

OCTOBER 1961

The NOVA SCOTIA MEDICAL BULLETIN

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EDITORIAL

THE BUSINESS OF MEDICINE

The so-called science of medicine has occupied us for our professional careers, and the so-called art of medicine is considered of great importance by nearly all clinicians. But in a society based on capitalism we are required to do business and this may involve a word supposedly of no interest to any but the most commercially minded, namely money.

From the doctor's point of view there are four groups with whom he has business dealings: his creditors, his hospital(s), his confrères and his patients.

To his creditors most doctors are excellent risks, often paying more than the going rate and paying it promptly. To say that most doctors have little knowledge of borrowed money and its proper functions would be an understatement and their unbusiness-like dealings with our greatest creditor—the Receiver General—is often pitiful.

We seldom actually have monetary dealings with hospitals but the effect of our unbusiness-like ways have a shocking financial effect. The patient who is admitted to hospital for investigation and then waits 2 days for the detailed methods to be worked out, the many patients held over week-ends and holidays, the elective surgical case admitted with no booking in the operating room, the routine admission late in the day—these must affect hospital economics.

Theoretically we have no business dealings with confrères since fee-splitting is unethical, but I am thinking more of the apparent present confusion regarding courtesy treatment of other doctors and their families. If it is considered an honour, well and good, but many feel it is necessary to present gifts, often worked out to represent a proportion of the normal fee. Some would have us avoid this by having doctors subscribe to a group prepaid health plan—it would be good business!

Business dealings between doctors and patients are nearly always reasonably satisfactory on a direct basis—it is the major change of the business of medicine of our age that at least half of these dealings involve a third party. The insurance carrier or prepaid health plan does give the patient and doctor some financial security, but unfortunately poor definitions as to how much security leads to great confusion. Most private insurance schemes define in a business-like way exactly what amount and exactly what procedure they will pay. The prepaid plans sponsored by the medical societies giving supposedly

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complete coverage are faced with imponderables which must be answered: definition of a specialist; what is overservicing and overutilization; are certain surgical procedures cosmetic or necessary (and what is the difference); division of fees between several doctors treating one patient; reduction of fees for extended care in chronic cases; must a given procedure be paid the same fee no matter who carries it out? Could this not best be solved by using as a model, the Australian system of a direct doctor—patient settlement of debts with reimbursement to the patient by the third party?

This, gentlemen, whether you like it or not, is your business.

J.H.Q.

WELCOME

We are pleased to welcome to the Editorial Board two members of outstanding experience in their own fields. They are Professor of Pathology W. A. Taylor, and Associate Professor of Pediatrics, W. A. Cochrane.

CIRCULAR LETTER TO PHYSICIANS RE CONTROLLED DRUGS REGULATIONS

Considerable misuse and abuse of certain types of drugs have developed in a number of areas of Canada. This has necessitated new legislation being enacted as a means of providing control measures. As a consequence, at the last session of Parliament, amendments to the Food and Drugs Act were passed.

This legislation, insofar as it effects the licencing, keeping of records, auditing of records and distribution of controlled drugs, will be administered and enforced by Mr. R. C. Hammond, Chief of the Narcotic Control Division, which is now a separate division in the Food and Drug Directorate. Questions relating to the administration or enforcement of these aspects of the Controlled Drugs Regulations should be addressed to Mr. Hammond.

The groups of drugs covered by the amendments to the Act will be designated as Controlled Drugs and are set forth in Schedule G. The Schedule includes:

- (1) Amphetamine and its salts.
- (2) Barbituric acid and its salts and derivatives.
- (3) Methamphetamine and its salts.

Additionally, all pharmaceutical products containing any of these drugs when in combination with other medicinal ingredients, also are subject to control.

There are several points embodied in the new legislation which are of importance to physicians. Practically all of these are set forth in the Regulations rather than in the amendments to the Act. A copy of the Regulations is, therefore, being included with this letter.

The amendments to the Act deal chiefly with the illicit traffic in Controlled Drugs. As a consequence, it is not the intention of the Department to supply all physicians in Canada with a copy of the amendments to the Act. Upon hearing from you indicating your desire to obtain a copy, one will be furnished when our supplies are received from the printers.

It is important, nevertheless, to stress to all professional people who are entrusted with Controlled Drugs that under the amendments to the Act, very stringent penalties (up to ten years imprisonment) have been provided for anyone who is convicted of trafficking in Controlled Drugs or is in possession of these drugs for the purpose of trafficking.

Dealing with the legal distribution of Controlled Drugs, there are several points which are of direct interest to physicians.

All purchases of Controlled Drugs made by a physician from manufacturers and distributors licensed to deal in these require a signed order before the supplier is permitted to release material. This also applies to medication requested for clinical evaluation.

Under the new Regulations, a retail pharmacist may not supply Controlled Drugs unless he receives an order or prescription from a practitioner. A practitioner is defined in the Regulations as well as a prescription and order. When issuing an order or prescription, covering medication which will be supplied by a retail pharmacist, a practitioner may do so either verbally or in writing. This applies to all kinds of medication coming within the classification of Controlled Drugs.

In the event the practitioner wishes the patient to receive continued medication for a period of time, he should issue a written prescription stipulating in writing at the time of issue the number of times and dates the prescription is to be refilled. Prescriptions or orders given verbally by a practitioner may not be refilled by a pharmacist.

The Regulations limit the prescribing or issuing of a Controlled Drug by a practitioner to cases under the professional treatment of the practitioner and where the medication is required for the condition for which the patient is receiving treatment.

Provision also is made in the Regulations requiring a practitioner to supply the Department with any information requested, relating to the purchasing and prescribing of Controlled Drugs. Additionally, depending upon existing conditions, a practitioner may be requested by the Department to maintain records of the quantities of medication of this kind which he purchases and prescribes. It should be emphasized, nevertheless, that under normal conditions of practice, this obligation will not be placed upon a practitioner.

Finally, the Regulations provide that the Department may furnish the provincial licencing body with information obtained concerning the quantities of Controlled Drugs purchased and prescribed by a practitioner. Additionally, after doing so and if the need exists, the right of the practitioner to purchase supplies may be cancelled.

The new legislation has been adopted solely to provide the necessary authority to attack and eliminate the abuse which is known to exist in Controlled Drugs. There will be no attempts to curtail the use of these drugs when they are required in medical treatment.

With this in mind, we solicit the co-operation and support of all physicians in following closely all those requirements which are of interest and concern to them. Moreover, may we stress how important it is for you, as a physician, to co-operate with pharmacists and provide, in every case, the necessary authority for the release of Controlled Drugs when you wish to prescribe them for your patients.

Yours very truly,

Dr. C. A. Morrell,
Director,
Food and Drug Directorate.



THE WONDERFUL MEDICAL CARE TREE
(As Described in the CANADIAN LABOR CONGRESS SEED CATALOGUE)

LABOUR LOOKS AT MEDICINE

Speech delivered by John H. Delaney to The Nova Scotia Medical Society.
June 13, 1961

It is well known to all here present, that for a good many years organized labour has been advocating the adoption of a national program of health care to be publicly financed and administered. The definite move by the Government of Saskatchewan to establish such a plan on a provincial basis has stimulated new interest in this question. It is to be expected, moreover, that the investigation by the Royal Commission on Health Services will bring forth expressions of opinion on publicly supported health plans by various groups throughout the country. Organized labour, therefore, welcomes every opportunity to discuss its viewpoint on the subject of a national health plan with the members of the medical profession. This is why it is a special privilege to be invited to speak at this meeting for the purpose of placing before you the case on which organized labour bases its attempts to bring about a national program of health care for the people of Canada.

Organized labour has always been interested in medical care for its members. This interest in obtaining a good distribution of medical services is consistent with the fundamental principles upon which labour unions are built. Historically, this is true. If we go back in history to the craft guilds of the Middle Ages, we find these societies of craftsmen interested in maintaining the good health of their members. The guilds were organized primarily for the purpose of regulating the conditions of work within the crafts, but they were also protective associations in which the members were banded together in order to help one another in time of sickness.

The first goal of the unions was to obtain the recognition of the worker's right to bargain collectively. The painfully slow process of improving wages and conditions of labour, throughout the years of oppression and opposition, took up all the energy of the developing labour organizations. However, it was not long before labour's influence began to extend beyond mere bargaining for wages. Unionism had arisen from the desperate need of the workers to improve their living standards. This was found to mean a good deal more than simply getting an increase in wages.

Organized labour found that it had to fight for all kinds of protective legislation, including laws relating to hours of work, regulating the employment of women, abolishing child labour, providing safety measures and establishing workmen's compensation. It is important to note here how closely these laws are related to the health of the workers.

Finally, labour pioneered in bringing about the social legislation we have today, family allowances, unemployment insurance, old age pensions, mothers' allowance, etc., and more recently, hospital insurance.

It is in this context that we must evaluate organized labour's interest in medical care. Most surely medical care is an essential part of the worker's standard of living. The unions early in their history found that medical care was no ordinary item in this standard of living. If a worker obtained a wage increase, it was possible for him to plan what was to be done with the additional income. He might decide that the extra wage should go for new shingles on the house but a sudden illness within the family might well use up the money put aside for this purpose. If the family had to incur big medical and hospital bills, either the bills were paid and the family went without some things it needed, or the bills were not paid and the doctor bore the financial loss.

The idea of insuring against the costs of medical care was an answer to the threat posed by illness to the economic security of the family. The unions became very much interested in the plans for sickness insurance which began to develop as a practical way of fitting the costs of medical care into the workman's budget.

It is not surprising, therefore, that health insurance began to be developed through workers' jobs, as part of collective agreements with employers. This development has been rapid during the past decade. Today ninety-four million people, union members and their dependents, are covered by some form of insurance in employee benefit plans, in the United States. Labour in the United States has gone further still in this development by establishing 60 union health centres which provide complete medical and surgical care for their members.

In Canada the trend in the last ten years has also been toward including health insurance in collective bargaining agreements. For example, the railroad brotherhoods now all have health plans in their contracts. These health insurance plans have been put in the category of "fringe benefits". Today organized labour takes the stand that health care is too important to be any longer classified as a fringe benefit. And, therefore, while granting that the prepaid plans in use today are good as far as they go, labour says that they are inadequate to give to all Canadians the high quality of health care that the tremendous progress which has been made in medical science in recent years makes possible.

There are some very good reasons for labour's insistence that the health insurance plans now available in Canada are inadequate. Many of them do not cover chronic illness, nor illness arising from conditions that existed before the insured person joined the plan, nor treatment by specialists. They often exclude certain medical and surgical procedures. They sometimes require that a waiting period elapse before benefits can be paid. They do not usually pay bills in full. The plans designed to cover "major" medical expenses fall far short of providing complete protection for what is generally conceded to a financial catastrophe.

Furthermore,—and this is a very serious limitation according to organized labour,—these plans are limited to supplying insurance against the cost of diagnosing and treating illness. This is only part of what labour wants in a complete program of health care, which should include many other services from prevention to rehabilitation.

Finally, the plans now provided by commercial insurance companies (and I want to emphasize this does not apply to medically sponsored plans) are not concerned with the quality of health care. It is their business to sell insurance at a profit, and beyond the chances of making as good a profit as possible there is no motive for their existence.

To all these inadequacies in the present health plans must be added the fact that there are many people who cannot be serviced by them. There are first of all those who are too old to join. There are many others who are in occupations that have no group contracts and who cannot afford to pay the premiums themselves. There are the large numbers of unemployed people, and those whose employment is too irregular to enable them to obtain the benefits of health insurance through a union. There are also those who cannot pay the premiums because they are already ill or disabled. All of these people should be brought under a system of adequate medical care, and only a publicly supported plan can do it.

If organized labour is not satisfied with present day methods of distributing medical care, there remains the question: What does it want?

The first requisite of the national health scheme advocated by labour is that it should be universal in coverage. It should include everybody. It is often argued that nobody need go without medical care because of inability to pay, since doctors will never refuse to treat a penniless patient. It is possible to produce stacks of unpaid bills in support of this statement. The Canadian unionists who are agitating for a national health plan would be the last to deny the generosity of the countless individual doctors who have always contributed their time and skill to the treatment of patients who cannot pay for these services. But, having granted this, labour states that people are entitled to receive medical care without the loss of self respect that accompanies the acceptance of charity. Furthermore, labour maintains that only minimum care can usually be obtained through charity, no matter how generous and well intentioned the doctor may be.

For one thing, charity precludes prevention and early treatment of illness. The penniless patient will not seek out a doctor until a serious condition forces him to do so, and often this may be too late. Moreover, care given in this way must of necessity be minimum. The doctor can give freely of his time and skill but the other things that go to make up a complete program of health care are not his to give.

It is significant that in the United States, where there has been a resistance to the idea of publicly supported medical care to a degree unequalled elsewhere in the world, the plight of the aged is so acute that a bill to provide medical care is now before Congress. Some of these people who have thought that a government sponsored medical program was next to impossible in the U.S. now concede that sheer necessity may make it necessary for the government to step in and provide medical care for the aged.

Secondly, labour says that the health plan should be comprehensive in scope. It should include preventive, diagnostic, curative and rehabilitation services by doctors, surgeons, specialists, dentists, hospitals, clinics, pharmacists and medical and psychiatric social workers, and should provide research, education, rehabilitation and preventive services. To quote from a brief presented to the Advisory Planning Committee on Medical Care by the Saskatchewan Federation of Labour, and endorsed by the C.L.C.: "We propose for every citizen all the health care he needs in whatever forms he needs it, whenever he needs it, without any economic barrier between him and health care. A comprehensive program would ensure complete treatment through the effective co-ordination of all the resources available to the science of medicine."

It is hardly necessary to tell you that the medical profession, in its own programs for prepaid medical care, has—more than any other group—paid attention to the need for a wide range of services. It is no accident that trade unions, when negotiating for health insurance, prefer to have a medically sponsored plan in preference to a commercial insurance plan. It is simply because the medically sponsored plans are better. But not even these plans can make health insurance comprehensive enough.

Another important requisite is that the plan should provide the highest possible quality of health care. Labour holds that only a comprehensive plan can do this. Good quality care depends first of all on well trained competent physicians, but it requires other factors also. In his book "Medical Care for Tomorrow", Dr. Michael Davis, a foremost authority and one of the founders of Blue Cross, put it this way: "Central to a good quality of diagnosis

treatment or prevention of illness in the individual patient, is the education, skill and personality of the physician. It is difficult, often impossible, to make good any important failure on his part. Yet his results depend also on his tools, his associates and helpers, his community and his patients. With the central figure of the physician always in mind, five general conditions of quality may be stated: Personnel, Facilities, Organization, Finance and Education."

Here are some of the factors which labour believes should be part of the national health plan: There should be enough doctors and other associated personnel sufficiently well paid to service the rural areas and those part of Canada now inadequately cared for. This would require providing new incentives and assistance to young people to study medicine and dentistry and to train as technicians, social workers, etc. Such a program would include scholarships, counselling, and research.

There should be a broad development of facilities to carry on a full program of health care. Labour is emphatic on the point that it is futile to wait until sufficient facilities are available before embarking on the plan. The only way to obtain the adequate facilities for prevention, treatment, education and research is to begin the plan and to proceed by stages to acquire the necessary standards. The fact that there is such a shortage of facilities for complete health care is, in itself, proof that the present system cannot provide them. Otherwise we should have obtained these facilities long ago.

Organized labour is in favour of group practice. The high degree of specialization in medicine, the need for the co-ordination of skills and services, and the high cost of medical equipment are some of the reasons for labour's stand on this question, which includes the subsidizing of the group clinics when necessary. Labour believes, too, that the role of the general practitioner must be given special importance in group practice.

The development of union medical centres is an indication of the importance which labour attaches to this form of health care. Last month, the Vice-President of the U.A.W., Leonard Woodcock, who is also chairman of the board of governors of Wayne State University told the Institute of the American Association of Medical Colleges, that labour unions would actively support a medical school if the school would accept the challenge of preparing doctors for group practice prepaid medical care.

There is no time in a talk of this kind to give in any detail the views of labour on methods of administration and financing. There are, however, two things that should probably be mentioned. One is in answer to the people who object to a national health plan on the grounds that it would be too costly. A survey made by the I.L.O. on "The Cost Of Medical Care" in fourteen countries found that all the developed countries tend to spend about the same percentage of their national income on medical care, no matter how it is financed. Canada spends 4.41 per cent compared with 4.05 per cent for England and Wales. This should answer those who criticize England's national health plan on the grounds that it is too costly.

It is important to mention here, however briefly, the viewpoint of labour on the question of the remuneration that should be paid to the doctors under a national health plan. Regardless of the method of payment, organized labour believes that the doctors should be well paid. Again quoting from the submission of the Saskatchewan Federation of Labour to the Province's Advisory Planning Committee on Medical Care and endorsed by the C.L.C.: "Their income should be sufficient for them to enjoy a high standard of living in the accepted sense of that term. Remuneration should reflect the status of the

doctor as a member of a highly regarded profession and his indispensable role in the community. It should be commensurate with his long period of training, his experience, the time and effort spent on his work and the occupational hazards of his practice."

Furthermore, labour believes that the doctors should have the right to have their remuneration established by a bi-lateral agreement, by negotiations between the government and their professional organization. In other words, labour would like to see the doctors enjoying the full rights of collective bargaining if they choose to do so. We would gladly welcome you to the fold. And if we might be inclined, from our long experience in collective bargaining to suggest that we might be qualified to dispense some advice, we could be reminded that the giving of advice should be the other way around. After all, organized labour has long admired your closed shop.

CONCLUSION

Organized labour is confident that a national health plan will be adopted eventually in Canada. We shall be rather late in taking this step since already fifty-five countries throughout the world have established publicly supported health care plans. Although we may regret our tardiness, it may well be that there are some advantages of this late beginning. One obvious advantage is that we can learn from the errors that may have been made by the countries that have pioneered in this field. It may have been inevitable that some errors be made, but we need not repeat them.

One thing is certain. We could in Canada set up a national health plan that would be a model for the rest of the world, but to do this it is necessary to have the full co-operation of the medical profession. This is why there should be full opportunity for discussion and negotiation. Barriers can be broken down, only when groups are willing to talk things over and to try to understand their respective points of view.

Organized labour advocated a national health plan because it believes that it is only in this way that high quality medical care can be provided to all Canadians no matter who they are or where they live. Doctors, dedicated as they are to the aim of preventing and curing illness, have much in common with organized labour in its work toward the goal of the best medical care for all.

RECENT ADVANCES IN HUMAN CYTOGENETICS

HUBERT C. SOLTAN*, Ph.D.

A very few years ago the word chromosome meant very little to most physicians. Perhaps there was some faint recollection emanating from pre-clinical or premedical training; the word had somehow entered the doctor's vocabulary, and that was all. Chromosomes then meant simply rod-like structures apparent only in dividing cells which were believed to "carry" the hereditary factors. Their interest was purely academic, and as a result, the concept was usually conveniently shelved into some obscure recess of the practical physician's mind.

How different the situation is today! Such novel and exotic terms as acrocentric, heteroploidy, karyotype, non-disjunction, and triplo-X are standard equipment of anyone interested in congenital anomalies and the significance of the discovery of the latest trisomic may quite readily be a frequent conversation piece in almost any medical circle.

It appears that a minor revolution has occurred and in fact is still occurring—this revolution has launched Human Cytogenetics as an important, exciting, and perfectly respectable discipline in medical research, with important applications for the practising physician. Because this revolution is still very much in progress, it would be imprudent to attempt to give a full review of its achievements. Also, because interest in human cytogenetics is so recent, the workers in the field now so numerous and the discoveries so rapid, there has been no time or opportunity for formulation of general theories or explanations of the numerous phenomena observed. Indeed, some of the reports appearing in the literature at this stage are conflicting and sometimes contradictory. Persons seriously interested in the entire field must follow the original reports most conscientiously. A large number of these has appeared in the 1959, 1960 and current 1961 volumes of *LANCET*. Other reports can be found in "Nature", in "Science", in the *Canadian Medical Association Journal*, and scattered throughout the medical (particularly pediatric) and human genetics literature.

What are some of the reasons for this remarkable revolution? How has it come about? Where is it likely to lead us?

There can be no more fitting place to start than with the remarkable experiments of Mendel¹, which were in progress almost precisely 100 years ago. Mendel demonstrated that in peas hereditary "factors" are transmitted from parent to offspring as discrete units. These factors are paired, but at gametogenesis the pairs are separated so that only one of each pair is present in the gamete. Reconstitution of the pairs occurs at fertilization. Starting in 1900, Mendel's Laws of Inheritance began to be confirmed and shown to apply to hundreds of sexually reproducing organisms. As a result, we now know that Mendel's Laws hold for organisms all the way up the evolutionary ladder from Protozoa to Man; and in recent years they have been shown to apply even to viruses and bacteriophage.

Cytologists of the latter part of the Nineteenth Century observed the behaviour of chromosomes in cells destined to produce the gametes and in the gametes themselves, in a wide variety of plants and animals. They concluded that during the meiotic division the chromosome number is reduced by one

*Saint Mary's University, Halifax, N. S.

half and that the process of fertilization or fusion of the two gametes, each with half the number of chromosomes, reconstitutes the normal complement.

It was Sutton² in 1903, three years after Mendel's Laws had been rediscovered, who noted that these cytological observations fitted in with Mendel's Theory of Heredity. He suggested that Mendel's hereditary factors (later called genes) were somehow related to chromosomes, and gave a cytological interpretation of the two basic Mendelian laws. Later, in 1911, Morgan³ proposed that genes were unit particles lying in linear fashion on the chromosomes. Chromosomes now assumed considerable importance because they were believed to carry genes. Today, 50 years later, the relative chromosomal locations of large numbers of genes have been worked out by elaborate breeding experiments for several organisms; *Drosophila melanogaster* (a species of fruit fly), *Zea mais* (corn) and *Mus musculus* (the house mouse) are prominent among them. In Man, we know of the existence of hundreds perhaps thousands of genes but the techniques for localizing these genes to individual chromosomes (in the absence of controlled breeding experiments) have not been available. Much of the rapidly growing knowledge of human chromosomes suggests that this localization of genes to individual chromosomes may soon be begun. One of the basic facts to be established for the species under study is the precise number of chromosomes. This was reliably determined for man only in 1956, although investigations into this matter had been going on for some seventy-five years.

For human cells, a brief chronological preface to the establishment of the correct diploid number (the number of chromosomes present in normal somatic cells) would run somewhat as follows: 1881 Flemming⁴ observed mitosis in corneal cells and believed he could detect between 22 and 28 bodies. 1891 Hansemann⁵ reported counts of 18, 24, and more than 40 from three cells from what he described simply as "normal tissue". 1912 de Winiwarter⁶ (with much improved techniques over those of his 19th century colleagues) was able to report 47 chromosomes in primary spermatocytes, and 48 from oocytes. This led him to believe that an XX-XO mechanism of sex determination existed in man. In the early 1920's Painter⁷ observed that in spermatogonia "the counts range from 45 to 48 apparent chromosomes, although in the clearest equatorial plates so far studied only 46 chromosomes have been found." He is also credited with discovering the Y chromosome in mammals and specifically in Man. This led him to propose an XX-XY mechanism of sex determination; and on the basis of further observations he concluded that 48 was the correct number for both sexes in the human species.

During the first four decades of this century the question of the chromosome number of man appeared to be a purely academic matter. Little energy was expended in this field after the announcement, by a cytologist of the stature of Painter, that 48 was the diploid number for man. From the 1920's to the 1950's cytologists generally "accepted" the number 48 as being the diploid number for man.

Some six years ago the chromosome number of man began to be critically reviewed. Progress in various fields in the previous twenty years demanded it for a variety of new reasons. Perhaps the most insistent reason was the increasing number of reports of variable chromosome numbers in cells from malignant tumors. It became necessary to know definitely the normal chromosome number, for how else could one study cells with abnormal numbers of chromosomes? Also, radiation induced chromosomal aberrations and chromosomal fragmentation had been known for quite some time. But now (with

the development and continual perfection of techniques of tissue culture) it was possible to irradiate human cells and observe the results directly. Finally, the implications of Barr's⁸ discovery and development of the concept of "sexual dimorphism" in interphase nuclei forced the re-opening of the question of chromosome number and morphology because it became vital to study the X-chromosome in conditions where errors of sex-development had occurred, and where nuclear sex did not correspond to phenotypic sex.

And so it came about that in 1956 Tjio and Levan,⁹ prepared cultures of cells from lung tissue of four therapeutically aborted embryos. They reported "we were surprised to find that the chromosome number 46 predominated in the tissue cultures from all four embryos." The remarkably clear photographs of metaphase chromosomes that Tjio and Levan obtained were possible only as a result of several technical advances, these were: first, the improvements in tissue culture techniques which made it no longer necessary to use sectioned material and run the risk of artifacts and damaged chromosomes. Secondly, the use of hypotonic solutions, notably saline and citrate, made the cells swell and thus dispersed individual chromosomes. Colchicine was being used to induce mitosis and to prevent formation of the spindle. Both the latter advances had the effect of spreading the chromosomes and minimizing or eliminating preparations where the chromosomes were overlapping. The result was that accurate counts and clear photographs were not only possible, but became fairly easy. In that same year Ford and Hamerton¹⁰ inspired by Tjio and Levan's paper, obtained biopsied testicular tissue and examined the chromosomes in meiotic division for there was a suspicion that the number 46, which Tjio and Levan had so carefully observed may perhaps be characteristic only of somatic cells. Chromosome counts at the first metaphase of all three individuals consistently gave 46. The situation in 1960 was that the number 46 had become well established as the normal diploid number in Man. Confirmatory reports of 46 chromosomes, which appeared rapidly in the literature, included metaphase chromosome preparations from over 200 normal individuals. (Figures 1 and 2)

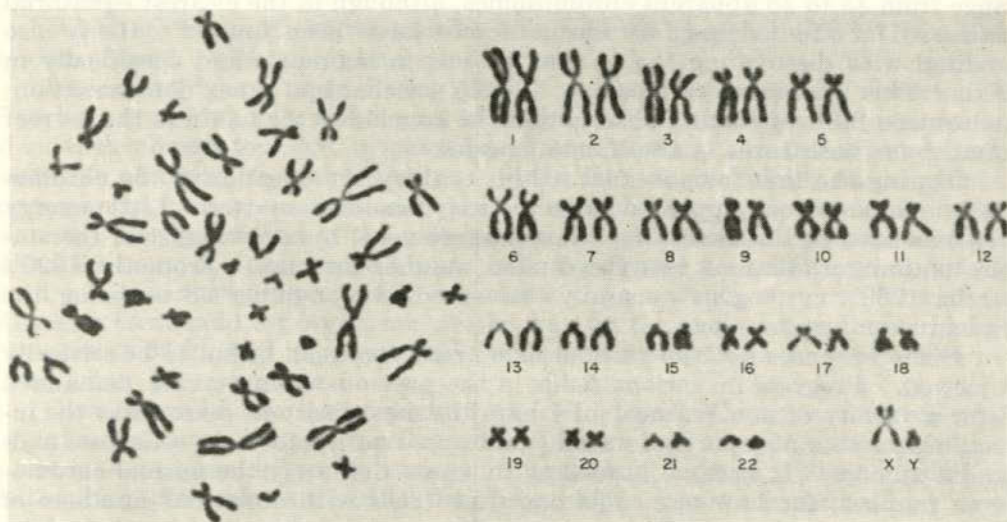


Fig. 1. The chromosome complement of a normal male.

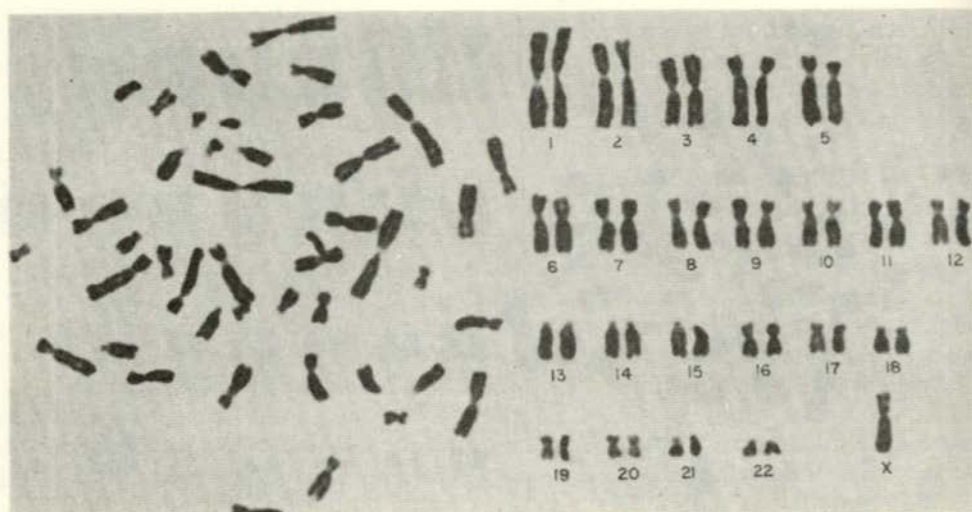


Fig. 3. Chromosome complement of a female patient with gonadal dysgenesis (Turner's Syndrome).

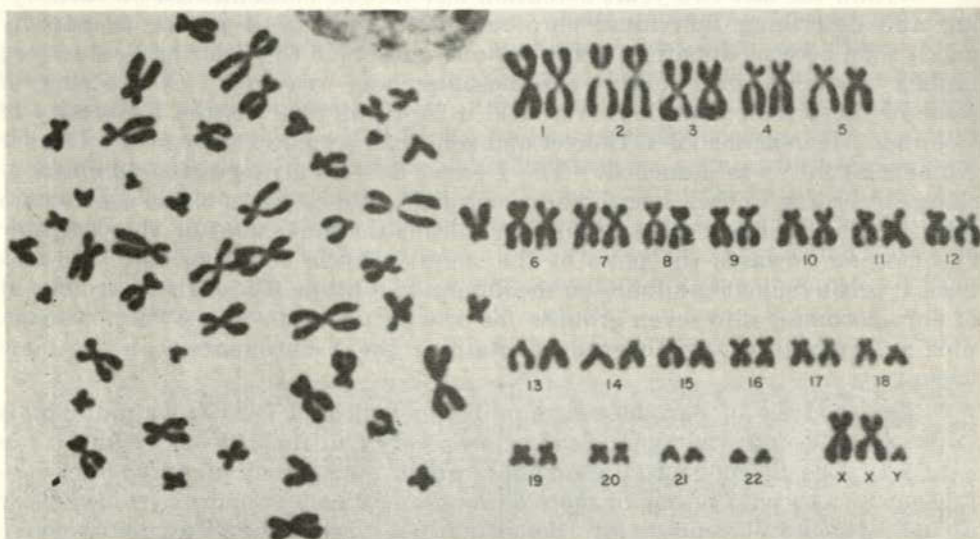


Fig. 4. Chromosome complement of a male patient with seminiferous tubule dysgenesis (Klinefelter's Syndrome).

Both in these and in Mongolism it is of considerable urgency from the point of view of future management that the diagnosis be made at as early an age as possible. A combination of dermatoglyphic and chromosomal analysis should make the diagnosis of mongolism possible at birth in almost every case where the clinical features and physical appearance are inconclusive. Secondly it is very worthwhile to obtain chromosomal analyses from all mongols routinely; for only in this way will patients be discovered who have some abnormal arrangement of the chromatin of chromosome 21 such as a translocation (where detached segments of one chromosome have become attached to another one). Finding such individuals opens new pathways for research

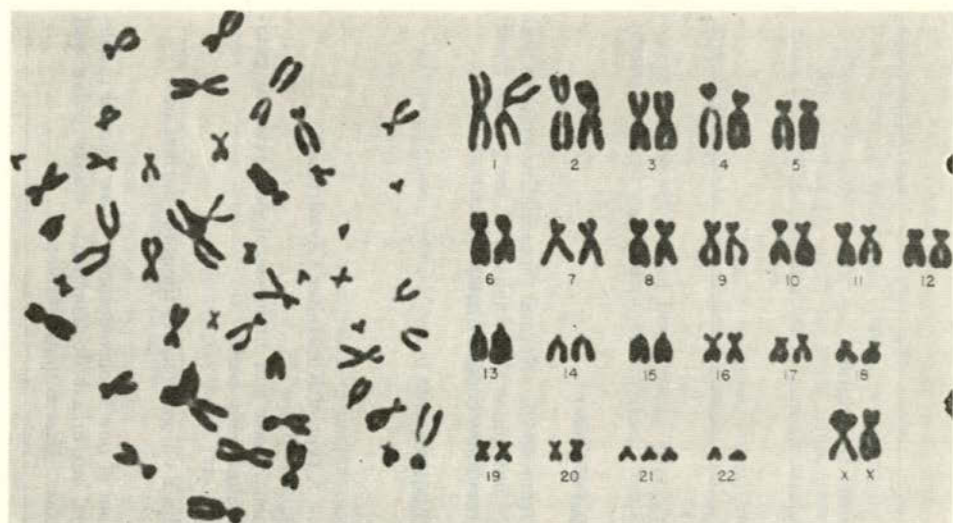


Fig. 5. Chromosome complement of a mongoloid imbecile.

into the etiology of Mongolism. It may also make accurate genetic prediction possible and place genetic counselling on a firm foundation in those families where the translocation chromosome can be traced through several generations. This has been amply demonstrated in families such as the one reported by Carter et al¹².

The more fundamental outcome of the recent advances in human cytogenetics will be first of all a better understanding of the behaviour of chromosomes during cell division and particularly during meiosis. A short time ago few would have predicted that a non-disjunctive ovum (where both homologues proceed to one daughter cell only during cell division) could be normally fertilized and produce a viable zygote or that fertilization by a non-disjunctive sperm could result in a viable zygote in such a complex organism as Man. It seems clear that our knowledge of the basic factors influencing the various aspects of cell division is very inadequate. Secondly, large registries of individuals with abnormal karyotypes will serve as a means for detecting individuals and families in which the activities of specific genes can be studied with a view to localising these genes to particular chromosomes. Should this pathway prove successful the vitally important but immensely complex process of "mapping" human chromosomes will have begun.

TABLE I Abnormal Numbers and/or Structure of Sex Chromosomes

Sex Chromosome Constitution	Total Number of Chromosomes	Clinical Name of Anomaly or Brief Description
XX	46	Normal Female
XY	46	Normal Male
XO	45	Turner's Syndrome (Gonadal dysgenesis) (female phenotype)
XO	45	Turner's Syndrome (male phenotype, one patient only)
XY	46	Turner's Syndrome (male phenotype)
XX	46	True hermaphrodites (four patients reported by three different authors).
XXX	47	The "triplo-X" female. Most patients have I.Q.'s ranging from 40-70. Normal reproductive systems and regular menstruation are the rule. One patient has multiple but minor abnormalities of the genital tract. Two patients have had children (all children have normal chromosome complements).
XXXX	48	Mentally defective, but otherwise normal females (two patients).
XXY	47	Klinefelter's Syndrome (seminiferous tubule dysgenesis).
XXXY	48	Mentally deficient male with micro-orchidism (two patients). A type of Klinefelter's Syndrome?
XXX/XO	47/45	Mosaic phenotypic female. Low normal intelligence. Amenorrhoea and under-developed external genitalia, vagina and breasts absent, uterus not palpable. Masculine body build.
XO/X ^y	45/46	Mosaic intersex. The 40% of cells with 46 chromosomes had a Y chromosome 1½ times the normal size.
X ^x	46	Phenotypic female who is presumed to have a partial deletion of one X chromosome. Low normal intelligence. Primary amenorrhoea, infantile external genitalia, no breast development, scanty pubic and axillary hair. Gonads appear as streaks of rudimentary tissue. Uterus underdeveloped.

TABLE II. Abnormal Numbers and/or Structure of Autosomes

Total Number of Chromosomes	Chromosome Constitution	Clinical Name of Anomaly or Brief Description
46	22 pairs of autosomes and the sex chromosome "pair".	Normal males and females.
47	Trisomic* for chromosome 21.	Mongolism.
46	Pseudofusion of two of the three chromosomes 21 to produce an abnormal, single, larger chromosome.	Mongolism (one patient).
47	Trisomic for one chromosome, probably number 19.	Normal father of the mongol described above.
48	Trisomic for Chromosome 21 and XXY.	Mongol with Klinefelter's Syndrome.
46	Reciprocal translocation of parts of chromosome 21 and 22.	Mongolism
46	Reciprocal translocation of parts of chromosome 21 and 15.	Mongolism
49	Trisomic for chromosomes 8 and 11, and an additional X chromosome (i.e. XXY).	Male, mentally deficient, with peculiar facies. Divided scrotum and penis (one patient only).
47 or 45	Trisomic or monosomic† for one of several autosomes or appear so due to translocations.	Several unnamed congenital anomalies usually exhibiting multiple defects.
69	Trisomic for every autosome, and XXY. (i.e. a triploid individual).	Male, small for his age and unable to raise head when lying on back. Localized lipomatosis on the backs of hands, feet, and thighs. Cutaneous and bony syndactyly of hands and feet. Lower legs thin. Jaws hypoplastic (micrognathia). Genitalia normal.

*when three homologous chromosomes are present, instead of the usual pair.

†when only one homologue is present, instead of the usual pair.

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All five photographs are of cultured leucocytes from peripheral blood and are published through the courtesy of Doctor Murray L. Barr, Department of Microscopic Anatomy, Faculty of Medicine, The University of Western Ontario, London. Figures 1, 3 and 4 are republished with the permission of the Canadian Medical Association Journal.

THOMAS, C. B., HOLLJES, H. W. D., EISENBERG, F. F. Observations on Seasonal Variations in Total Serum Cholesterol Levels Among Healthy Young Prisoners: *Annals of Internal Medicine*, 54, Page 413, March 1961.

"The total Serum Cholesterol Level in a given individual at any particular point in time is the result of numerous technical and biological variables. . . The biologic factors which influence the level of cholesterol. . . age, sex, heredity, and diet, have been well documented." This article covers a detail study of twenty-five young male prisoners in whom "highly significant seasonal variations were found with the highest cholesterol values occurring in the Winter months, and the lowest levels in the late Spring, Summer, and early Autumn." It is interesting that a curve of monthly deaths from Coronary Heart Disease Heart parallels these demonstrated seasonal variations closely. Further studies of this same type are indicated.

L.C.S.

A CASE HISTORY OF AN UNUSUAL ABDOMINAL TUMOR*

D. F. SMITH, M.D.

Halifax, N. S.

Miss M. A., a draftswoman, age 27, was admitted to the Halifax Infirmary April 8, 1960, with pain and swelling in the right upper quadrant of the abdomen, beginning the middle of March, 1960. The patient thought that it was caused by a muscle strain resulting from "Keep Fit" classes at the Y.W.C.A.

In the week prior to admission, the swelling in the abdomen had doubled in size. She had noticed the development of a dry non-productive cough for ten days prior to admission. Her appetite was fair and her bowels were normal. Previous history was essentially normal, other than an appendectomy at five years of age. Menstrual history was normal. Heart and Lungs were normal. Abdominal examination revealed a tender mass extending from the right sub-costal margin to the crest of the right ilium. This mass was not fluctuant and appeared hard and slightly tender. The remainder of the clinical examination was essentially normal.

Investigation showed Kahn negative, urinalysis negative, Hemoglobin 10.3 grams, W.B.C. 17,000, Neutrophils 90%, Lymphocytes 8% and Monocytes 2%, Sedimentation rate 59 mm. in one hour and the differential showed a shift to the left with a normochromic monocytic anemia. Prior to the admission to the Halifax Infirmary, the patient had some X-rays done at the Victoria General as an out-patient. On March 23, 1960 a normal gallbladder series was done. On March 25, 1960 a normal intravenous pyelogram was done. On March 26, 1960 a barium enema was reported as unsatisfactory. On March 31, 1960 a normal chest X-ray was reported. On April 2, 1960 a repeat barium enema showed a right upper quadrant mass pressing upon and possibly invading the hepatic flexure of the colon. There was no evidence of an intrinsic colonic lesion. On April 8, 1960 a metastatic series was reported as negative. The differential diagnosis made on admission to hospital was: (1) a new growth of liver, (2) retroperitoneal tumor, (3) abscess of a diverticulum of the colon.

On the second hospital day, the following operation was done:

"A right paramedian incision was made and the anterior sheath of the rectus muscle opened. The rectus muscle and the posterior sheath were partially freed from the mid-line, when, at the upper end of this incision pus suddenly gushed forth. The opening into this abscess cavity was enlarged to 2 inches and the abscess cavity cleaned out by suction and explored as well as possible. The origin of the abscess could not be determined. It appeared to extend upward to the region of the gallbladder, posteriorly to the region of the twelfth and probably the eleventh rib and then inferiorly to about the level of the brim of the pelvis. No free abdominal contents or feces were noted. A rubber catheter drain was inserted upwards, a rubber tissue drain was inserted downwards and part of the anterior rectus sheath was closed with chromic cat-gut. A rubber tissue drain was placed under the anterior rectus sheath and the skin was then closed loosely. The rubber catheter and both rubber drains were sutured to the skin with black silk." During the operative procedure, the patient received 500 cc. of whole blood.

A culture of the pus from the abscess showed gram negative bacilli proteus and gram positive streptococci. Fungus was not seen or grown. Both organisms were insensitive to any of the antibiotics tested.

*Presented at the Medical Staff Meeting of the Halifax Infirmary, March 16, 1961.

The patient was placed on one half gram of streptomycin I.M. q 12 h and one half gram of Chloromycetin q 12 h. The catheter from the abscess cavity was placed on continuous suction. Supportive treatment consisted of pantapone, catheterization, gravol, vitamin therapy and electrolyte therapy. The patient ran a temperature to 101 degrees until the 15th post-operative day. On occasions this temperature rose to 104. On the fifth post-operative day, Chloromycetin and Streptomycin were discontinued and Tetrax 1,000 mgs. q.i.d. was started. On the tenth post-operative day, the Tetrax was discontinued and Kanamycin 500 mgs. q. 6 H. was started. The chest was fluoroscoped on the tenth day and there was no evidence of impairment in the movement of the diaphragm. All sutures were removed from the abdominal incision by the fourteenth day. The abdominal mass by this time had partially disappeared except for slight induration below the right sub-costal margin extending to the mid-line. The Kanamycin was discontinued on the twentieth post-operative day and the patient was sent home on the twenty-third post-operative day. Her general condition at the time of discharge was good.

She was subsequently seen in the office on May 10, 1960 at which time she weighed 110 pounds. On May 16, 1960 she weighed 115 lbs. and June 22, 1960 she weighed 116 $\frac{3}{4}$ lbs. At the time of this last office visit the abdominal incision was completely epithelialized and she was feeling well.

She was re-admitted to hospital on July 5, 1960 for an exploratory laparotomy. The only positive finding at this laparotomy on June 6, 1960 were a few adhesions in the right upper quadrant of the abdominal cavity. The abdomen was closed after a biopsy of two small bits of tissue from the region of the right hepatic flexure of the colon. The pathological report was "granulomatous tissue secondary to chronic abscess from inflammation of the mesentery." The patient was discharged on the seventh post-operative day of the second admission in good condition. She was subsequently seen in August 1960, prior to returning to England, and at that time she felt very well.

On December 17, 1960, a letter was received from the patient stating that she was in excellent health. She weighed 127 pounds, was back to work and had no subsequent difficulty in her abdomen. In fact, she was feeling so fit that she was thinking of re-entering "Keep Fit" classes at the Y.W.C.A.

SUMMARY:

A case history is presented of an unusual football-sized abscess extending from the right sub-costal margin to the brim of the pelvis. The etiology of this abscess remains obscure. Dr. Gordon Bethune, the consulting surgeon in this case, believes that it was caused by the ingestion of a sharp foreign body which caused a perforation of the hepatic flexure of the colon. It is the author's belief that the abscess was caused by the rupture of a diverticulum in the hepatic region of the colon. This case is presented because of its rarity, bizarre clinical picture and its obscure etiology.

COMMENT.

SALK VERSUS SABIN

The pros and cons of inactivated and live poliovirus vaccines are at present identified in the public mind with the names of the two principal protagonists who have developed these respective methods of immunization against poliomyelitis.

Salk inherited a considerable legacy of doubt and distrust when he advocated the use of his vaccine. There was much justification for this. Kolmer's vaccine, though not strictly an inactivated preparation, caused several cases of fatal poliomyelitis following its use in 1936. Moreover a long line of discarded 'dead' vaccines, especially in the bacterial field, had lead people to doubt the efficacy of preparations that were biologically inert. The Cutter incident added fuel to the anti-Salk fire but in spite of this Salk's vaccine has emerged with a considerable balance on the credit side. One great drawback is that it has to be administered by injection. Standardization has also proved difficult. Its effective duration following the initial doses is still in doubt nor does it bestow a local immunity upon the gut itself. If a booster has to be administered every other year as is at present advised then an increasing population of 'two year immunes' will accumulate with the years unless the risk is accepted that natural immunity has in the meantime filled any remaining immunological gap.

The premise for the development of the Sabin live virus is far more firmly established. The precedents of vaccination by live virus against small-pox and yellow fever have marked this approach as a truly effective one for by this means it has been conclusively shown how 'killer' viruses may be effectively displaced from the immunological pattern by related but innocuous live antigens. But the comparison ends there. Both these procedures are confined to the individual vaccinated whereas Sabin's attenuated poliovirus vaccinates a community rather than an individual. It is this advantage that poses the big question. Are the polioviruses genetically stable enough to undergo natural passage without reversion to neurotropism? An increasing number of pilot experiments and some large scale ones have been conducted to study this aspect of attenuated polioviral infections.^{1,2,3} So far no cases of paralysis or clinical symptoms have been reported and while some increase of neurotropism has been observed in the laboratory following human passage the general opinion is that in its field trials the three types of Sabin virus are both stable and antigenically effective.⁴

The prospect of the increasing displacement of viral pathogens by attenuates, now also being applied to measles, is truly an exciting one. If the poliovirus experiment is successful one may perhaps envisage a visit to the local 'influenzarium' where one may sit and read ancient magazines whilst inhaling a droplet suspension of the latest influenzal attenuate.

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THE UNFORTUNATE APPENDAGE

Of the several human appendages that are constantly the target for surgical assault by knife or guillotine none is more long-suffering or less deserving than that delicate preserver of the felicities of later life—the humble foreskin. Long the object of religious persecution, its life expectancy on many parts of the North American Continent can now barely average little more than ten days, for the time-honoured custom of the priests of Zion has spread with an almost proselytizing fervour through the portals of the pediatricians offices and into the homes of tidy-minded matrons who like their baby sons as streamlined as their feeding formulae.

In the United Kingdom its life expectation showed a sudden reversion to normal with the advent of the National Health Service in 1948. It seems that people who are paid *per capita* are not going to work *per circumcisma* or even bestir themselves to remove the threat of a putative (a very putative) carcinogen.

A hazard of the modern machine age, however, awaits all the little rosebuds that have enjoyed this pleasing respite. It appears from the correspondence columns of the British Medical Journal that the 'pre-school-age male', to give him his statistical title, has not infrequently become inextricably attached by the surviving appendage to that most useful closer of openings—the ubiquitous ZIP and that when such occurs the unfortunate appendage has once again to undergo the ancient ritual. A later writer points out that approach from below with a metal-cutting instrument can easily separate the flanges of the zip.

So far it has not been reported that a modern-day King Lear has been heard offering his kingdom for a pair of pliers.

BENGE'S SURGICAL STEW*

Benge the Pot-boiler has been at it again. *What* a stew. Here is the recipe. . . . Take a cluster of fee-hungry surgeons and stir up with some old Obs. and Gyn. skeletons. Ovaries with or without follicles may be added to thicken. Chop out an appendix or two, preferably normal. Add a brace of urologists with floating kidney seasoning. Pour on Benge's special de-glamorizing sauce and allow to sink in. Concentrate and refine and place in Maclean's extra hot oven with or without Maclean's special Three in Five Blood Transfusion Mixture. Serve while piping hot with a dash of Benge's famous Jeeze Whizz. Swallow with tongue in cheek. Prunes to follow. . . .

Now you young blades (ahem) are you going to take this one lying down? We have reserved a special correspondence column in the next issue of the Bulletin for all scalpel users on the subject of *De-Glamorizing Benge*.

So let's hear from you for next month.

*Maclean's Magazine, Sept. 23rd, 1961. Why Surgeons Operate, by Dr. Benge Atlee.

THE TREATMENT OF URINARY INFECTIONS

F. G. MACK, M.D.
Halifax, N. S.

The objective in treatment of an infection of the urinary tract is to obtain and maintain a sterile urine. The urinary tract is normally sterile and infection in it implies some decrease in its natural resistance or the introduction of virulent pathogenic bacteria. The effect of either or both of these may be acute and of short duration, or the infection may assume a chronic form. Obstruction, congestion, trauma, general debility and adjacent or more distant foci of infection may all predispose to infection in the urinary tract.

Successful therapy involves not only treatment in the form of anti-bacterial drugs, but also attention to the patient's general health, eradication of infective foci elsewhere in the body, surgery where necessary for the elimination of obstruction or other pathology in the urinary tract, and adequate follow up to assure that the infection has been eliminated and not become chronic. Long term therapy is necessary in many cases when treating a chronic infection or as prophylaxis in cases prone to recurrence. This may mean medication over months or years.

From the point of view of therapy, urinary tract infections can conveniently be grouped into three categories. The first class, without abnormality of the urinary tract and without history of urinary tract infection, has a good prognosis for cure as judged by relief of symptoms and elimination of the infecting organism from the urine. The second group of cases includes those with previous history of infection, and here the prognosis is only moderately favorable. In the last group, where there is definite abnormality in the urinary tract, the prognosis is poor unless surgical correction is possible.

Any classification of urinary infections no matter how broad would be incomplete without specifically mentioning pyelonephritis, especially the chronic form which so often may go unrecognized and may be the cause of hypertensive vascular disease or of renal failure. Much clinical and experimental investigation is being done at the present time in this very important disease.

The usual initial attack on urinary infection in the first of the three groups with any of the antibacterial agents is generally successful. Indeed, even if the patient does not seek the attention of a physician, he will usually get better spontaneously, evidence of the natural resistance of the lining epithelium and of normal urine to infection. Examples are the acute pyelonephritis in infancy and childhood, the acute urethritis and cystitis so frequently observed in women and female children, or the acute prostatitis and cystitis of the adult male. Subsidence of symptoms, however, may not necessarily indicate complete cure. Local damage may have occurred in the kidney, the urethra or the prostate and bladder, which will predispose to chronic subclinical infection or periodic recurrences. Such cases, therefore, should be treated for their infection as well as for their symptoms, and followed long enough to ensure that the infection has been eliminated. All too frequently the medication is stopped after a short period of treatment when the patient's symptoms have disappeared. The drug used may be expensive, there may be possibility of toxic reactions, but the fact remains that the site of infection has not had time to heal. A good example of this type of inadequate therapy of acute urethritis

is the treatment of gonorrhoea in the male where one injection of penicillin, 400,000 units, is usually sufficient to cure the gonorrhoea, but if there is not some protection for the damaged urethral epithelium until healing is effected, a secondary infection is very likely to become established with a resulting chronic non specific urethritis. Hence in this disease the advantage of prescribing a sulphonamide for at least a week in addition to the original antibiotic.

Where the infection is a recurrent one or where, after adequate therapy, repeated urinalyses, or preferably urine cultures, reveal continuing infection a search has to be made for the cause. The intravenous pyelogram is a very useful part of this investigation and is today available to most doctors. The presence of a calculus, unilateral or bilateral obstruction with hydronephrosis, may be revealed, or non visualization of the dye from one or both kidneys may indicate disease or anatomical abnormality. Catheterization of the patient will reveal urethral obstruction if present, and, at the same time, one can determine the presence or absence of residual urine in the bladder. General examination may show infected teeth, tonsils, etc., or pathology adjacent to the urinary tract in the vagina, cervix, Fallopian tubes or prostate. Endoscopic examination of the urethra, bladder neck and bladder with ureteral catheterization and collection of urine from each kidney for analysis and culture, and retrograde urograms may be necessary to determine the cause and indicate the treatment of a persistent infection.

In considering chemotherapy in such a brief presentation one can only generalize about the many agents which are at present available for use in urinary infections. Since the majority of cases of uncomplicated urinary infection will respond to a great number of these substances, it would seem reasonable to select one which is relatively non toxic, which will act efficiently and which is not too expensive, although this last is a practical and not a scientific consideration. The sulphonamides fit this picture very well. The more recently produced compounds such as Gantrisin, Thiosulfil, etc., are of low toxicity and give a high urinary concentration without the risk of crystaluria. Some of the even more recently developed ones because of slow urinary excretion may be given in single daily doses, and would seem to be adequate in treatment of the more chronic cases, or when used prophylactically.

When the response to a sulphonamide is not satisfactory, or when the severity of the infection or its complications are producing clinical deterioration of the patient, the broad spectrum antibiotics play their part as "miracle drugs". The bacteriologist through sensitivity testing of the cultured bacteria, can give us invaluable aid in selection of the suitable antibiotic, but medical knowledge and clinical judgment have to be exercised as well. The potential toxic properties of these agents are or should be the knowledge of the clinician. Gastro-intestinal complications, possible damage to the hemato-poietic system, development of resistant variants of the bacteria, elimination of sensitive bacteria only to have an equally severe infection developing due to other insensitive organisms present, are a few of the pitfalls in using these drugs. Chloramphenicol has been and still is one of the most useful antibiotics in treating urinary infections, but its potential hazards must be realized and total dosage kept to a minimum.

Penicillin remains the antibiotic of choice in the treatment of gonorrhoea but is of little value in the treatment of the usual urinary tract infection. Streptomycin is still a good drug in some non specific urinary tract infections, and of course is most useful in the chemotherapy of tuberculosis of the genito-

urinary tract. Nitrofurantoin (Furadantin) is an agent of relatively low toxicity, excreted in high concentrations in the urine and of quite marked antibacterial activity in many of the urinary tract infections. It is useful in many chronic infections, particularly of the lower urinary tract. It is also valuable in prophylaxis. Mandelic acid and its compounds are useful in some cases where long term therapy is involved, but it is often forgotten that to be effective it requires an acid urine and since in many of the urinary tract infections, as a result of ureolytic activity, the urine is persistently alkaline, these drugs may be completely ineffective, despite the *in vitro* sensitivity of the organism to it as determined in the laboratory. Combination of a coloring agent with many of these drugs is enjoying a vogue, and may be for some patients good psychology because, as one manufacturer suggests, the patient can actually see that the medicine is working!

Long term treatment of chronic infections and prophylactic therapy have been frequently mentioned above, and this aspect of treatment plays an important part in urinary tract infections. Assuming that correction of any obstructive features or other pathology has been employed where indicated, there remain those patients with continuing infection in the kidneys or lower urinary tract, or those prone to recurrence which require prolonged use of antibacterial agents. One such example is the female child or infant with chronic or recurring infection in the urethra and bladder frequently leading to a complicating pyelonephritis. Such a case may require treatment for several years utilizing a chemotherapeutic agent in low dosage to protect the urothelium from the onslaught of an acute infection. Medication such as one of the longer acting sulphonamides alternating with Furadantin every two weeks is a useful regime. In addition, attention to general health and protection from exposure to cold, dampness, fatigue, etc., are important adjuncts to therapy. It is gratifying to find how many of these patients under such a course of treatment, will eventually seem to outgrow their tendency to re-infection without having acquired a chronic pyelonephritis or other serious complication. Living with them during their sometime frequent "flare ups" however can be very trying for the parents as well as for the family physician.

One would be remiss in any discussion of urinary tract infections no matter how brief, not to mention tuberculosis. It is still with us, obviously will be for some time yet, and will go unrecognized unless the clinician has a high index of suspicion in all cases of urinary tract infection, particularly those that are chronic and do not respond to the usual forms of therapy.

INFECTIOUS DISEASES—NOVA SCOTIA
Reported Summary for the Month of June, 1961

Diseases	NOVA SCOTIA				CANADA	
	1961		1960		1961	1960
	C	D	C	D	C	C
Brucellosis (Undulant fever) (044)	0	0	0	0	6	14
Diarrhoea of newborn, epidemic (764)	0	0	0	0	3	8
Diphtheria (055)	0	0	0	0	2	7
Dysentery:						
(a) Amoebic (046)	0	0	0	0	0	0
(b) Bacillary (045)	5	0	0	0	209	179
(c) Unspecified (048)	113	0	0	0	138	13
Encephalitis, infectious (082.0)	0	0	0	0	0	2
Food Poisoning:						
(a) Staphylococcus intoxication (049.0)	0	0	0	0	0	0
(b) Salmonella infections (042.1)	2	0	0	0	42	0
(c) Unspecified (049.2)	0	0	0	0	1	60
Hepatitis, infectious (including serum hepatitis) (092, N998.5)	20	0	18	0	529	333
Meningitis, viral or aseptic (080.2, 082.1)						
(a) due to polio virus	0	0	0	0	1	0
(b) due to Coxsackie virus	0	0	0	0	1	0
(c) due to ECHO virus	0	0	0	0	0	0
(d) other and unspecified	5	0	0	0	16	4
Meningococcal infections (057)	1	0	1	0	5	9
Pemphigus neonatorum (impetigo of the newborn) (766)	0	0	0	0	0	2
Pertussis (Whooping Cough) (056)	1	0	5	0	259	319
Poliomyelitis, paralytic (080.0, 080.1)	0	0	3	0	7	25
Scarlet Fever & Streptococcal Sore Throat (050, 051)	139	0	95	0	892	1242
Tuberculosis						
(a) Pulmonary (001, 002)	14	2	14	4	xx	406
(b) Other and unspecified (003-019)	3	0	0	0	xx	121
Typhoid and Paratyphoid Fever (040, 041)	0	0	0	0	12	23
Veneral diseases						
(a) Gonorrhoea —						
Ophthalmia neonatorum (033)	0	0	0	0	0	0
All other forms (030-032, 034)	15	0	32	0	814	1089
(b) Syphilis —						
Acquired—primary (021.0, 021.1)	0	0	0	0	0	0
— secondary (021.2, 021.3)	0	0	0	0	0	0
— latent (028)	0	0	0	0	0	0
— tertiary — cardiovascular (023)	0	0	0	0	0	0
— „ — neurosyphilis (024, 026)	0	0	1	0	0	0
— „ — other (027)	0	0	0	0	0	0
Prenatal—congenital (020)	0	0	0	0	0	0
Other and unspecified (029)	1	0	1	0	143*	121*
(c) Chancroid (036)	0	0	0	0	0	0
(d) Granuloma inguinale (038)	0	0	0	0	0	0
(e) Lymphogranuloma venereum (037)	0	0	0	0	0	0
Rare Diseases:						
Anthrax (062)	0	0	0	0	0	0
Botulism (049.1)	0	0	0	0	0	0
Cholera (043)	0	0	0	0	0	0
Leprosy (060)	0	0	0	0	0	0
Malaria (110-117)	0	0	0	0	0	0
Plague (058)	0	0	0	0	0	0
Psittacosis & ornithosis (096.2)	0	0	0	0	0	0
Rabies in Man (094)	0	0	0	0	0	0
Relapsing fever, louse-borne (071.0)	0	0	0	0	0	0
Rickettsial infections:						
(a) Typhus, louse-borne (100)	0	0	0	0	0	0
(b) Rocky Mountain spotted fever (104 part)	0	0	0	0	0	0
(c) Q-Fever (108 part)	0	0	0	0	0	0
(d) Other & unspecified (101-108)	0	0	0	0	0	0
Smallpox (084)	0	0	0	0	0	0
Tetanus (061)	0	0	0	0	1	0
Trichinosis (128)	0	0	0	0	8	0
Tularaemia (059)	0	0	0	0	1	0
Yellow Fever (091)	0	0	0	0	0	0

*Not broken down

C — Cases D — Deaths xx—not available

Complete figures not available

BOOK REVIEW

EDUCATION FOR CHILDBIRTH

(A Guide for Nurses). An offering of the Department of Public Health, Province of Nova Scotia.

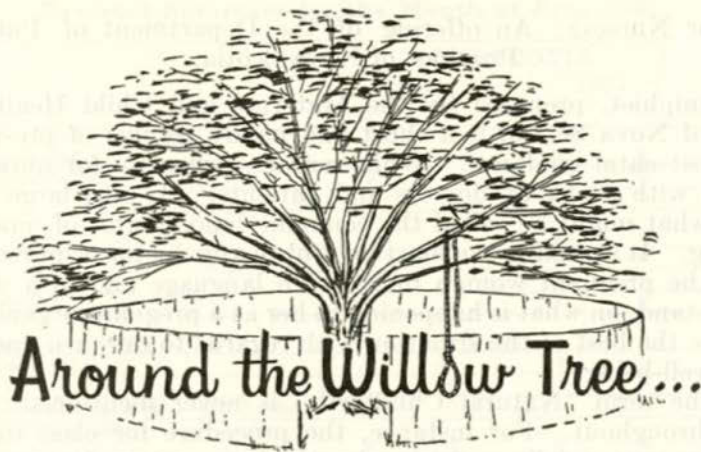
This pamphlet, prepared by the Maternal and Child Health Advisory Committee of Nova Scotia, is a short and handy resume of pre-natal, intra-natal and post-natal guidance. While written primarily for nurses, it could also be read with profit by doctors and patients. By and large it embodies the best of what might be called the common denominator of modern obstetrical teaching. It should prove most helpful to any doctor or nurse who wishes to instruct the pregnant woman in her own language and in a way she can easily understand, on what is happening to her as a pregnant organism and how she can make the best of the situation with regards to her own and her baby's health and well-being.

While the term "Natural Childbirth" is never mentioned, its effect is noticeable throughout. For instance, the procedure for class instruction of the pregnant women follows fairly closely that used in Natural Childbirth clinics. Then there is the mention of the presence of the husband during labor, and the fact that it is important to answer all the patient's questions. However, the way the latter is stated in the text is not perhaps as explicit as it might be. It reads: "Questions: The answers to these are important since they are recorded and act as a guide to the doctor and nurses to help the mother during labor." I was not sure whether this meant those questions that the patient asked in her anxiety or apprehension, or those questions touching her condition asked by the nurse or doctor which are part of the usual case history taken on admission to hospital. If they mean the former, they can be most important since we have found that the casting out of fears by answering the patient's questions can play an important part in her performance during labor. Then again it is stated on page 19 "The mother has no control over these contractions (those of the end of the first stage) so the best thing she can do is relax and practice the breathing exercises." Yet the breathing exercises, a well-known part of our local method of Natural Childbirth training, are not described anywhere in the text.

As one long associated with the Department of Obstetrics & Gynecology of Dalhousie, I can only regret that our work in Natural Childbirth found so *little* expression in this booklet. Not only did we pioneer the process in Canada, but our work—which dealt with a large group of cases—has been published and our results confirmed by what others have found: Furthermore, they continue to be confirmed as clinic after clinic in the United States takes up the procedure under one name or another. However, like early ambulation in obstetrics, which we also pioneered on this continent, Nova Scotia will give Natural Childbirth its real due only when the Americans really go fully overboard about it, and the word comes back from our neighbors to the south that God has finally set His seal on the procedure. In the meantime, perhaps we could expect no more from a backward community than the timorous references to it contained in this excellent booklet.

For it is an excellent booklet. In so far as it goes it covers its field well and with a commendable clarity and brevity. Perhaps you will then overlook my senile tears over the fact that it does not go as far as, being a Nova Scotian product, it might have gone had it made the fullest use of Nova Scotian brains and Nova Scotian initiative.

H.B.A.



THE PARABLE OF THE PROSPEROUS FARMER

There was once a prosperous farmer who farmed a rich green valley of many fields. In one field he kept cows, in another, sheep, in a third hogs, in a fourth, chickens. In other fields he grew hay for the cows, potatoes for the hogs, grain for the poultry and from his sheep he took the wool for his clothes and grew fine mushrooms from the sweepings of the barns. And from each of the fields a bubbling golden stream ran merrily down the hill-side into one of the three golden banks that he had dug against a dry season. As he surveyed his fields his felicity was complete, his happiness knew no bounds. But one day when he was tending his cows he looked over the hedge and saw a young farmer in a neighbouring field. "What are you doing there?" he asked. The young farmer replied "I have just passed out from the College of All Diplomas. I have taken my D. Cow and now I can raise better herds than you and produce more and richer milk. Because of this the Government and the people will buy my cows and drink my milk". And it was not long before the farmer found that this was so and soon the little golden stream that ran from his cow-field dwindled to a trickle and then dried up all together. So he ceased to raise cows and soon forgot all about them.

However, he was able to devote more attention to his sheep until one morning looking over the hedge of his sheep field he saw another young farmer. "What are you doing there?" he asked. "I have just passed out from the College of All Diplomas" he replied. "I have taken my D. Sheep. Now I can raise bigger and better sheep than you with tastier meat and whiter, fleecier more abundant wool. Soon the Government and the people will be buying my sheep and my wool." And it turned out as he had said and very soon *that* little golden stream dried up completely as well. And the farmer quickly forgot how to raise sheep. So he devoted much more of his time and energy into raising hogs until one morning he saw a young farmer the other side of the hedge. "I suppose you have taken your D. Hog" said the farmer to the younger man. He nodded. "Now I can grow bigger and better hogs than you with more lean in my bacon and better crackling on my pork. Soon the Government and the people will buy my pigs instead of yours." "Then buy my potatoes to feed your pigs" suggested the farmer. Another young farmer popped up behind another hedge. "I've been to the College of All

Diplomas too, and I have taken my D. Pot. I can grow bigger and better potatoes than you with many more eyes and finer tubers. He will buy my better potatoes for his better pigs". So the golden streams from those two fields dried up as well. He was able, then, to expand his poultry houses and he worked hard at this for some time.

One morning a red-faced man wearing a large black hat and carrying a polished leather brief-case visited his farm. "I am the Chief Drainer" he introduced himself. "Our Great Minister has just told us that a mighty Peace has broken out in a distant part of the world. There he must fly with all his Lesser Ministers in great glory to settle this outbreak of Peace, So we must take one of these banks of gold and drain it into the river that runs into Treasury Lake." "But I have stored that against a day when it may not rain," objected the farmer.

"Have no fear it will never happen again" said the Chief Drainer. The Great Minister promises you that. You remember in the last General Collection he made that promise to you little people."

So a number of Junior Drainers quickly drained one of his banks into the Golden river that fed Treasury Lake.

One day while he was busy in his hen houses he saw another young farmer building hen houses in a neighbouring field. "What are you doing there" he asked. "I have just passed out from the College of All Diplomas where I have taken my D. Chick. Now I can grow bigger and better and more tender chickens than you and produce finer, larger and more numerous eggs." And to prove it he showed him a beautiful golden-brown egg just laid by a fine looking hen. And the stream from that field dried up too. They all allowed him the manure from their cattle, so he was still able to tend his mushrooms and grow his hay. But one morning while inspecting his mushroom frames he looked over the hedge and saw another young farmer. "You must have taken your D. Mush," he said with a sinking heart. "That's right. Now I can grow bigger and better mushrooms than you and in greater abundance. The Government and the people will buy my mushrooms instead of yours." And so it turned out and the little golden stream quickly dried up and soon he forgot how to raise chickens and grow mushrooms.

Then one day the Chief Drainer visited again. A still more magnificent Peace had broken out in yet another part of the world and the other two banks must be drained into the Golden River that lead to Treasury Lake. "But you said the Great Minister promised not to drain any more of my banks," he protested.

"Of course he did" agreed the Chief Drainer. "But I see you are ignorant of Politics."

"What is Politics"? enquired the farmer.

"The art of standing on your head and reading promises that have got turned upside-down," he replied.

As they were walking across his hay-field he spied a small bank that the farmer had dug against a very dry season.

"You did not report this in your drains returns," said the Chief Drainer severely. "That is a very serious offence." And he ordered his Under-drainers to drain it immediately into the Golden river.

"Next time you will go in the bull-pen with the rest of the Dodgers," he he said sternly.

"But I will soon have no golden water against a rainless season," he protested again.

"Are you not proud that our Great Minister can now tell all the other Ministers in the world that we have the biggest, deepest and widest drains in existence and that soon they will be even bigger, deeper and wider?"

"Yes Sir," said the farmer humbly.

"You still have a trickle from your hay field. That should be enough for your needs," the Chief Drainer concluded.

The farmer had now become very depressed. As he walked to church the new young farmers splashed his torn old breeches with the mud from the wheels of their swift Caddilcarts. And whilst fishing in the golden river their great yachts washed his little boat into the shallow bays and estuaries that held very few fish.

One day one of them came up to his house and said "Why don't you go to the College of All Diplomas and take out a Diploma like us"? He thought of this long and deeply and at last he left for the city and asked the Principal of the College if he might take his D. Hay. "Any fool can grow hay", the Principal said. "All the other Diplomats take it from the hedges and ditches around them. We have no diploma at present for growing hay. Besides aren't you a little old for taking new diplomas?" The farmer nodded sadly and had to admit that he was. He realized then that there was only one thing he could take. So when he got home he lifted his gun from its rack, went out into his hayfield and took his D. Life. At his funeral each Diplomat, by agreement, shed a single tear on his coffin and again by agreement, shovelled a spade full of earth on top of him and patted it down lightly but nevertheless firmly, until the earth was levelled off. A few days later a fine marble scroll from the college of All Diplomas was placed on top, of his grave, not too expensive, but heavy enough, you understand, to make certain that he would never rise again. And on the scroll, etched in black letters, was the inscription

FARMER, G.P.
PASSED OUT D. LIFE, 1984
R.I.P.

And at the edge of the scroll in letters of gold was the motto of the College of All Diplomas which when translated from the Latin read

SUCCESS ATTENDETH HIM WHO PLACETH ALL HIS EGGS IN
ONE BASKET.

When the grass was beginning to grow once again on the bare soil above his grave a new young farmer arrived with his D. Hay, for the College had just discovered a new and better way of growing hay. And he was the last man to enter the farmer's fields except of course the Chief Drainer who had come to drain the last of his banks into the Golden River that lead to Treasury Lake. For an even greater, more magnificent, more megatonic Peace had broken out in still yet another part of the world and the Great Minister and his Great Lesser Ministers and his Lesser Great Ministers were once again flying in splendid glory to make a greater, better, more expensive, more megatonic settlement than the world had ever known before

E.H.E.

PERSONAL INTEREST NOTES

HALIFAX MEDICAL SOCIETY

September 20, 1961—The Annual Hospital Insurance Institute, held at the Victoria General Hospital, Halifax, was addressed by Brig. H. W. Murdock, Chairman of the Nova Scotia Hospital Insurance Commission, who warned that the increased operating costs of Nova Scotia Hospitals,—14.5% for 1961 over 1960—was much greater than any other province in Canada, and this rate had to be slowed. He pointed out that it was the largest single industry in Nova Scotia—employing more than 5,000 people. In 13 Nova Scotia Hospital areas, over half a million dollars was spent annually, and in five of these the figure was more than a million dollars. Seventy percent of operating costs went to wages and salaries, 10% to food, 10% to drugs and medical supplies, and 10% to miscellaneous, smaller items.

September 20, 1961—The Halifax Medical Society held a special meeting at the Dalhousie Public Health Clinic to consider the brief to be presented by The Nova Scotia Medical Society to the Royal Commission on Health Services. A summary of this brief was presented by Dr. R. O. Jones, and discussed in some detail by representatives of the special research committee.

UNIVERSITY

September 25-29, 1961—The post-graduate division of the Faculty of Medicine of Dalhousie University in cooperation with the Department of Anaesthesia presented a short course in Anaesthesia, involving practical experience in the operating rooms of the Victoria General Hospital, Halifax Infirmary, the Armed Forces Hospital, and Camp Hill Veterans Hospital. Afternoon sessions were devoted to lectures at the Victoria General Hospital.

Dr. Paul Chadwick was appointed Associate Professor of Bacteriology at Dalhousie University Medical School. Dr. Chadwick is a native of Taunton, Somerset, England.

BIRTHS

To Dr. and Mrs. Alan Drysdale (née Myria McCully) a daughter, Diane Patricia, at the Grace Maternity Hospital, Halifax, August 25, 1961. A sister for Carolyn and Susan.

To Dr. and Mrs. F. A. Dunsworth, a son, Philip James, at the Halifax Infirmary on August 11, 1961.

To Dr. and Mrs. Thomas Edgett, a daughter, Jane Muriel, Grace Maternity Hospital, September 18, 1961.

To Dr. and Mrs. Edward Rafuse (Barbara Rosborough, R.N.) a daughter, at the City of Sydney Hospital, August 18, 1961. A sister for Paul.

To Dr. and Mrs. Harold Specht (Betty Fuller), a daughter at the E.K.M. Hospital, Wolfville, on September 3, 1961. A sister for Susan, Eric and Karen.

To Dr. and Mrs. Kevin Tompkins (née Mary Sheppard) a daughter, September 8, 1961 at the Radcliff Infirmary, Oxford, England.

COMING MEETINGS

November 6, 1961—Annual Meeting of the Nova Scotia Society of Ophthalmology and Otolaryngology, Halifax. This will be a combined meeting with the New Brunswick Society at the Victoria General Hospital, Halifax.

November 6-9, 1961—35th Annual Dalhousie Refresher Course, Halifax, N. S. The John Stewart Memorial lecturer will be Dr. Charles Gass. Guest speakers will include Drs. D. R. Webster, P. Wood (Sims Commonwealth Travelling Professor), W. F. Sheeley, and C. L. Conley.

November 13-18, 1961—Canadian Heart Association and National Heart Foundation of Canada, joint annual and scientific meetings in Vancouver, B.C. Address inquiries to Dr. J. B. Armstrong, National Heart Foundation of Canada, 501 Yonge St., Toronto 5, Canada.

May 21-23, 1962—109th Annual Meeting of The Medical Society of Nova Scotia, Nova Scotian Hotel, Halifax, N. S.

June 18-22, 1962—95th Annual Meeting of The Canadian Medical Association, Winnipeg, Man.

October 7-13, 1962—The 4th World Congress of Cardiology will be held at the Medical Centre, Mexico City, Mexico. Address inquiries to the General Secretary: Dr. Isaac Costero, 4th World Congress of Cardiology, Institute N. De. Cardiologia, Avenida Cuauhtemoc 300, Mexico 7, D.F.

June 10-14, 1963—96th Annual Meeting of The Canadian Medical Association, Toronto, Ont.

OBITUARY

Dr. Ralph Benjamin Cox, 84, Connecticut physician and a native Nova Scotian died September 12, 1961 at his summer residence in Kingsport. Dr. Cox had practiced medicine in Collinsville, Conn. for 59 years.

Dr. Fred J. Granville, 54, Stellarton, immediate past-president of The Medical Society of Nova Scotia collapsed and died of a heart seizure at the Aberdeen Hospital in New Glasgow on September 19, 1961. Dr. Granville was born in Halifax, attended City Schools, and graduated from Dalhousie University Medical School in 1933. After one year on the staff of Camp Hill Hospital, he joined the late Dr. George W. Whitman in his practice in Stellarton. He was a member of Our Lady of Lourdes Parish, being a past-president of the Holy Name Society of that parish. He was a member of the Board of Directors of the Junior Technical Institute at New Glasgow, a member of the Civic Club, New Glasgow, and a member of the reserve army during World War 2. He was on the Pictou County Boxing Commission, and at one time, was an executive member of the Stellarton Albions of the Halifax and District Baseball League. He was a past-president of the Pictou County Medical Society, the Nova Scotia Division of the College of General Practice, and a member of the Nova Scotia Provincial Medical Board. He is survived by his wife, three daughters, two sons, and three brothers, one of whom is Dr. Edward T. Granville of Halifax.

SESSION 1961-62

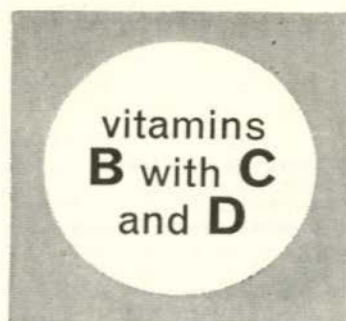
FIRST YEAR

Amero, Joseph Martin	12 Maywood Ave., Apt. 109, Point Lachine, Quebec.
Baker, David Alan	11 Ravine Rd., Great Neck, N. Y.
Beck, Carol Adeline	Box 37, Charlottetown, P.E.I.
Bessonette, John Rupert Webster	2 Connaught Ave., Halifax, N. S.
Blackie, Peter Blanchard	38 Carpasian Rd., St. John's, Nfld.
Bloom, Harold Richard	Star Route, Mahapee, New York.
Brake, Robert John	12 Guy St., St. John's, Nfld.
Caines, Leslie William	7 Humber Park, Corner Brook, Nfld.
Cameron, Mary Frances	134 Mitchell St., New Glasgow, N. S.
Canfield, Mildred Joyce	Crapaud, P.E.I.
Casey, Joan Iris	103 Edward St., Halifax, N. S.
Christie, Garth Bent	11 Regent St., Amherst, N. S.
Covert, William Harold Napier	127 South Park St., Halifax, N. S.
Crocker, John Frank Shears	70 East Valley Road, Corner Brook, Nfld.
Davison, Ross Brown	Kensington, P.E.I.
Dobson, Thomas Edward	283 South St., Halifax, N. S.
Duncan, Jeanne Rebecca	Box 148, Dalhousie, N. B.
Dunn, James Michael	15 Avenger Place, Shearwater, N. S.
Edstrom, Henry William Kearney	289 South St., Halifax, N. S.
Englund, Roy Emil	P.O. Box 304, Castlegar, B. C.
Finch, Graham Charles	182 Crichton Ave., Dartmouth, N. S.
Fischer, Henry Mark	196 Quentin Rd., Brooklyn 23, N. Y.
Frecker, Richard Charles	25 Forest Rd., St. John's, Nfld.
Freedman, Melvin Harris	30 Coronation Ave., Lancaster, N. B.
Gailiunas, Vytautas Romualdas	278 Coburn Ave., Worcester 4, Mass.
Gale, Gordon Smardon	21 Parkwood Terrace, Halifax, N. S.
Glasser, David	Willowbrook State School, Staten Island, New York.
Graham, Michael Ross	Main River, Kent Co., N. B.
Harvey, Neil Gerard	4 King St., Grand Falls, Nfld.
Hebb, Arthur Michael Olding	299 Portland St., Dartmouth, N. S.
Hong, Kim Edward	83 Gower St., St. John's, Nfld.
Inglis, Douglas Stewart	101½ Botsford St., Moncton, N. B.
Leavitt, Preston Myron	St. George, N. B.
Lund, Robert Allan	92 Kent St., Charlottetown, P.E.I.
Macdonald, Alexander George	7 Green St., Charlottetown, P.E.I.
MacDonald, George Vernon Arnold,	283 Richmond St., Charlottetown, P.E.I.
MacKenzie, Bruce Ross	127 Lansdowne St., Fredericton, N. B.
MacSween, Hugh Miller	8 George St., New Waterford, N. S.
Martin, Robert Henry	P.O. Box 307, Edmundston, N. B.
Miller, James Lance	454 Brixton Ave., St. Lambert, Quebec.
Morrisey, James Thomas	820 Sand Cove Rd., Lancaster, N. B.
Nichols, Peter Richard	Digby, N. S.
O'Brien, Francis Mary	64 Cochrane St., St. John's, Nfld.
Paster, Robert Harold	65-65 Booth St., Forest Hills 74, N. Y.
Piper, William Archibald	Cork Hill, Montserrat, W.I.
Pollett, Harry Fraser Lancaster	14 Rockcliffe St., Halifax, N. S.
Roberts, Robert	P.O. Box 244, Stephenville, Nfld.
Rubin, Arthur Seth	3450 Gates Place, New York 67, N. Y.
Rushton, Donald Kenneth	R.R. No. 1, Westchester Station, N. S.
Sanders, David Herbert	285 Portland St., Dartmouth, N. S.
Sapp, George Albert	Box 819, Liverpool, N. S.
Seantlebury, Thomas Herbert	82 Kent St., Charlottetown, P.E.I.
Schneiderman, Andrew Barrie	45 Thanet St., Moncton, N. B.
Squires, William Gerald	P.O. Box E5337, St. John's, Nfld.
Stein, William Joseph	6 Polygon Rd., Grand Falls, Nfld.
Stuart, Ronald Douglas	82 Stellarton Rd., New Glasgow, N. S.
Sturge, Cecil Calvin	Wesleyville, Nfld.
Sullivan, Charles Roland	Montague, P.E.I.
Sutherland, Doris Yvonne	Red Bank, Northumberland Co., N. B.
Tong, Raymond Quing Leung	763 Nathan Rd., 3rd Floor, Hong Kong.
Veleoff, Shirley Marie	18 Prescott St., Halifax, N. S.
Vontso, Kersti	Saint John Tuberculosis Hospital, Saint John, N. B.
Webster, Russell Duncan	86 Dufferin Ave., Saint John, N. B.
Wight, Harold George	64 Smithville Crescent, St. John's, Nfld.
Voell, Barry John	600 Beaverbrook St., Fredericton, N. B.

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