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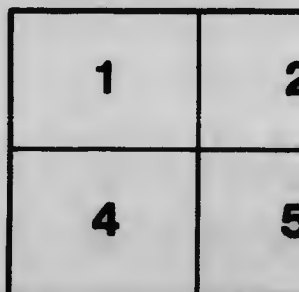
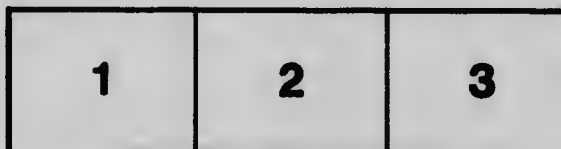
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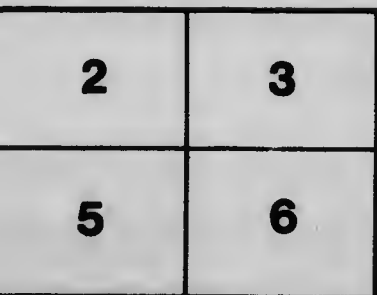
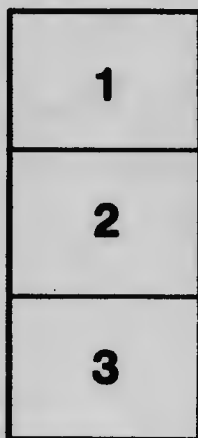
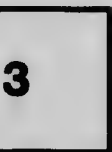
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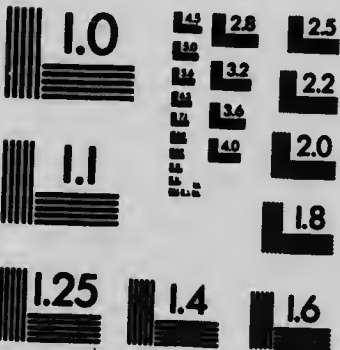
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CURRENT MEDICAL



BY SIR JAMES GRANT, M.D.
HONORARY PROFESSOR
OTTAWA MEDICO-CHIRURGICAL

Reprinted from the CANADA

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AL SCIENCE**



**RANT, M.D., K.C.M.G.,
ARY PRESIDENT,
O-CHIRURGICAL SOCIETY.**

CANADA LANCET, April, 1913

CURRENT EVENTS IN MEDICAL SCIENCE.*

BY SIR JAMES GRANT, M.D., K.C.M.G., HONORARY PRESIDENT.

AT no time in this 20th century has greater advance been made in medical science, and for the relief of suffering humanity. Sir James Barr's presidential address to British Medical Association, Liverpool, asks the question, "What are we doing here, and is the world any happier for our presence?" True, we subsist on the misery of others, but we do not create misery, but relieve it. We cut the ground zealously from under our own feet, and actually do away with sources of personal revenue, chiefly in the line of prevention and alleviation of disease. Cuba of a few years ago, a pestilential centre from yellow fever, now entirely free, in that particular, the result of sanitary science. Panama Canal, abandoned by France in its construction owing to excessive death rate, from malarial influences, now entirely changed to a perfect state of health, by our profession, truly remarkable. So Ross counteracted goats milk influence as a cause of Mediterranean fever among British troops. The work of Almroth Wright, chiefly with pyogenic organisms, in typhoid fever, influenza, and pneumonia, is worthy of the highest commendation. Dr. Forbes Tulloch fell a victim to "sleeping sickness," the result of scientific enquiry in South Africa, and Turner, as the outcome of his heroic efforts in Rhodesia now suffering from leprosy. Such is the evidence of truly noble and philanthropic work on the part of the profession. Tropical medicine might well be established as a branch of study in Canada. So many of our graduates find their way into distant colonies of the Empire, where such information could be turned to practical account. New continents and a new departure in civilization has thus been opened up.

Professor Metchnikoff, "Institute Pasteur," Paris, recently addressed the National Health Society, London, surrounded by interviewers, asked the greatest message in contemporary science. Replied in regard to the plague, consumption, "I am confident that man will triumph over the minute plant that has assailed him." Above all,

*Address to Medico-Chirurgical Society, Ottawa.

the great things are coming along the path of physical sciences, discoveries in new phases of electricity, and kindred sciences. As to sour milk, and Bulgarians, I do not say it has given them strength to win battles, but it has not interfered with their victories. With them centenarians are numerous. The microbes of sour milk fight against the bacteria of decay, and the germ that leads to health, and long life is termed the "Bulgarian microbe." In London, Hamburg and Copenhagen, the death rate from tuberculosis in 12 years has fallen from 24 in the thousand, to 13 in the thousand, not the result of sanitation, or scientific treatment, but the progressive self inoculation of the people, with feeble strains of the bacillus, which has become ubiquitous in European countries. There is every reason to hope that thus in the end, man will triumph over his most redoubtable enemy, the minute plant "bacillus tuberculosis."

In October, 1902, Rockefeller site chosen, in New York City. The Hospital and Isolation Pavillion endowment, moderate at first, reached the magnificent gift of \$7,180,000 in 1911, and in addition, a farm of 100 acres, for laboratory animals, for research work, and farm products, the entire equipment not surpassed in the present day, to add to our knowledge of disease, and relief of the same. To those entering the profession, it is a privilege to visit this institute, so perfect in arrangement, and so charmingly presided over by the highest class of intellectual experts, ready and willing to impart information. Dr. Alexis Carrel here commenced his laboratory investigations, and turned to account the practical work of Dr. Ross Grenville Harrison, of Yale University, the first to grow animal tissue outside the body, the starting point of Dr. Carrel's investigations. The opinion now expressed is that by his researches, the boundary of experiment in the prologation of life, has been pushed forward another degree, and opens up a vista as significant as those which came when Virchow established cellular pathology, and Pasteur laid the foundation of bacteriology. Dr. Carrel has devoted this last year to the preservation of life in cold storage, the chief object in view being to prolong life, and relieve human suffering. The *London Lancet* asserts, little of Carrel's work is known in England, and that his discoveries in the surgery of the blood vessels, has gone far to revolutionize this branch of medicine, and may almost be said to have created the surgery of the vascular system, and the Noble trustees have done well to recognize his research work.

Professor Flexner's Huxley lecture, Charing Cross Hospital, London, recently, on problems in infection, and its control, has brought to light facts of rare interest in science, particularly bacteriological investigation. The sudden conquest of syphilis, in which a great victory was won, when it was ascertained that anthropoid apes can be in-

ected experimentally, followed by discovery of the causative spirochete, and the drug salvarsan, so remarkable in its curative action. That the spirochete is a parasite, adjusted to living tissues, is clear from the experimental investigation of animals. Coming to the research work of Noguchi the *S. pallida* has yielded to artificial culture. Flexner is truly a master mind in all that concerns poliomyelitis, or infantile paralysis, epidemic in northern Europe for many years, has within the past five years about encircled the globe, the Scandinavians being first in the field, to recognize its essentially infectious nature. The natural spontaneous disease, and the induced disease, in monkeys are so alike that microscopic study of the spinal cord and brain defines the changes as identical. The virus of poliomyelitis is remarkable, as the activity of a filtrate of a portion of the spinal cord of a recently paralyzed monkey, made into an emulsion with sterile distilled water, will transmit the disease, and a fraction of a cubic centimetre will cause paralysis, and death. The first filtrable parasite was discovered by Loeffler 14 years ago, in fluid lymph obtained from the vesicles of cattle, with foot, and mouth disease. Fully eighteen diseases, chiefly of cattle, are now known and caused by minute living organisms. These are human yellow fever, dengue, and poliomyelitis. The maladies in domestic animals are foot and mouth disease; horse sickness, cattle plague. The viruses producing these diseases are now subjects of careful research, and in time the entire problem will be defined. In poliomyelitis the conclusion is that the virus ascends by nerves of smell to the brain, and then to cerebro-spinal liquid, and thus carried to the entire body, so the nasal mucous membrane is actually the site both of ingress, and egress, of this disease. The most frequently observed coincidental paralytic diseases are between hens and human beings. Death in this disease is caused solely by paralysis of the respiratory function, without obscuring consciousness, almost to the very last. As to cure, no serum so far has more than touched the edge of this disease. As a remedial agent Urotropin, said to possess antiseptic action, is now under careful consideration. In 1876 Huxley lectured in Johns Hopkins on biological science, and what a remarkable advance since his day, in the whole domain of bacteriology. An interesting feature in poliomyelitis is its close association with insect life. At present the Massachusetts Board of Health and Harvard University are investigating the life history of the "stable fly," *Stomoxys calcitrans*, as a carrier of this disease. Dr. Rosenau, of Washington, states that the stable fly can take up the virus from blood of infected monkeys and reinoculate it into healthy ones, which will become paralyzed, thus establishing the fact that this fly actually carries the virus of the disease.

Who more charmingly than Burns stamped the character of insect life, when he saw a louse on a lady's bonnet?

Hal where ye gaun ye crawlin' ferlie,
O wad some power the giftie gee us,
To see oursels as others see us,
It wad frae monie a blunder free us,
And foolish notion.

Salvarsan as a therapeutic agent is attracting increasing interest. Lenzman (*Wen. Med. Klin.*, Nov., 1912), has tried the effect of this remedy in cases of severe scarlet fever by intravenous injections. The effect was quite typical after injections of a weak alkaline solution, subcutaneously under chloroform, the rash quickly lost its vivid color, appearing only sparingly on arms and legs. The speedy relief in throat symptoms was even more remarkable. The conclusion thus far arrived at is that treatment of scarlet fever by intravenous injections of salvarsan, or by subcutaneous injections, of weak alkaline solutions, exercise a favorable influence on the cause of this disease. Epilepsy is now being treated successfully by the inoculation of patients, with the venom of the rattler of the rattlesnake. The alleged cure of a Texas epileptic from a rattlesnake bite originated this idea. Dr. Spangler, of Chicago, has made fully 2,000 injections of the venom in solution, in 110 cases of epilepsy, with marked benefit, and already institutions for this venom treatment will be opened in Philadelphia, and Germany. In every case which Dr. Spangler treated with venom, there resulted not only permanent cures, and a decrease in the epileptic attacks, followed by a general building up of the physical and mental condition of the epileptic.

In educational matters the London County Council, England, has taken an advanced step of considerable interest, recommending the appointment of a psychologist, to assist head masters of the schools in the detection of mentally deficient children. Every teacher who has studied problems of the brain, must be aware that mentally defective children present many special mental faults. This educational experiment is on a line with modern thought, and if a process of curing recognized mental incapacities can be achieved for a new generation, a truly great advance will be brought about, and more especially as the presence among normal children, of those mentally deficient, is a most serious obstacle to educational progress. This educational recommendation is welcome as evidence of a progressive spirit in mental development, and that in due time the example will be widespread in Canada.

The scientific world of medicine is well represented in Oxford, England, by Sir Wm. Osler, whose recent address at Glasgow, on "High Blood Pressure" is of deep interest. At the present day this subject is passing rapidly around world-wide scientific circles. Life insurance associations have grasped the sphygmograph and demand blood pressure tests in all life policies at the present time. The force with which blood circulates is the pendulum regulating the organic activity of the entire system. What a propelling power the heart pump is, and throughout the varied vicissitudes of life, almost unobserved. How few think of the relief to a heart occasional rest in the recumbent posture imparts a change from the uphill pumping process of daily life, fatiguing, tiring and exhausting, frequently placed in sad record, by death from heart failure. This is a chief point where the untiring and strenuous efforts of the profession are tested, and valuable lives so frequently cut short, at the 50th to 54th year—Gibson, of Edinburgh, 54; Sir James Simpson, 58; Pepper, Philadelphia, 50; Wright, Ottawa, 52, in fact, numerous professional lights in middle life and prime. How true is the aphorism, "A man's life may be said to be a gift of his blood pressure, just as Egypt is a gift of the Nile." What an important function the vasomotor centres play in regulating the average pressure, in various sections of the body, in fact, the nervous system is the hoop that holds the varied staves of the system together. "The advantages of a trace of albumen and a few tube casts, in the urine of men at 50 years of age,"* aroused the thoughtfulness of our generation. The opinion is now accepted, that the presence of these abnormal products does not always indicate serious disease, or unnecessary alarm. Just in the same line, high blood pressure in a strong, vigorous and robust constitution requires a careful and judicious expression of opinion. What does permanent high blood pressure mean? Here everything is in a nutshell, as defined by Osler. High tension without signs of arterial or renal disease. High tension with renal, heart changes, and arterio-sclerosis, and chronic nephritis, with secondary high pressure, arterio-sclerosis, and heart changes. These are the conditions, and no snap diagnosis should be expressed. Trouble frequently sets in from an altered condition of the vessels of the splanchnic area; a bowel toxemia, or an over-secretion of doubtfully, by renals and adrenals, a chief source of difficulty existing "in the capillary cell, and the lymph spaces, in the working area of the body." The pace of modern life contributes in no small degree to an increased death rate, when arterio-sclerosis is present. The rush in athletic sports, straining and overtaxing cardiac and general vascular action, frequently cuts short

*Paper by Osler.

life in prime. It is puzzling how long a man will live with disease beyond doubt, in heart and arteries, associated with well-defined high blood pressure. Much depends on the parenchyma of the arterial system and its functionally active part, the middle or muscular coat; in fact, the *regulator mechanism of the entire arterial system*. A patient may be free for years from symptoms referable to the vascular system, so long as the increased peripheral resistance is adequately compensated for, by the ventricular hypertrophy. I have known a case of extensive cardiac disease at 45 years, associated with well-defined arteriosclerosis, and moderately swelled limbs, live to 70 years, discharging architectural duties, with skill, and marked ability, that entire period, contrary to my expectations, and finally died of erysipelas attacking the brain. In such states of the system failure of cardiac compensation is a point we require to be constantly on the outlook for. No one at 50 has kidneys completely normal histologically. In all these kidney conditions, extending over a wide range of observation, what a noble confession on the part of Osler, is the following statement: "I have not infrequently been mistaken, led astray usually by the robustness of the patient, and forgetting that chronic interstitial nephritis, leading to extreme contraction of the organ, may be consistent with good health, up to the very onset of fatal uraemic convulsions." What a piece of work is man, and how a change in a few cells will occasionally knock one out. Such is life.

For years I have observed cork-screw vessels in the conjunctival mucous membrane, and frequently associated with, much the same condition in the temporal arteries. This vascular irregularity, associated with arterio-sclerosis, is most important. The cork-screw condition is an effort of nature to overcome high cardiac pressure, and ultimate rupture. A horse descending a high hill, driven from side to side of the road, arrives safely, and so the cork-screw state of the vessels, lessens pressure, and saves life. "A touch of nature makes the whole world akin."



