Vol. XXX No. 10

The Nova Scotia Medical Bulletin

Official Organ of The Medical Society of Nova Scotia Canadian Medical Association Nova Scotia Division.

OCTOBER, 1951

Published on the 20th of each month and mailed to all physicians and hospitals in Nova Scotia. Advertising forms close on the last day of the preceding month. Manuscripts should be in the hands of the editors on or before the 1st of the month. Subscription Price: $3.00 per year.

It is to be distinctly understood that the Editors of this Journal do not necessarily subscribe to the views of its contributors.

1. Manuscripts should be typewritten, on one side only of the paper and double spaced.
2. Should proof be sent to a contributor, corrections must be clearly marked and no additional matter added, and the proof returned promptly.
3. Orders for reprints should accompany the proofs.
4. Communications should be sent to the Secretary, Dr. H. G. Grant Dalhousie Public Health Clinic, Morris Street, Halifax, N. S.
5. Please mention the Bulletin when replying to advertisements.

Presidential Address*

J. J. Carroll, M. D.

Mr. Chairman, Ladies and Gentlemen:

I NOTICE in the program that I am down for the Presidential Address. That sounds rather imposing, andfe ar that this swan song hardly rates the term. However, it will be brief. I am honored to have the privilege of giving this talk, but an rather awed with the prospect. We regret the absence of His Excellency, Bishop MacDonald, Chancellor of the University, who is unable to attend and extends his wishes for the success of our meeting. We are honored to have as our guest Monsignor Nicholson, Rector of the University, without whose generous co-operation our meeting in Antigonish would not be possible. We are also honored to have as our guests Reverend Father Gallivan, Rector of the Cathedral and Mr. J. R. Kirk, Member of Parliament for the constituency of Antigonish-Guysboro and Mrs. Kirk. To these we extend the welcome of this Society. We regret the absence of Rev. E. V. Forbes, Pastor of St. James Church and Mrs. Forbes, Mr. Colin Chisholm, M.L.A., for the County of Antigonish and Mrs. Chisholm, who were unable to be here tonight.

From the ranks of our profession we have as our guests Dr. Harcourt Church, the President of the Canadian Medical Association and Mrs. Church, Dr. Carleton Pierce, Professor of Radiology of McGill University, Dr. E. M. Worden of Montreal, Dr. H. M. Coleman of Toronto, Dr. Glen Sawyer and Dr. Arthur Kelly the Deputy Secretary General of the Canadian Medical Association. Dr. and Mrs. Church are making the Presidential tour of all Canada, and we are proud to have the privilege of welcoming them to Antigonish. Dr. Church was the guest speaker to-night, and we certainly appreciated his talk on rural general practise which was of such particular interest to all of us in this Province. To the members of the Canadian Medical Association team and Dr. Sawyer and Dr. Kelly we are grateful for their excellent papers. Since Newfoundland came into confederation, the Canadian Medical Association Easter tour takes almost three weeks, and we certainly appreciate the generosity of these busy men sacrificing such a long period of time.

To those of the profession in the Province, who have assisted in the program, we are indebted for excellent papers and discussions. We regret that Dr. Beck of Cleveland, who was to visit Nova Scotia this year, was unable to make the trip, and we look forward to the pleasure of hearing him at some future meeting of this Society. We particularly regret the absence of Dr. Archie Wilkie a native son of Antigonish, who was to be with us.

With the closing of each year it is customary to review the events of the year and to consider events of the years to come. As in all other spheres of life there is a trend from the staid conservatism of an older generation to the more radical outlook of the present generation. Those of us who have practiced for some time have seen very striking changes in the concepts of the practice of medicine in our day. Quite apart from the progress of medical science has been the change in the social values of medical practice. As in all other spheres of life there has been a gradual trend to greatly increased health

*Delivered September 12, 1951, at the Annual Banquet of The Medical Society of Nova Scotia.

services usually under the auspices of the State. This is more noticeable in some countries, and even in some of our own provinces, and how far or how long this trend will continue is a matter of conjecture. Whether we like it or not we are all caught in this trend, and must consider how we may be affected by these changes. Perhaps I had better review the events of the last year before taking over the future, which will probably look after itself anyhow.

During the year the question of medical care of the Welfare Group was a very provocative subject. This was threshed out at several executive meetings, and at a special general meeting in the spring. While there were a great number of conflicting opinions in the Society on the merits of this scheme, I believe the experience gained in this project has been well worth while. It has shown the difficulty of applying a free medical service to any group of people without some check on the uses of the service. It has been praticularly of value in high-lighting the difficulties of having mileage fees in any scheme. I do not believe there is any medical care plan in Canada allowing mileage fees, and our experience here has certainly taught us some of the pitfalls associated with this factor.

I do not know what the incoming Economic Committee are going to recommend when the present contract for welfare care in this Province lapses, but certainly some thought must be given to a check on unnecessary mileage, even if a part of the mileage fee had to be assessed to the recipient of the service. A very interesting fact was the welfare group response to the letter enclosed with their July cheque. Most of the pensioners were really astounded that the medical service was anything but an outright government service and were surprised at the contribution made by their own doctors to this plan. My faith in the independence and integrity of people of the Province served by this plan was renewed by the number who felt that they should pay the difference which had been prorated by the Welfare Fund. This was not a local condition, as many medical men in the various parts of the Province have had this same experience. I wonder if we have given this plan enough open discussion in each area? We are all rather prone to conservatism in these matters but, after hearing the comments after the note went out to the pensioners, I feel that if more information had been given to the pensioners a great deal of the dissatisfaction with the plan would have been avoided.

One of the most successful activities of the year has been the setting up of the Kellogg Fund for post-graduate medical education. Dean Grant is certainly entitled to the thanks of this Society for his successful efforts in interesting the Kellogg Foundation in the advancement of general practice in this Province. As the greater part of this Province is served by general practitioners the results of this work should help to greatly raise the quality of service given. Unless one has done general practice in a rural area it is difficult to appreciate the difficulties associated with getting away to do post-graduate work. Where a doctor serves a community alone, and is unable to get a substitute, he finds it almost impossible to take regular post-graduate study even though he realizes such work would make his efforts more successful. The annual Refresher Course has done a marvellous work in making available each fall a short course in the newer phases of medicine, and a rapid brush-up in a lot of the other aspects of scientific medicine so frequently forgotten in the rush of general practice.

This new grant, by bringing post-graduate education to the practitioners of the various communities, greatly amplifies the excellent work of the annual Refresher Course. For some years now there has been a committee of this Society trying to arrange extra mural post-graduate work for general practitioners, which might be acceptable instead of residencies for the certification exams of the Royal College. I believe the post-graduate work made possible by the Kellogg grant, plus the very excellent Refresher Course, might some day be amplified to include extra mural courses followed by intensive intra mural courses, which might be acceptable to the Royal College. Even if this is not possible, the facilities for study should do a lot to improve the work done by our medical men. I ws very interested in receiving the recent issue of post-graduate news from Dalhousie University. This is the first time, to my knowledge, that such a definite effort has been made to provide facilities for post-graduate education for the general practitioner of this Province. I hope the facilities will be well used, and that this is simply a preview of the post-graduate set-up of the future.

I believe these were the most important events in the practice of this province in the past year.

I have no illusions of my ability as a prophet, and do not qualify in crystal gazing. However, there are some events of the near future not difficult to foresee. Those who had the privilege of attending the general council sessions of the Canadian Medical Association this year were particularly interested in the progress of Trans Canada Medical Services, and the interest taken in this organization by the Government of Canada. For some years each session of the House brings the possibility of the implementation of Health Insurance.

With the projected organization of Trans Canada Medical Service the medical profession will eventually have a prepaid medical coverage available throughout Canada. The growth of all the plans included in the projected set-up has been steady, and has now assumed a very large place in the provision of medical care in Canada.

Since the original study on health insurance in Canada the government now has the experience of Great Britain, New Zealand and Australia in addition to the experience of our own Provinces in the field of medical care and hospitalization. With the formation of Trans Canada Medical Service a wealth of experience will be gained in the administration of prepaid medical schemes. The integral units of this plan have learned a great deal, most of it the hard way, and I believe the collective experience of these groups would be of the utmost value to the state in any further reassessment of Health Insurance.

All of these plans depend for their success on the successful co-operation of the three groups involved—patients, hospitals and doctors. I have often wondered if there has not been a great deal of re-duplication of effort by these groups all of which have the same ideal—that is a good medical service to the general public at a cost which is within range of the person in moderate means. I believe the formation of Trans Canada Medical Service is a step in the right direction, and the interchange of ideas by the constituent groups would tend to improve available service. Each year the economic committee of this

Society seems to have more work to do, and I believe each year will add more to their duties. We have been very fortunate in the past years to have had excellent economic committees, and I think the committee of this year has been particularly hard worked, and I wish to particularly thank the members of this committee for the amount of time and work that they have given during the past year.

I wish to thank all the officers, and the members of this Society, who were always so willing to help in the work of the Society. In closing, I wish to extend again the welcome of the Antigonish-Guysboro branch, to our guests and members who have so helped to make this meeting succesful.

Some New Concepts in Bacteriology

DONALD M. SIMPSON*

THE material to be presented under the above title is somewhat of a pot-pourri and will therefore leave a kaleidoscopic impression. But then, this is true, to a great extent, of the status of accumulated knowledge in the entire field of bacteriology. It has been pointed out that the clue to the present position of bacteriology is the curious fact that there have been no bacteriologists. From Pasteur onwards the great majority of investigators have been more interested in what bacteria do than in what they are. The emphasis has been on the manner in which bacteria disrupt the smooth tenor of our lives and activities, rather than on the manner of their functioning as autonomous living organisms. Without the prior establishment of a foundation of purely scientific knowledge, we have witnessed the development of an applied science of bacteriology. In the course of this development many workers have been led far afield from the original course of their investigations, sometimes of necessity, sometimes spurred only by an overwhelming curiosity, and as a result an extensive body of knowledge exists relating to many aspects of bacterial morphology and physiology. Nevertheless, the study of bacteria themselves has been generally carried out in passing.

The newer concept of bacteriology as a whole places increasing emphasis on the organisms themselves, and a field of studies in pure bacteriology has arisen which embraces anatomy, physiology, biochemistry, enzymology, nutrition and metabolism. These studies frequently, and perhaps one should say ultimately, provide new techniques in applied bacteriology. Certainly they eludicate many obscure points and are gradually filling in many gaps in our knowledge. But great gaps still exist and in respect to many problems, suggestions as to how certain phenomena occur serve only to highlight our state of ignorance.

In the light of the foregoing remarks, the following notes are but a brief resumé of current views, concerning only a very few aspects of bacteriology, which it is hoped will be found of interest to the busy clinician.

The Bacterial Nucleus: Yes or No?

One of the most fascinating problems that has engaged the attention of bacteriologists over the years, one which has produced a voluminous and conflicting literature, is that of the bacterial nucleus. In the accepted sense a nucleus may be defined as a body present in all of the cells of higher organisms which are living and capable of further division, which is morphologically distinct from the cytoplasm, which contains large amounts of desoxyribonucleic acid combined with proteins and which alone bears the hereditary characters of the organism. These criteria have not been convincingly satisfied in the case of the bacteria. But the conception of cellular protoplasm containing distinct nuclei and cytoplasm, upon which our ideas of biology are based, is not necessarily valid for very minute organisms. It may be that,

*Head, Bacteriological Division, Laboratory Service, Camp Hill Hospital, Halifax N. S.

in the bacteria, the point on the scale of minuteness has been reached where the physical limitations of the organism do not permit of differentiation.

The various opposed views which have been presented regarding the existence of nuclear apparatus in the bacteria may be tabulated as follows:

1. No nucleus at all.
2. The entire bacterial cell constitutes a nucleus.
3. The possession of a true vesicular nucleus.
4. Nuclear material present but diffused throughout the protoplasm.
5. Organized bodies comparable to the chromosomes of higher organisms.

Space does not permit detailed examination of all the foregoing theories. Nevertheless, the first and second, which were among the earliest advanced are not at all satisfactory because, from the biological standpoint, a nucleus without cytoplasm is as implausible as cytoplasm without a nucleus.

Modern research has given us every reason to believe that bacterial cells contain chromatin-like material; the Feulgen reaction has demonstrated desoxyribonucleic acid in bacterial cells. Cytological techniques employing nuclear reagents have revealed that many bacteria do contain structures which are nuclear in behaviour. At least, many investigators so believe. There have been reported for many bacterial species, well-defined Feulgen-positive structures which react like chromatin with basic dyes, and exhibit a regular cycle of division. Such structures have been called nuclei, nucleoids, protonuclei, chromosomes and chromatinic bodies by various investigators and are believed to be the bearers of the hereditary mechanisms of the bacterial cell. Some very impressive work has been done along this line by Dr. Carl Robinow of the University of Western Ontario, and his beautifully prepared, specially stained preparations are most convincing.

The chief point of disagreement among modern workers, then, would seem to be the morphological character of the nuclear apparatus, not the fact of its existence. The full problem remains to be resolved, but meanwhile it is of the utmost importance to bear in mind the fact that the bacteria can and do undergo hereditary variation, affecting particularly those characters which condition pathogenicity.

The Filterable Growth Phase in Bacteria

This is a subject of very great interest and importance which I feel must be mentioned if only briefly. Interested readers are referred to a recent comprehensive review for details and literature references.* There have been numerous reports in the literature of the occurrence of filterable elements in cultures of bacteria, but after wide initial enthusiasm interest gradually subsided owing to the inability of other workers to obtain similar results and the failure of the original workers to establish definitive experimental conditions which would allow of replication. However, in 1935 Klieneberger-Nobel demonstrated for the first time that a growth form, which was not bacillary, could be separated from *Streptobacillus moniliformis*, the cause of rat-bite fever in man. This growth form was designated by the letter L, and for *S. moniliformis* in particular, L1. The problem was to decide if the L phase (strains of which can be bred true, but difficultly) was a growth phase of

*Klieneberger, Noble, E., 1951. Filterable Forms of Bacteria. Bacteriological Reviews, 15, 77-103.

the "parent" organism or a symbiont genetically different. Originally, because of the striking similarity of L1 to the pleuropneumonia group of organisms the latter interpretation was accepted. This view was soon challenged, however, particularly by Dienes, who showed, by continuous warm stage observation, that the L bodies divided and finally reproduced bacilli. Klieneberger-Novel now agrees that the L phase is a growth phase and has further demonstrated by phase microscopy that bacteria produce small granular elements which seem to fuse; the fusion is rapidly followed by development of L bodies. She is of the opinion that the L cycle is a process of regeneration in bacteria, equivalent to a sexual process in higher organisms and is most likely a general feature of all bacteria. Dienes has demonstrated the L phase in *E coli, Flavobacterium sp., H. influenzae* and *para-influenzae, Proteus vulgaris, Salmonella typhi*, and other *Salmonella spp., Shigella spp., Bacillus spp.* and *Clostridium spp.*

Much work has been done on filterable forms of the spirochaetes and the acid-fast bacilli, particularly *Myco. tuberculosis.* In respect to the latter organism, new work by Brieger has led him to conclude that two different stages of the organism may exist. Certainly all the assembled evidence points to the fact that the tubercle bacillus can go through a regenerative cycle, with a granular, filterable phase. The chief technical difficulty to be surmounted is that of growing the granular phase, so that it may be carried true through successive generations.

At present the knowledge of the L phase is still scanty, but with the improvement of techniques, particularly of media for culturing the L phase with greater ease, so that electron and phase microscopy and other modern aids to morphological study may be better applied, much new knowledge will be forthcoming. As a result many of our concepts of pathogenesis of disease may have to be altered radically, with the adoption of new therapeutic approaches. It is significant to note that, in certain species of bacteria, the L phase is penicillin resistant, in contrast to the sensitivity of the homologous phase.

Aerobes and Anaerobes

Most will recall the older definitions of these metabolic groups; an aerobe was regarded as an organism capable of growing only in the presence of oxygen, an anaerobe as capable of growth only in the absence of oxygen. Faculative anaerobes were those organisms capable of growth under either condition. In the newer concept these definitions have lost their original meaning, since many species commonly classified as aerobes are capable of limited growth in the complete absence of oxygen, while the so-called obligate anaerobes will flourish in a liquid medium provided a sufficiently low oxidation potential is maintained. We now consider aerobes as those organisms which derive their energy by respiration, that is, the complete oxidation of carbohydrate to carbon dioxide and water. These organisms contain catalase and the complete cytochrome system. On the other hand, the anaerobes derive their energy exclusively by fermentation (anaerobic oxidation) and possess neither catalase nor the cytochrome system. Such bacteria as, for example, most strains of streptococci, although grown in air, derive their energy primarily by anaerobic fermentation and are incapable of true respiration. In all such

examples the cytochrome system is lacking or incomplete, and from the standpoint of metabolism it would be preferable to consider them as anaerobes. However it is customary to regard them as facultative anaerobes.

With respect to the energy substrate it is interesting to note that aerobes, as defined above, can break down glucose (the most common energy source for bacterial growth) completely, in suitable environment, to carbon dioxide and water, with a free energy exchange of 686,000 calories, whereas anaerobes can only partially break it down, as in the lactic acid fermentation, with a free energy of 54,000 calories. Thus fermentation is a wasteful process and in the laboratory, growth of strains deriving energy by fermentation, is suppressed by such waste products as lactic and other acids, unless suitable measures are taken to neutralise them.

New Fluid Media for the Cultivation of Mycobacterium Tuberculosis:

Much reference has been made in the past two or three years to fluid media, under the general term Dubos' medium, employing fatty acids or, more specifically, esters of fatty acids (the various "Tweens", e.g. Tween 80, a water-soluble ester of oleic acid) for the rapid cultivation of pathogenic mycobacteria. A few words of explanation regarding these media may be of interest.

The media in general use in the past have been of two types, simple synthetic media and media containing complex organic materials, particularly yolk of egg. On the former media growth can be initiated only by the employment of very large incocula, whereas, on the latter media growth can be obtained, under optimum conditions, of an inoculum consisting of but a single viable cell. For this reason the various media containing egg as the basic constituent, have been commonly utilized in diagnostic cultivation. It is held that such complex organic substances supply an essential growth factor which the organism can synthesize only slowly and difficultly in simple synthetic media. But, since the growth requirements of tubercle bacilli are essentially simple, evidence is accumulating to the effect that small inocula fail to develop in synthetic media not so much owing to nutritional inadequacy of the medium as to the presence therein of inhibitory substances.

In the development of the new media it has been demonstrated that the effect of such normally toxic agents as the long-chain fatty acids can be neutralised by the addition of serum albumin, and that, under these conditions, rather than being toxic, such agents exert a marked stimulatory effect. The rapid growth obtained in media employing the water soluble ester of oleic acid, Tween 80, may be attributed to the effective wetting of the hydrophobic surface of the bacterial cell by this lipophilic substance. It allows of diffuse or dispersed growth of the organism in an aqueous medium, which is in marked contrast to the usual heaped-up, conglomerative type of growth obtained in ordinary media. In addition to the effect which dispersed growth has in exposing a much greater cell surface to nutrients in solution, it would seem that Tween 80 also renders the cell wall more permeable to the passage of nutrients.

The place that these newer media will find in the routine diagnostic bacteriology of tuberculosis remains to be seen. That they simplify many

technical problems met with in the study of these organisms in pure culture is no longer in question.

Enzymes

It is desired to discuss briefly two classes of enzymes which are of considerable current interest, the Hyaluronidases and the streptococcal haemolysins O and S. Recent work indicates that the bacterial haemolysins are, in all probability, enzymes, and for that reason the O and S streptolysins are included here.

Both streptolysin O and streptolysin S are soluble haemolysins; they are capable of dissolving red blood cells and releasing the haemoglobin. They are not the only haemolysins elaborated by the streptococci but are the ones of major interest in human infections. Streptolysin O is oxygen labile and is elaborated by most strains belonging to Lancefield's serologic group A, by "human" group C strains, and by the large colony forms of group G. It is readily oxidized to an haemolytically inactive form, but may be re-activated by means of reducing agents. In either form it combines quantitatively with anti-streptolysin O, an antibody produced in the serum following infection with strains of streptococci elaborating streptolysin O. Since streptolysin O in its haemolytically active state, loses its haemolytic property when neutralised with immune serum, and since the neutralisation is quantitative, it is possible to measure the antibody content of a patient's serum by the application of this phenomenon. Because every strain involved does not produce streptolysin O, this quantitative determination is not applicable in every case. However, approximately 90% of patients so infected develop demonstrable amounts of the antibody. Large antibody content or increasing titer within two to three weeks indicates infection of fairly recent origin by haemolytic streptococci. The antibody may persist for a long time.

Streptolysin S is a serum-extractable haemolysin which is produced only by strains of Lancefield's group A; it is very unstable and its activity can be maintained only when frozen with solid carbon dioxide, or in lyophilized dialysed solutions. This streptolysin would seem to exist in serum extracts as a hapten, since formation of anti-streptolysin S can be induced only by the injection of intact cells into animals. In contrast to anti-streptolysin O, in which serum levels may attain several hundred to several thousand units per cc., concentrations of anti-streptolysin S range from 30-50 units per cc.

A point of considerable interest and importance in the laboratory is that the haemolysis which occurs around streptococcal colonies on the surface of blood agar (the so-called beta haemolysis) is the result of streptolysin S activity solely. It follows therefore that a strain of group A streptocccus forming only streptolysin O would appear to be non-haemolytic under ordinary cultural conditions.

The hyaluronidases are a group of bacterial enzymes characterised by their ability to hydrolyse hyaluronic acid, a viscous polysaccharide acid of high molecular weight, which is found in the vitreous humour, Wharton's jelly of the umbilical cord, the interfibrillar material in connective tissue and the intercellular ground substance of cartilage. These enzymes are often adaptive, that is, are formed only in the presence of the subtsrate, and the hyaluronidases formed by various bacteria differ in their action on hyaluronic

acid. For example, it has been shown that the end products of hydrolysis by *Cl welchii* hyalurondiase differ from these produced by the action of streptococcal hyaluronidase. Hyaluronidase is produced by *Staph. aureus*, certain strains of group A, streptococci, streptococci of "animal" group C, *Diplococcus pneumoniae*, various *Clositridium spp.*, and by some strains of *C. diphtheriae*. It has not been found in species tested in the following genera: *Bacterium*, *Pasteurella*, *Rickettsia*, *Bacillus*, *Brucella*, *Vibrio*, *Hemophilus* and *Neisseria*. Space does not permit a full discussion of the relationship between the "spreading" or "diffusing" factor and the bacterial hyaluronidases. This subtsance, contained in extracts of bull testicle, increases the area of lesions following injection of infective material and increases the permeability of tissues to toxins, dye solutions, suspensions of India ink, etc., presumably acting, by virtue of contained hyaluronidase, on the hyaluronic acid present in connective tissue as mentioned above. Among the streptococci, most experimental data would seem to exclude any direct relationship between virulence and the production of hyaluronidase, but it may be that under circumstances not as yet defined the enzyme is capable of focally hydrolysing the somatic hyaluronic acid to induce lesions. Considerable work remains to be done in this field.

Growth factors and Chemotherapeutics

The essence of science is a thirst for knowledge, not as a means to an end, but as an end in itself. This is a fundamental truth, but in closing I wish to cite the case of the sulfonamides and folic acid as an illustration of the supreme importance of studies in pure science in supplying, bit by bit, additional pieces to the mosaic of our knowledge and at the same time, in this case, providing information of great practical importance.

For some time it was hypothetically assumed that the sulfonamides exerted their action by blocking the normal bacterial utilization of para-aminobenzoic acid. Fairly recently it was discovered that folic acid is an essential substrate for the growth of many bacteria; this discovery provided the evidence necessary for confirmation of the above idea. Folic acid or pteroyl-glutamic acid (PGA) is a conjugated molecule consisting of one residue each of glutamic acid, PABA and a base, pteridine. It would seem well established that the sulfomanides prevent incorporation of PABA into the PGA molecule and with this in mind we can generalize somewhat as follows:

1. Sulfonamide-insensitive organisms are those for which folic acid is not an essential substrate, or which,:
2. Require ready-made folic acid. Since such organisms cannot synthesize folic acid they lack the metabolic step on which the sulfonamides act.
3. Sulfonamide-sensitive organisms are those which must produce their own folic acid, utilizing PABA to do so.

In the last case the inhibitory effect of sulfonamide may be counteracted by either PABA or PGA. With the former, the antagonism is competitive, growth inhibition being dependent upon the ratio PABA: Sulfonamide, whereas, in the presence of PGA, sulfonamide is without effect, regardless of concentration, within certain limits.

To conclude may I once more point out that owing to limitations of space the foregoing presentation has been, of necessity, brief and fragmentary. However, it is hoped that it will serve to demonstrate that the science of bacteriology is advancing on several new fronts.

Drug Eruptions

Howard I. Goldberg, M. D.

IN this presentation the term, Drug Eruption, is confined to the dermatological manifestations produced by drugs that are taken or administered internally, as opposed to those dermatoses produced by topical allergens or primary irritants.

When one considers the myriad of new drugs that have been added to our therapeutic armamentarium, one can realize the importance of being able to interpret properly some of their idiosyncrasies. A text in internal medicine of only about ten years ago devotes only a few pages to this subject, whereas similar texts of today contain whole chapters. It has been stated that drug eruptions have replaced syphilis as the great imitator. Certainly this is true dermatologically, because a drug eruption can be anything from a simple pruritus to a severe exfoliative dermatitis.

Although dermatoses have been reported as a result of ingestion of any known therapeutic agent, there is a higher incidence among certain drugs. Nirvanol and atebrine produce skin manifestations in nearly everybody, whereas this never occurs with such commonly used preparations as cascara sagrada, saline cathaeties or castor oil. One can place such drugs as penicillin and sulfonamides somewhere in between these two extremes.

The mode of action in the production of drug eruptions has been proven to be, in the majority of cases, based on an allergic mechanism. As with the case of applied allergens, the host first experiences a long period of refractoriness to sensitization before entering the period of actual sensitization, which with drug allergens is usually 5-10 days. Once the individual is sensitized the dermatosis will always appear, on re-exposure to the drug, after a definite so-called reaction time. With urticarial eruptions this is a matter of minutes to a few hours, and with eczematous-like eruptions, 24-28 hours. However, certain drugs may act as a trigger factor: e.g. halogens can cause an acne to flare up or a herpes simplex may erupt after ingestion of arsenicals of gold salts.

In recent years many interesting observations concerning drug eruptions have been established. For example it is well-known that prolonged ingestion of arsenic can cause a hepatitis or a blood dyscrasia, but this in turn does not mean that an individual with an arsenical dermatosis will necessarily develop these internal manifestations. Similarly a patient who has an agranulocytopenia from taking sulfonamides is not more likely to develop an ellergic dermatosis from this drug. Furthermore, a drug producing a reaction on one exposure does not necessarily produce a reaction on each and every subsequent exposure and repeated exposures may even result in desensitization. This is similar to the process known as "hardening", which is frequently observed with industrial dermatoses where the worker by repeated exposure to the contact allergen gradually becomes desensitized to it. It has also been observed that some drug reactions persist even after with drawal of the offending drug; this is particularly so with arsenical eruptions and bromodermas.

Also, one drug may produce several different forms of dermatological reaction in the one individual e.g. an acneform eruption from iodides may be associated with an eczamatous eruption from the same drug.

The route by which the offending drug reaches the sensitized tissues may or may not influence the result. One of the best examples of this in the literature is the case wherein chloral hydrate is the allergen.[1] Here an allergic eczematous contact-type dermatitis of the scalp and neck was proven by patch-testing to be due to the topical use of chloral hydrate and subsequent oral ingestion of chloral hydrate, as a sedative, resulted in an acute exacerbation of the original dermatitis. Another classical case is one with quinine. Again an eczematous reaction of the scalp due to this drug in a hair tonic is subsequently exacerbated by a parenteral injection of a quinine salt and is still later exacerbated by the same drug administered orally.

Of utmost importance in the diagnosis of a drug eruption is careful and detailed history taking. So many active therapeutic agents are today masked by trade names that a certain amount of detective work on the part of the physician is necessary. It is obvious that one asks the patient whether he or she is taking Ex-Lax rather than inquiring about phenolphthalein. At all times the physician should entertain a high index of suspicion, particularly when dealing with persistent, chronic dermatoses. Further, one should not hesitate to withdraw a suspected drug, because if this should result in the elimination of the dermatosis then this simple procedure corroborates the diagnosis.

Several aids in the identification of the eliciting drug allergens are as follows:

1. Recognition of the type of eruption. Many drugs can be identified by the morphology of the skin reaction they produce. The reader is referred to Table I[2]

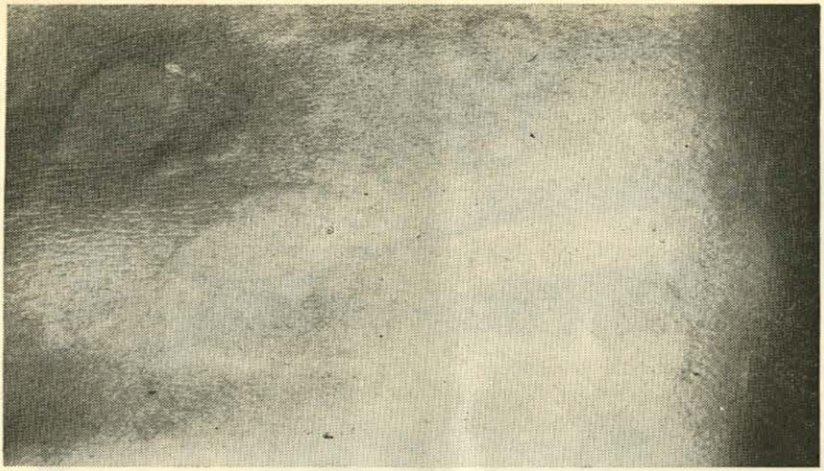
2. The history in a sensitized individual may reveal the type of reaction time and therefore the type of allergen: e.g., if dealing with an urticarial eruption, exposure to the urticariogenic allergen will have occurred minutes or hours before the onset of the eruption.

3. Re-exposure to the suspected drug will result in a recurrence or exacerbation of the eruption.

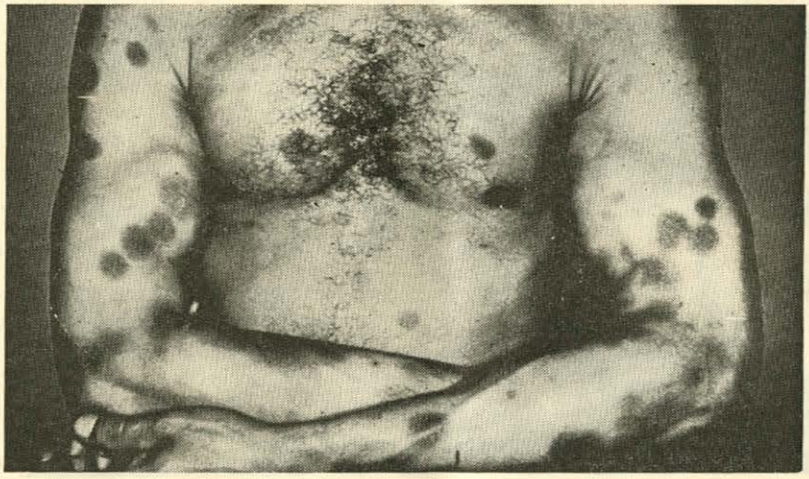
4. Skin tests are of no practical value except in a few selected cases. Patch-tests may reveal the offending allergen causing an eczematous type of eruption. Scratch and intracutaneous tests are used when dealing with urticarial eruptions, but many drugs e.g. morphia and acetyl choline, are primarily urticariogenic and to date there have been no specific circulating anti-bodies demonstrated in the blood of patients exhibiting a drug eruption.

Apart from conscientiously avoiding the offending drug, treatment is essentially symptomatic and dependent on the morphology of the eruption e.g. anti-eczematous, anti-acneform, anti-pruritic, etc. In the case of a sensitivity to heavy metals, specific treatment with BAL is indicated.[3]

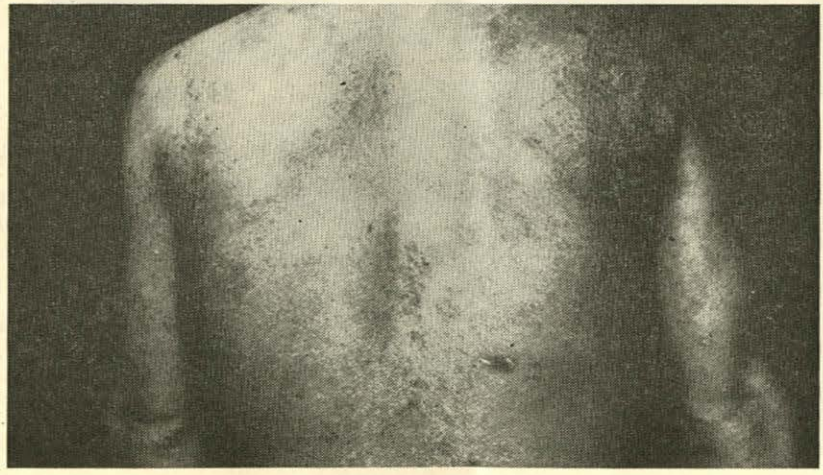
Replacement therapy with drugs that are pharmacologically unrelated is sometimes necessary e.g. in lieu of a barbiturate use codeine, paraldehyde or chloral hydrate; in lieu of arsenicals use bismuth or penicillin; in lieu of peni-



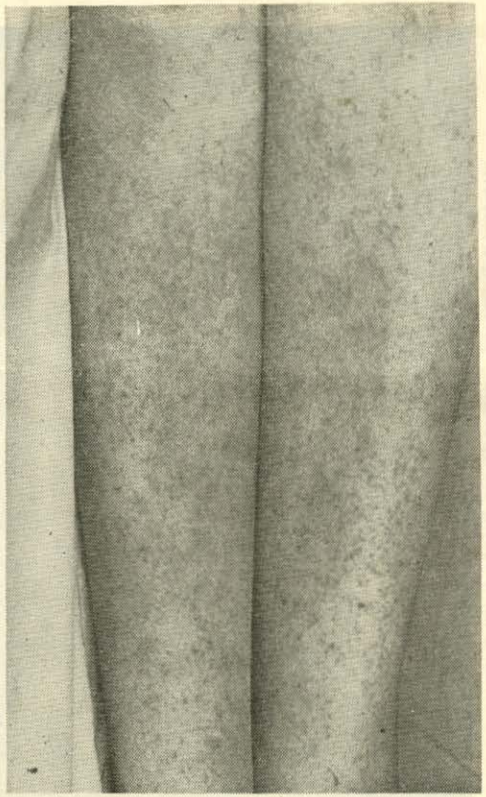
1. Urticaria—salicylates.



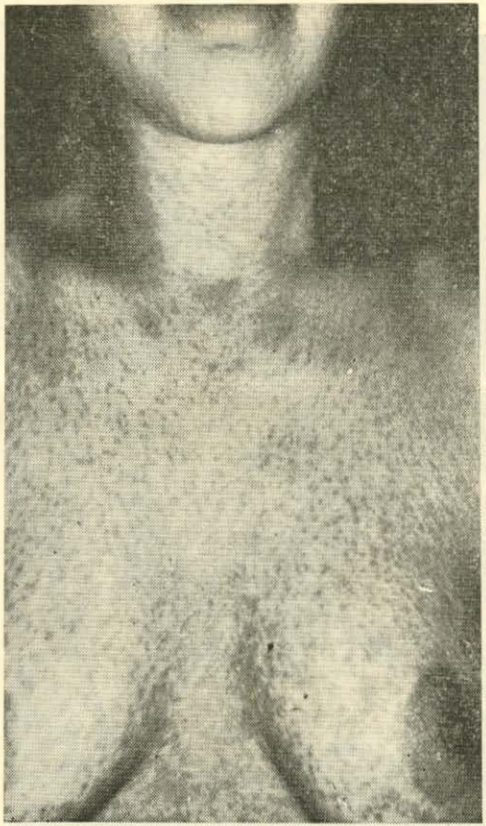
2. Fixed Drug Eruptions—phenolphthalein



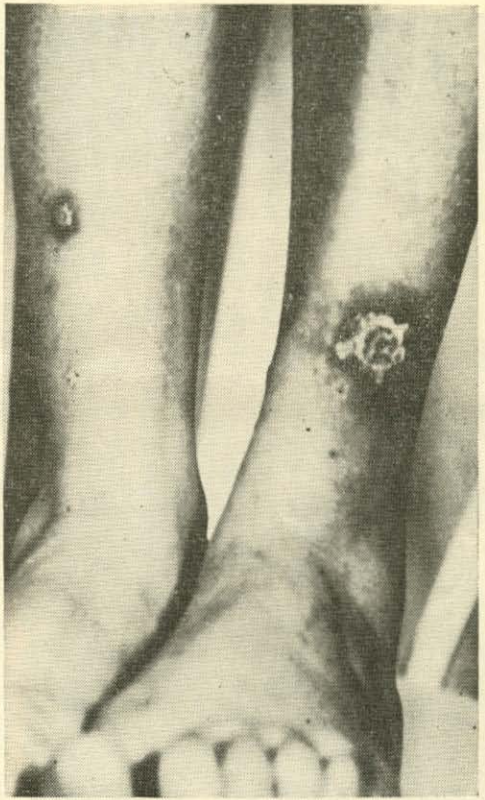
3. Eczematous dermatitis—arsenic



4. Purpura—sulfanilamides



5. Eczmatous dermatitis—phenobarbital



6. Bromoderma.

cillin use aureomycin or chloromycetin; in lieu of salicylic acid use quinine or antipyrine. The condition of the patient may require continuation of the effects of these drugs.

In some diseases the ingestion of certain drugs may produce severe systemic reactions or an aggravation of the existing condition. Therefore one should use caution as when giving salicylates to atopic and asthmatic individuals.[4] Iodides, for the same reason, should be avoided in individuals with acne vulgaris, acneform eruptions, dermatitis herpetiformis or recurrent herpes.

There are many more non-specific adjuncts to therapy that seem to act by increasing the patients' tolerance to drugs. Injections of crude liver or autohemotherapy may be beneficial. Ascorbic acid and vitamin K are used with drugs known to produce pruritic or hemorrhagic effects. Eradication of foci of infection is important. The anti-histaminics are of great value particularly when dealing with urticarial eruptions. Not too infrequently this type of eruption occurs during the course of penicillin therapy for syphilis, in which case use of the anti-histaminics enables one to adhere to the treatment schedule to the end. Finally, mention should be made of ACTH and cortisone. Cautious use of these in selected cases of severe drug eruptions can produce dramatic remissions.

TABLE 1

Antipyrine—fixed eruption; urticarial.

Arsenic—eczematous and eczematoid (localized and generalized); erythemas (palmar and plantar); erythrodermas; exfoliative dermatitis (localized and generalized); follicular hyperkeratoses; keratoses (palmar, plantar and other); leukodermas (localized and generalized); melanodermas (localized and generalized); neurologic changes-neuritis, neuralgia, other paresthesias, hyperesthesia pain; pemphigoid (bullous) eruption; Vasomotor disturbances—(pallor, blushing, "Raynaud's disease", acrodynias).

Atabrine (Quinacrine hydrochloride)—eczematous and eczematoid eruptions; lichen planus-like eruptions; exfoliating erythrodermas; ungual dystrophies.

Iodides and Bromides—acenform eruptions; erthyema multiforme like eruptions; erythema nodosum-like eruptions; tuberous and fungating neoplastic, tumor-like eruptions; furunculosis-like eruptions.

Penicillin—angioneurotic edema; eczematous and eczematoid eruptions (contact-type); exanthems with joint swellings and other manifestations resembling serum sickness; morbilliform eruptions; urticarial eruptions; pompholyx and dishydrosis-like eruptions of the hands and feet.

Phenolphtalein—fixed eruptions.*

Pyramidon—like antipyrine; blood dyscrasias.

Quinine—eczematous eruptions; edemas and erythemas, exfoliating erythrodermas.

Salicylates—angioneurotic edema; asthma; urticarial; erythema multiforme-like; erythema nodosum-like; constitutional reactions (sometimes fatal).

Barbiturates—morbilliform; purpuric and hemorrhagic eruptions; mucous membrane eruptions (multiform and bullous); Nirvanol disease.

Sulfonamides—angioneurotic edema; eczematous and eczematoid eruptions (contact-type); erythema multiforme-like; erythema nodosum-like; morbilliform; scarlatiniform; serum sickness-like reactions; urticarial eruptions.

*Fixed Drug Eruption—fixed to the site and always recurring in approximately the same site. It is thought to be produced by local sensitization.

References

1. Baer and Sulzberger. The Journal of Allergy. Vol. 9, No. 5. pages 519-520, July, 1938.

2. Sulzberger, M. B., Dermatologic Allergy (Springfield, Ill.: Charles C. Thomas, Publisher, 1940).

3. (a) Sulzberger, Baer and Kanov. Clinical Uses of 2, 3-Dimercaptopropanol (BAL). Journal of Clinical Investigation vol. xxv, No. 4, pp. 488-496, July, 1946.
   (b) Sulzberger and Baer. Development and Uses of BAL. The Journal of the American Medical Association. Feb. 1, 1947, Vol. 133, pp. 293-296.

4. Walton and Bottomley. Allergy to Aspirin. The Canadian Medical Asociation Journal. Vol. 64, No. 3, pp. 187-190, March, 1951.

PHYSICIANS WANTED

Imperial Oil Limited wishes to obtain the services of two full-time physicians. Applicants should have a good general training and background, with special interest in health counselling, preventive medicine, and early diagnosis. Certification in Internal Medicine is desirable.

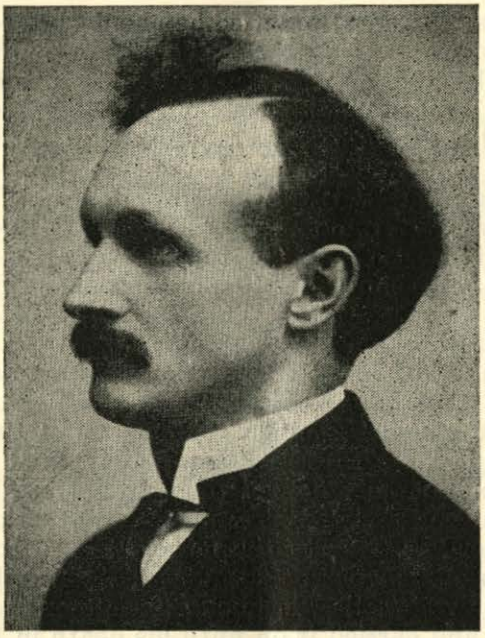
We would be pleased to have any suitable applicants communicate with

Medical Director,

Imperial Oil Limited,

56 Church Street,

Toronto 1, Ontario.



X-Ray Vignette

BERTHA O. ARCHIBALD

MUSEUMS sometimes contain weird and curious specimens. I once had a friend who was possessed of a rather morbid curiosity. One day I received permission to show her through the Medical Museum in the Pathological Institute. Before we completed our tour, to my surprise she became exceedingly hysterical. This article concerns a museum specimen of another sort—an antique.

A young man by the name of Herbert Weaver, a graduate of Toronto University in Medicine, decided that he would go "Down East" and visit the Medical School in Halifax, Nova Scotia. He specialised in Radiology, and was rather anxious to receive an appointment to the staff of the old Victoria General Hospital. To his surprise the hospital did not have a Radiology Department, not even a machine. This was about the year 1903. It was not long, however, before such a department was organized, and Dr. Weaver was appointed a committee of one to go to Boston and purchase an X-ray machine.

He not only purchased one for the hospital, but also bought one for his own private practice. He established his office at 40 Brenton Street, the home formerly occupied by the Langley family.

This quiet, rather unassuming young professor soon became keenly interested in his medical students, and particularly in a Miss Alice Thomas, sister of Dr. Lewis Thomas, and for some not too obscure reason he now felt

that although he was in general practice he should be receiving some remuneration from the Radiology Department. He duly made application to the Commission, only to be told that since all the other members of the staff were giving their services gratuitously he should do likewise. This was a real disappointment to the young professor, and he immediately proceeded to make other plans.

"Go West, young man" was the slogan of the day, and this young man did just that. Soon wedding announcements were out, and Miss Alice Thomas was married to Dr. Herbert Weaver in June 1906 in the town of Dartmouth; and afterwards the happy couple left for Saskatoon, taking his own precious X-ray machine with them. At this time the population of Saskatoon was only about 3,000, while today it is over fifty thousand.

Dr. Weaver having lost his left index finger from the faulty X-ray tubes which were in use in those days decided not to practice this phase of his profession, but continued general practice. About this time two young doctors from below the Border came to Saskatoon. They were interested in Radiology, and Dr. Weaver not only helped them to get established but installed the machine for them, and assisted in the interpretation of the plates.

When Dr. Weaver left the city the powers that be persuaded Dr. M. A. MacAuley to undertake his work at the Victoria General. This he did for a short time, but on his resignation in about three months Dr. Charles Puttner became the operator, and carried it on until his death in 1922. It is said that Dr. Puttner was able to produce wonderful plates, but—being a Pharmacist and not a medical doctor (his degree was an honorary one) his readings were at times most weird.

After Dr. Putner's death Dr. W. H. Eager accepted the position of Radiologist, and was followed by Dr. S. R. Johnston.

It was in 1901 that the Laboratory was moved from the little room back of the elevator shaft to the Halifax Medical College on College Street, and in that room their first X-ray machine was established. I wonder where that machine is to-day? The little machine that Dr. Weaver took to Saskatoon is today one of the City's most prized possessions and may be seen in their Museum. Such is the history of one of the first X-ray machines to be used in Halifax.

It might be fitting here to acknowledge the great service rendered to Dr. Puttner and the Radiology Department by two young men from the Victor X-ray Company, who were sent to Halifax following the Explosion of 1917, and spent several months here nobly assisting during that strenuous period.

There were many doctors in the family connections of the Weavers. One outstanding doctor was Dr. Colle, for whom the Fracture was named "Colle's Fracture". He was a cousin of Dr. Herbert Weaver.

A specialist is one who has his patients trained to become ill in his office hours. A general practioner is likely to be called off the golf course at any time.

Obituary

The death occurred at his gome in South Ohio, Yarmouth County, on July 22nd, of Doctor Zadok Hawkins. Doctor Hawkins was born in Pennfield, N. B., August 29, 1879, the son of the late Mr. and Mrs. Zadok Hawkins. He received his early education in Sussex, N. B., and graduated from McGill University Medical School in 1907. He went to Yarmouth County directly after completing his medical course and had practised continuously in that County. He had been in failing health for the last few years, but was active in his profession until shortly before his death, being ill only a very short time. He is survived by his wife, the former Mabel A. Justison of Sussex, and only son, Prescott.

Doctor John Rankine died at his home in Halifax on September 28th following an illness of six weeks. Doctor Rankine was born in Port Glasgow, Scotland in 1882, the youngest son of the late James and Helen Bowden Rankine.

Doctor Rankine came to Halifax in 1888 and was educated in the city schools and at the old Halifax Academy, and graduated from Dalhousie in 1904. He practised in Halifax following his graduation except for a period overseas with the Dalhousie contingent, and later a Field Dressing Station, in the First World War. For a number of years before and during the Second World War he was on the staff of Camp Hill Military Hospital.

As a young man Doctor Rankine was an outstanding athlete, particularly gifted in football and track. He was captain, later coach of the Dalhousie University football team.

Surviving are one brother, Andrew F., Halifax, three nieces, Jean (Mrs. H. R. Wyman) and Ann (Mrs. H. W. MacPhee), both of Halifax, and Dorothy (Mrs. B. Phoenix) of Toronto, and a nephew, Doctor James A. Rankine, Santa Barbara, California.

Doctor Norman Darrell Harvey, a native of Halifax, died in the New Rochelle Hospital on October 14th, at the age of 86. Doctor Harvey was born in 1865, and graduated in Arts from Dalhousie University in 1885, and in 1888 from the College of Physicians and Surgeons of Columbia University.

For a time before establishing himself in Providence he was a resident surgeon at the New York Hospital. He was a past president of the Rhode Island Medical Society. He practised in Providence, R.N., as an Eye, Ear, Nose and Throat specialist for forty-eight years, and retired only last year.

Doctor Harvey served in the war with Spain as an assistant surgeon in the First Rhode Island Regiment, and was a former national surgeon-general of the Spanish War Veterans.

Doctor Harvey is survived by his wife, the former Mary A. Ogden, a daughter, three sons, sister, a brother, and six grandchildren.

Personal Interest Notes

Doctor G. R. Forbes of Kentville, former District Medical Officer for Military District No. 6 during World War II, was honoured at a recent meeting at New York when he was made a Fellow of the American College of Cardiology.

"Experimental Psychology" was the subject of a talk given to Kiwanians at Bridgewater in August by Doctor Donald Hebb, chairman of the Department of Psychology, McGill University. A native of Chester, Doctor Hebb is well known in his field and has written a book and several papers on experimental psychology.

Eight graduates of McGill University's medical class of 1900 held a reunion at Montreal early in August under the chairmanship of Doctor R. H. Stevenson of Danville, Quebec. Among those who attended were Doctor Arthur E. Doull of Halifax, Doctor James E. Cox of Windsor, Ontario: Doctor J. D. Coffin of Plaster Rock, N. B., and Doctor Edwin Brown of Aultsville, Ontario.

The marriage took place at Halifax on August 4th of Helen Freda, younger daughter of Mr. and Mrs. Wm. E. G. Shields, and Doctor J. W. MacIntosh, Jr., elder son of Doctor and Mrs. J. W. MacIntosh, all of Halifax. Doctor MacIntosh graduated from Dalhousie in May of this year, and is at present doing post-graduate work at Camp Hill Hospital, Halifax.

Doctor N. B. Coward of Halifax attended the scientific opening and refresher course at the Hospital for Sick Children in Toronto in October, also the meetings of the American Society of Paediatrics.

No. 16 Local of United Mine Workers of New Waterford is withdrawing its representatives from the Co-operative Medical Health Services Board. The Co-operative Medical Board was set up several years ago and the plan was approved by New Waterford miners by a large majority. It has not gone beyond the planning stage.

Doctor H. E. Wilson left Ottawa early in October for Vancouver where he will do post-graduate work for two years, having resigned from his position as Chief of Civil Aviation Medicine. Doctor Wilson graduated from Dalhousie in 1937, and at one time practised in Ship Harbour.

Three members of the teaching staff at Dalhousie Medical School addressed the annual meeting of the Royal College of Physicians and Surgeons, in the Chateau Frontenac, Quebec, in October. They were Doctor M. M. Hoffman, Research Professor of Medicine, who spoke on "Studies on a Patient with an Adrenal Cortical Tumor"; Doctor L. C. Steeves, Assistant Professor of Medicine, who spoke on "Acute Pulmonary Oedema"; and Doctor W. R. C. Tupper, Demonstrator in Obstetrics and Gynaecology, who spoke on "A New Method of Treatment of Pelvic Abscess."

Two important appointments were made by the Nova Scotia Department of Health and Welfare on August 17th with Health Minister Hon. Harold Connolly announcing the appointment of Doctor J. S. Robertson as the new Deputy Minister of Health. Doctor G. G. G. Simms will replace Doctor Robertson as the Assistant Deputy Minister.

Doctor Robertson succeeds Doctor P. S. Campbell who retired on September first.

Both of the new appointees are graduates of Dalhousie Medical School and are native Nova Scotians.

Doctor Robertson is a native of Churchville, Pictou County, and received his early education in New Glasgow. He also attended Mount Allison University and later Dalhousie Medical School where he received his M.D., C.M. in 1934. He later received a Diploma in Public Health from the University of Toronto.

Doctor Simms is a native of Halifax. He attended St. Mary's College High School and later Dalhousie Medical School where he received his M.D., C.M. in 1938. He holds a certificate in Public Health under the Royal College of Physicians and Surgeons.

Doctor John Potter is the new Medical Director of Red Cross Blood Transfusion Services in the Maritimes. He succeeds Doctor S. E. Kernohan. Doctor Potter is a graduate in Arts from Mount Allison and received his medical degree from McGill University.

At the October meeting of the Royal College of Physicians and Surgeons of Canada held in the City of Quebec, October 27-29, Doctor H. W. Schwartz of Halifax was admitted at their Convocation to the Royal College of Surgeons.

Doctor F. F. P. Malcolm of Dartmouth and Doctor R. B. Nichols of Halifax, were among the fifty-three Canadians named in promotions and admission to the Venerable Order of St. John of Jerusalem, announced in August by the Governor General, Viscount Alexander. The announcement, said the honours, sanctioned by the King, went to those who have been conspicuous in services to the Order in Canada.

The marriage took place in Dartmouth early in October of Mary Kathleen, only daughter of Doctor Arthur Hines and the late Mrs. Hines of Cheverie, Hants County, and Doctor Charles Donald Vair, son of Mr. and Mrs. J. D. Vair of Halifax. Doctor Vair graduated from the Dalhousie Medical School in May of this year, and is now medical doctor with the Dartmouth Medical Centre.

Doctor P. S. Campbell, Deputy Minister of Health and Welfare for Nova Scotia, and Dean of Canadian Public Health Officers, retired September first after a distinguished career of thirty-five years as physician and provincial official.

Members of the Department from all over Nova Scotia were present at the general office on August 28th when Premier Angus L. Macdonald, on behalf of the staff, presented Doctor Campbell with handsome matched luggage, a pen and substantial purse.

Doctor W. H. Frost came especially from Ottawa to present an engraved sterling silver tray on behalf of the Dominion Council of Health of which Doctor Campbell has been a member for the past eighteen years. Doctor Frost was formerly medical officer for the Port of Halifax.

Premier Macdonald referred informally to early days in Port Hood and to Doctor Campbell and himself leaving there together forty years ago. Both the Premier and Doctor Frost paid high tribute to the retiring deputys' great work in the public service.

Doctor Campbell, who spoke feelingly of his regret at severing official connections now of some twenty-eight years standing, was born at Port Hood, August 25, 1881; was educated at Port Hood Academy and became a B.A. of St. Francis Xavier University in 1901. After a year of science at St. Francis Xavier, he entered McGill and received his M.D., C.M. in 1916.

Doctor Campbell was resident physician at the Montreal General Hospital 1916-18; engaged in private practice at Port Hood 1918-23; became Divisional Health Officer April 1, 1923, Chief Health Officer in 1933. His title was changed to Deputy Minister May 25, 1944.

The marriage took place at Pictou on May 30th of Barbara Jean, second daughter of Mr. and Mrs. Leonard Fullerton, West River Road, Pictou and Doctor John Oakley Godden of Halifax, son of Bertram Godden and the late Mrs. Godden of New Glasgow. Doctor Godden graduated from Dalhousie Medical School in May of this year, and is spending a year at Sudbury, Ontario, following which he will go to the Mayo Clinic at Rochester, N. Y.

The marriage took place at West Branch early in June of Isabel Alice, R.N., daughter of Mr. and Mrs. Irving MacDonald, and Doctor James Charles Vibert, son of Mr. and Mrs. Foster Vibert of Stewiacke. Doctor Vibert graduated from Dalhousie Medical School in May of this year, and is at present practising in Truro.

Doctor R. L. deC. H. Saunders, Professor of Anatomy at Dalhousie University spent a six weeks tour in Great Britain during the summer. While a guest of the Ciba Research Foundation in London he spent most of his time visiting the London hospitals and studying modern research methods and projects. During his visit he had the pleasure of lunching with Professor Goldby and Sir Alexander Fleming at St. Mary's Hospital. Sir Alexander who is an Ayrshire Scot expressed much interest in Nova Scotia.

The Bulletin extends congratulations to Doctor and Mrs. Saul Green of Halifax on the birth of a daughter, Susan Frances, on August 12th; to Doctor and Mrs. D. W. Smith of St. Andrews, N. B., on the birth of a son, Richard Charles, on August 21st; to Doctor and Mrs. S. C. Fuller of Bedford (Barbara Phinney) on the birth of a daughter, Lisa, on August 31st; to Doctor and Mrs. H. D. Lavers of Truro on the birth of a son, David Harlow, on September 25th, and to Doctor and Mrs. R. T. Annand of Bridgetown, on the birth of a daughter, Jean Elizabeth, on September 26th.

Doctor A. E. C. MacRae has opened an office for the Practice of Medicine as Family Physician at 32 Queen Street, Dartmouth.

Doctor C. A. Gordon of Halifax is on a research scholarship of Columbia University and is at present on the staff of the Presbyterian Hospital, New York City.

Doctor C. B. Stewart of Halifax has been appointed temporarily to the teaching staff of the School of Hygiene and Public Health of Johns Hopkins University. He is on leave of absence from Dalhousie University and will be returning in about a year's time.

Doctor F. F. P. Malcolm and Doctor E. P. Hopgood, both of Dartmouth, Doctor H. A. Creighton of Lunenburg and Doctor J. P. McGrath of Kentville, have been elected members of a Civil Defence Committee to work with the Provincial Civil Defence authorities, as requested by St. John Ambulance national headquarters in Ottawa.

Doctor D. R. Davies of Oxford has been appointed medical health officer for Oxford for the term of one year, dating from July first, to fill the position vacated by Doctor J. N. D. O'Rafferty, who is now on the staff of Camp Hill Hospital, Halifax.

New Scheme Proposed for Training Doctors. A virtual revolution in the training of doctors is suggested by the World Health Organization of the United Nations.

A report published by the World Health Organization sharply criticizes present medical and nursing education methods throughout the world and urged that doctors learn to pay as much heed to the welfare of the community as to that of the individual.

The report was prepared by a committee of experts meeting at Geneva in July under World Health Organization auspices to examine present medical training methods in the light of modern needs.

The report declared "There is at present much emphasis on physics and chemistry . . . . . too little attention is given to such subjects as psychology, anthropology and sociology."

The report urged that doctors, nurses, social workers, public health experts and sanitary engineers be trained in different sections of the same school, and be taught to work as a team.

At present, the committee said, the medical profession, hospitals, medical schools and teachers are working in isolation.

"Confined within the narrow limits of the individual practice of curative medicine, too many practitioners are heedless of the public experts and remain dead to the voice of public opinion and of the authorities who are calling upon them to work more actively for the preservation of public health."

The experts said hospitals should "cultivate both preventive and social medicine" and medical Faculties should co-operate closely with sanitary services, social security organizations and the Medical profession generally. They should "teach young people how to study, observe, think, pass judgment, how to approach marriage and the education of children and how to carry out their professional and civic duties."

Society Meetings

CUMERLAND MEDICAL SOCIETY

At the annual meeting of the Cumberland Medical Society held at Amherst in September the following officers were elected:

President—Dr. R. E. Price, Amherst.
Vice-President—Dr. C. R. Adams, Springhill.
Secretary-Treasurer—Dr. J. A. Langille.
Representatives to the Executive of The Medical Society of Nova Scotia—Dr. David Kernohan of Parrsboro and Dr. J. A. Langille.

The guest speaker at the meeting was Doctor K. M. Grant of Halifax.

WESTERN COUNTIES MEDICAL SOCIETY

The annual meeting of the Western Counties Medical Society was held at Braemar Lodge, Yarmouth on August 23rd, when the following officers were elected:

President—Dr. W. C. O'Brien, Yarmouth.
Vice-Presidents—Dr. R. E. Brannen of Barrington Passage and Dr. P. H. LeBlanc of Little Brook.
Secretary-Treasurer—Dr. D. F. Macdonald, Yarmouth.
Executive,—Dr. G. V. Burton of Yarmouth and Dr. P. E. Belliveau of Meteghan.

Dr. D. R. S. Howell of Halifax gave an interesting paper on bacterial infections of the skin, which was illustrated by slides.

Dr. H. B. Ross of Halifax spoke briefly on the Dalhousie Post-Graduate Programme.

UROLOGY AWARD

The American Urological Association offers an annual award of $1,000.00 (first prize of $500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

The first prize essay will appear on the programme of the forthcoming meeting of the American Urological Association, to be held at the Chalfonte-Haddon Hall, Atlantic City, New Jersey, June 23-26, 1952.

For full particulars write to the Secretary, Dr. Charles H. deT. Shivers, Boardwalk National Arcade Building, Atlantic City, New Jersey. Essays must be in his hands before February 15, 1952.