girls in the Lincoln Institution, and whose results have been referred to in *Science*. These girls had always worn loose clothing. They ranged between ten and twenty years of age. Tracings from their costal and abdominal respiratory movements showed a very close analogy to those of the civilized male, and that, "so far as the Indian is concerned, the abdominal is the original type of respiration in both male and female, and that the costal type in