

Editorial

In this issue, the Nova Scotia branch of the Trauma Committee of the American College of Surgeons extends a clinical greeting to the newly formed Canadian Medical Traffic Accident Research Foundation. On this continent today, accidents have the third largest death toll, following only cardiovascular disease and cancer. The greater proportion of these are traffic accidents. Because the toll is particularly in the younger age groups, when measured in terms of life years it is even more frightening. At every age, from five years to twenty-four years, our greatest killer is the traffic accident.

In the past, medicine has been satisfied to play its recognized role in helping to heal the victim; but it is coming now to realize that like scarlet fever, tuberculosis, and the plagues of old, the traffic accident is a new, growing, endemic at least as deadly as those met and conquered in the past. Medicine is realizing that its responsibility to its people again does not end with its attempts to cure, but must extend back to the more ideal concept of prevention. This is a problem for many minds and hands—for lawmakers, highway engineers, automotive engineers. Because the traffic accident threatens and destroys human life, it is proper that medicine should take the lead in combating it. Many serious studies of the problem, in all its aspects, are now being carried out. The Canadian Medical Traffic Accident Research Foundation is the first such effort to be made on a national basis. With the help of the whole profession throughout Canada, it should prove to be the greatest.

A.L.M.

HIGHWAY ACCIDENT STATISTICS IN NOVA SCOTIA

One of the essential bases for the study of traffic accidents, by automotive or highway engineer, law-maker, or the surgeon working in trauma, must be in statistics of the accidents. Such a study exposes at once the accident-prone driver. This exposure should lead directly to his examination by psychologist, psychiatrist, and physician to determine the cause of his driving weakness, the next logical step being either the correction of his condition or suspension of his license.

Statistics will also make clear the type of injury to be expected from a specific kind of accident, in passengers of different age groups, and in victims sitting in different parts of the vehicle. The broader, the more complete, and the more accurate the statistical study, the greater is the information to be drawn from it. The more study given to such statistics by the thoughtful observer, the more he will find in them.

One of the most complete statistical surveys of this type is issued monthly by The Department of Nova Scotia. Begun in 1944 by E. S. Campbell, the Administrator of the Motor Vehicle Branch of the Department, it has been in operation ever since. The individual and cumulative data gathered through these twelve years is enormous. One of the first to become acutely aware of the ghastly toll of traffic accidents on this continent, and particularly in his own province, the study instituted by Mr. Campbell was one of the first to be carried out on a province or state-wide scale. Mr. Campbell was determined that at least it could never be said his Department had failed to report on this province-wide disease. Yet, while these statistics are available to all, they have been used little beyond highway offices and police groups. The general public is largely in ignorance of them.

Excerpts are shown here from the regular report for October, 1956. There are fourteen tables in all. **Table 3** deals with the type of accident, (collision with another motor vehicle, with a fixed object, non-collision accident, etc.) **Table 4** classes the victims as driver, passenger, pedestrian, etc. **Table 5** classifies the accidents according to the days of occurrence, and **Table 11** classifies them by the hour of occurrence. **Table 6** records weather conditions; **Table 7** light conditions, (daylight, dawn, darkness without street lighting, etc.) **Table 9** deals with the type of vehicle and its condition. **Table 10** groups victims of fatal and non-fatal accidents by age. **Table 12** considers the road: location, (that is, at an intersection, on a curve, etc.) the road condition, the type of road, and the road's surface, (whether dry or wet, etc.) **Table 13** deals with the driver: the sex, age, driving experience, condition, (whether fatigued, physically defective, impaired by alcohol, etc.) and the license he is carrying.

Table 14 groups these figures into the respective towns and counties of occurrence, beginning with **Annapolis County roads**, and ending with **Westport**. A sudden upsurge of accidents at a particular hour and a particular intersection in Halifax or Sydney, for example, is immediately apparent, and the local police can be so advised.

The value of this study is beyond question, but full use is not being made of it. Conscious of their responsibility as citizens and physicians, the medical profession could well give it careful study, with thought to their peculiar responsibility for the health of the motor vehicle driver.

A. L. M.

TABLE I.

Cause	COMPARATIVE TOTALS											
	No. of Accidents			Same Month last Year			This Year to Date			Same Period last Year		
	No. of Accidents	No. Killed	No. Injured	No. of Accidents	No. Killed	No. Injured	No. of Accidents	No. Killed	No. Injured	No. of Accidents	No. Killed	No. Injured
OCTOBER 1956												
RESPONSIBILITY OF OPERATOR:												
1—Inattention	75	2	38	110	1	15	477	6	82	720	4	91
2—Failure to grant right-of-way	52		8	56		4	339	1	74	323		46
3—Skidding				2			11			19		2
4—Driving on wrong side of road	32	2	11	26		14	210	10	125	203	3	63
5—Operating too fast for conditions	156	8	90	145	8	57	1057	43	538	1009	36	448
6—Reckless driving	27	1		45			5	1	4	7		9
7—Careless backing	17		1	37		6	99	2	26	110		73
8—Inexperience	31		4	58	1	5	196	1	28	347	1	36
9—Failure to signal	26	1	4	26		13	134	6	43	149	4	54
10—Intoxication	58		5	45		4	347		40	385		38
11—Following too closely	4		3	4		2	18		4	9		3
12—Cutting corners	5		4	4		3	21		3	27		2
13—Improper parking	26		3	34		4	127		12	251		26
14—Cutting in				4			3			9		15
15—Passing on wrong side of vehicle				3			3			6	1	2
16—Confusion				2			8			11		3
17—Passing a standing trolley				6			2			7		17
18—Passing on curve	2			2			8			11		18
19—Passing on hill	1			2			6			7		25
20—Trying to beat train										8		20
21—Passing at intersection							2					21
22—Operating too slowly for conditions												22
23—Cranking car												23
24—Hit and run	14		1	52	1	1	93		7	218	4	11
25—Failure to observe Stop Sign	11			24		8	66		11	132		25
26—Improper passing							1			1		26
27—Fatigue	13		9	12		3	97	1	45	99		42
TOTAL	551	14	153	690	11	139	3401	71	1049	4524	53	984
RESPONSIBILITY OF CHILD PEDESTRIAN:												
28—Inattention of child pedestrian	8		8	24		26	60	3	56	90	6	85
29—Stopping from behind objects before looking	7		7				50		49			29
30—Playing on street	28	1	26	23	1	22	123	9	112	209	6	197
31—Coasting												31
32—Stealing ride				1		1	2		2	2	1	1
33—Confusion							5		5	1		1
34—Boarding or leaving trolley car												34
35—Boarding or leaving motor vehicle							1		1	1		1
TOTAL	43	1	41	48	1	49	241	12	225	301	13	285
RESPONSIBILITY OF ADULT PEDESTRIAN:												
36—Inattention of adult pedestrian	13	2	11	16	1	14	58	9	48	78	4	75
37—Stopping from behind objects before looking	3	1	2				14	1	14			37
38—Intoxication				3		3	6	1	5	8	1	6
39—Confusion							4	2	2	2	1	1
40—Boarding or leaving trolley car				1		1				1		1
41—Boarding or leaving motor vehicle										1		1
42—Miscellaneous							1					1
TOTAL	16	3	13	20	1	18	83	13	69	90	6	84
RESPONSIBILITY OF CONTRIBUTOR:												
43—Motorman												43
44—Unknown operator	6			2			26		1	6		44
45—Animal	26		1	34		4	103		16	144		13
46—Bicyclist	5	1	5	5		5	57	2	53	75	1	70
47—Teamster							2					47
48—Gateman or flagman												48
49—Man working on road	1		1				3		3			49
50—Man with push-cart												50
51—Runaway car	11						40		1			51
52—Throwing missiles at car				3			1			3		52
53—Miscellaneous							2					53
TOTAL	49	1	7	44		9	234	2	75	228	1	83
RESPONSIBILITY OF PASSENGER:												
54—Jumping on or off moving vehicle	1		1				7		7	6	3	4
55—Interference with operation	1		2	4		1	9		6	10		5
56—Miscellaneous							3					56
57—Intoxication												57
TOTAL	2		3	4		1	19		15	16	3	9
DEFECTIVE EQUIPMENT:												
58—Steering apparatus	14		7	9		2	67	1	30	48		58
59—Brakes	17		1	32		3	125	1	36	154	1	31
60—Obscured vision	1	1					17	2	3			60
61—Blowout	12		4	15		3	89		27	98		35
62—Insufficient light				2		2				9		2
63—Glazing light	16		3	30		13	64		30	125	1	44
64—Miscellaneous	11		2	18		4	76		11	99	1	26
TOTAL	71	1	17	106		27	432	4	137	533	3	147
MISCELLANEOUS:												
65—Weather conditions	2			3		1	6		1	52		8
66—Road obstruction												66
67—Defective highway	1						2			7		67
68—Ignition of gas												68
69—Overloading										1		69
70—Unprotected railway crossing												70
71—Defective bridge							1			1		71
72—Road construction							1			3		72
73—Fainting on street												73
74—Not known	1						4		1	1		74
75—Carbon monoxide												75
76—Fainting at wheel							2		2	1		76
77—Lost control of car through illness										1		77
78—Slippery highway	2			6		1	32		2	41		13
TOTAL to date	6			9		2	48		6	108		25
Grand total	738	20	234	919	13	245	4458	102	1476	5802	79	1617

ANALYSIS	Operator		Evidence of Driver Intoxication	Road Surface		Alignment		Location		Time		Total Damages	Railway Crossing Accidents
	Licensed	Unlicensed		Paved	Gravel	Curved	Straight	Rural	Urban	Light	Dark		
Recklessness of Operator	909	14	58	420	101	102	182	324	227	308	220	204418	5
Carelessness of Child Ped.	41			30	8	1	20	18	25	38	3	304	
Carelessness of Adult Ped.	16			15	1		6	4	12	8	7	215	
Carelessness of Passenger	2			1	1		1				2	600	
Carelessness of Contrib'r.	54	1	1	36	9	11	25	42	7	19	24	12498	1
Defective Equipment	92	1	2	51	12	20	27	43	28	25	42	35490	1
Miscellaneous	8			1	4	1	3	6		3	3	1964	
TOTALS	1122	16	62	554	136	135	264	439	299	401	301	255481	7

Nature of Injuries	Fatal	Non-Fatal	Total
1—Fractured skull	2	4	6
2—Fractured spine		33	33
3—Other fracture		2	2
4—Concussion of brain	1	2	3
5—General shock with bruises and cuts		96	96
6—Slight shock and shake-up		45	45
7—Internal injuries	15	2	17
8—Other injuries—sprains, dislocations, wrenches etc.		52	52
TOTALS	20	234	254

THE DRIVER	Number of Drivers			Total
	In Fatal Accidents	In Personal Injury Accidents	In Property Damage Accidents	
SEX				
1—Male	25	195	830	1050
2—Female		19	69	88
3—Not stated		4	21	25
AGE				
1—Under 16 years		1	2	9
2—16 to 19 years		3	21	76
3—20 to 24 years		3	43	147
4—25 to 34 years		7	51	246
5—35 to 44 years		3	50	188
6—45 to 54 years		3	31	119
7—55 to 64 years		2	10	68
8—65 and over		3	5	25
9—Not stated			5	42
DRIVING EXPERIENCE				
1—Beginners License		1	11	12
2—Licensed under 3 months		2	22	24
3—Licensed 3 to 6 months		1	5	20
4—Licensed 6 to 12 months		5	1	3
5—Licensed 1 to 4 years		5	60	189
6—Licensed 5 to 9 years		2	29	158
7—Licensed 10 years and over		9	112	468
8—Not stated		8	8	49
CONDITION				
1—Apparently normal	20	192	847	1059
2—Extreme fatigue		6	8	14
3—Physical defect - eyesight				
4— " " - hearing			2	2
5— " " - other	1	1	2	4
6—Confused by traffic		1	2	3
7—Ability impaired by alcohol	2	6	29	37
8—Ability impaired other than by alcohol			1	1
9—Had been drinking	2	9	14	25
10—Not known		3	15	18
LICENSE				
1—Licensed in Nova Scotia	24	199	839	1062
2— " " Newfoundland			2	2
3— " " Prince Edward Island			1	3
4— " " New Brunswick		2	4	10
5— " " Quebec		1	4	5
6— " " Ontario		2	12	14
7— " " Manitoba			2	2
8— " " Saskatchewan			1	1
9— " " Alberta			2	2
10— " " British Columbia			1	1
11— " " North West Territories				
12— " " United States of America	1	2	12	15
13—Military License			2	2
14—Naval License			3	3
15—Air Force License				
16—Other		4	12	16
17—Not licensed		4	21	25
18—Not stated				
TOTAL NO. OF DRIVERS	25	218	920	1163

Head Injuries In Relation To Traffic Accidents

W. D. Stevenson, M.D.

LAST Autumn, at the Dalhousie Refresher Course, we gave a preliminary review of a study of head injury patients, who had been admitted to the Victoria General Hospital during the years 1950 to 1954, inclusive.¹ This survey was undertaken after attending the meeting in Montreal on "Medical Aspects of Traffic Accidents" in May, 1955, and the figures have been analyzed with this particular subject in mind. We will attempt to cover some of the highlights briefly, and then perhaps comment upon some of the important features which came out of the Montreal Conference.

There was a steady increase in the number of head injuries from 111 in 1950 to 229 in 1954. (Table I).² The figures represent head injuries from all causes. Of these, 415 were vehicle accidents, accounting for 54% of the total. There has been no change whatever in our policy of admitting head injury patients to account for this increase in numbers. The accidents seem to have become both more numerous and more severe. We now must be prepared, over a long week end, to handle as many as 18 patients (which was a catastrophic number admitted on the Christmas week end (1955) and resulting in a number of fatalities.) I don't know why we sit back and accept this steady toll month after month. Perhaps it is because we have become hardened to it. Perhaps we are afraid to speak out for fear of criticism, either from the laity or from our medical confreres, or perhaps we are just too inert. It is certainly time that we shed our complacency and take more active and practical steps to meet the problem.

Tables II to VIII are an analysis of some of the statistics. Table II suggests that the driver of the vehicle is less frequently injured than his passengers or the pedestrian. This would seem to bear out the finding in other accident surveys that the most dangerous place in a car is in the front seat alongside the driver. Tables V and VI should, perhaps, receive special mention because they indicate that the nature of the injuries is a changing one, and that many more persons now are admitted with multiple injuries, requiring the services not only of the general surgeon, but sometimes of two or three of the other surgical specialties as well. The problem of the traffic injury thus becomes more complex, and is reflected in a mortality rate which is double that of other head injury patients. Good treatment calls for sound judgment and free consultation. Alcohol was noted on the injured patient in only 42, or, approximately 10% of the patients admitted from vehicle accidents. This is an unusually low figure. Undoubtedly, many of the patients may have been the innocent victims of accidents caused by other persons who had been drinking. Also, there may have been a reluctance to record the fact that alcohol was evident, perhaps because of the social or legal implications. With advances in surgery, many of the more seriously injured patients are being kept alive, and

1. This Survey was carried out by Mr. J. B. Steele and Mr. C. M. Sebastian, Medical Students, with assistance from the Dalhousie Post Graduate Committee.

2. In 1955 there were 275 patients. In 1956 there were 210—a drop of 23% from the 1955 figure, which can be hoped is a reflection of the great publicity given the problem and the increased efforts of those interested in traffic safety.

the need for expanded rehabilitative services is steadily increasing. I need not say more at this point in regard to the value of a well integrated program of rehabilitation, both to the recovery of the individual, and to his home and community.

The medical profession, until very recently, has neglected the preventive aspects of medicine in so far as traffic accidents are concerned. It might, perhaps, be worth while to attempt to summarize briefly some of the methods in which we, as practising doctors, might actively participate in this preventive field. We know that it is important both to try to prevent accidents and to prevent the injuries resulting from them. Our first role might be in the daily contact that we have with our patient—the role of an educator, in acquainting him adequately with the knowledge of any factors in his physical condition, or in the drugs or treatment which he is taking, which might influence his driving ability. This is an important role and one in which I am afraid many of us are lax. We are inclined to say "Leave it to the authorities to decide whether the patient is physically fit to drive or not." Yet we are bound by the ethics of our profession not to disclose to the authority the defects and treatments of our patient even though they might, in our opinion, seriously impair that patient's ability to drive. Until our driving laws incorporate what the medical profession would consider to be adequate safeguards, then it is the moral duty of the practising doctor, both to his patient and to the community, to point out such dangers to the individual himself.

Secondly, we can work with Government licensing agencies to produce adequate standards for driving licenses, both in terms of physical and psychological factors. We can also work with them towards developing a standardization, not only for one province, but for the nation as a whole.

Thirdly, through investigation of accidents and injuries, and in co-operation with other groups, we can do more research into the causes of specific accidents. The accidents themselves can then lead to preventive measures. Such a study must include investigation at the scene of the accident, the circumstances of highway, weather, etc., the types of vehicles involved, and all the persons involved—not only the injured. This may result, for example, in the earlier discovery of the accident prone driver, and expose physical or psychological defects which can then be adequately treated.

Fourthly, we can, both through example and, again, the process of education, attempt to encourage the use of many of the safety devices now available, and known to be useful and effective agents in preventing injury. For example, how many of us here have equipped our cars with safety belts or other optional safety features which are available at the present time. If I might answer this question, the only physician, to my knowledge, who has done so, did it after he recovered from an almost fatal car accident. He had to learn the hard way. Must we all?

TABLE I
HEAD INJURY ADMISSIONS

1950.....	111
1951.....	118
1952.....	143
1953.....	174
1954.....	229
TOTAL.....	775

TABLE II
PERSON INJURED

Driver.....	76
Other Occupant.....	109
Pedestrian.....	123
Not Recorded.....	89

TABLE III

	M	F
Sex.....	596	179
Approximately 3 to 1.		

TABLE IV
Incidence of Head Injuries in relation to age groups

Age Group	No. of Patients
0 - 9	101
10 - 19	145
20 - 29	191
30 - 39	117
40 - 49	77
50 - 59	41
60 - 69	33
70 - 79	18
80 plus	5

TABLE V
MORTALITY

775 Cases	40 Deaths
Rate 5.16%	
36 Died of Head Injuries	
24 Died in 48 Hours	
38 Died in First 7 Days	
27 were Traffic Accident Deaths	(67.5%)

TABLE VI
ASSOCIATED INJURIES

Face.....	174
Upper Extremities.....	100
Lower Extremities.....	101
Spine.....	27
Chest.....	41
Abdomen.....	14

TABLE VII

HEAD INJURIES.....	775
Skull Fractures.....	192
Depressed Fractures.....	53
C.S.F. Fistulae.....	19
Surgery.....	312

TABLE VIII
COMPLICATIONS

Extradural Hematoma.....	12
Subdural Hematoma.....	26
Meningitis.....	2
Cranial Nerve Paralysis.....	24
Convulsions.....	23

Facial Lacerations

Arthur L. Murphy, M.D.

MULTIPLE injuries are the common lot of the traffic accident victim, and the face rarely escapes abrasion or laceration. This may be associated with facial bone injuries, from a simple fracture of the mandible or malar to an extensive smashing of the whole bony structure from brow to chin. More often the wound is minor, compared with the associated life-threatening injuries to skull, chest, pelvis, or extremities.

The surgeon's first concern is to save life. Presented with a case of serious concussion or shocking chest injury, he will naturally concentrate first on the survival of his patient, and the lesser injuries, either in the form of minor fractures or facial wounds, get secondary treatment. This is good surgical practice. However, it is common experience to see the traffic accident victim make a complete recovery from his major injury only to carry, for the rest of his life, a permanent disability in the form of an unstable ankle, an impaired hand, or a scarred face, which, if not limiting function, may well distort his inner self.

Facial wounds, hastily or inadequately repaired following their occurrence, can be dealt with by secondary plastic procedures. But surgically, cosmetically, and economically, if the general condition of the patient permits, the best time to do the definitive repair is at the first operation. Because of its rich blood supply, facial skin has a great viability and resistance to infection. Torn fragments, made up of mucosa, muscle, and skin, and hanging by the thinnest pedicles, will often survive if replaced promptly and with meticulous care. A secondary graft, no matter how beautifully executed, can not take their place.

When there is actual tissue loss below the level of the malar bone, the skin of the neck often serves ideally for a simple sliding graft. Particularly in middle age and beyond, it is relaxed. An extension of the traumatic wound by surgical incision down onto the neck will permit closure of large defects without undue stress. In our work on elderly patients with oral and facial cancer, we have learned that use of neck skin in this way often gives a simpler and better cosmetic results than do more elaborate pedicle flaps from other areas.

First step in the repair is cleansing of the skin about the wound with white soap and water. The wound itself is washed with saline. After debridement and excision of lacerations, if this is to be done, it is washed again. Other than soap, no antiseptic is used, either on the face or in the wound.

Facial wounds are most commonly inflicted by the steering wheel, the dash board with its projecting knobs, the windshield, the back of the front seat, or any nearby object, if the patient is hurtled out, or is a pedestrian. The modern windshield, if broken right through, can cut terribly, but usually it crumbles under impact and the wound it produces, like the others, is of a tearing, contusing nature. Good repair of such a wound demands excision of its serrated edges, and, where it will not produce too great a loss of skin, the conversion of a jagged wound to a curved or straight incision.

To do his excision the surgeon should use a sharp scalpel in preference to scissors, with which it is almost impossible to produce an even cut, giving a hair-line scar. In so far as possible, the excisions should run with the lines of stress

of the face. Remembering the circular muscles about the mouth and eyes, the rest of these lines can best be illustrated by having the patient smile, or if he prefers, frown, before he is anaesthetized.

This is also the time to check the function of the facial nerve. Severance of the smallest twig will result in some region of permanent muscular paralysis. If there is nerve injury, the cause should be sought through the wound. Even the smallest fibres should be recognizable by their appearance, their direction, and their response on squeezing them gently with a mosquito forcep. They may be only contused. If cut, an attempt should be made at the time to suture them, or at least to put their ends in approximation by suturing the tissues about them. Pre-operative check on facial nerve function also serves as a reminder to guard against its injury during the facial repair.

If the wound is in the region of the parotid duct, examination should be made to make sure of its continuity, either by search for it in the wound, or by canalization of the duct, from the mouth. If severed, it may be repaired, or the proximal end turned in and sutured to the buccal mucosa. To leave it cut and unrecognized in the wound will at least result in a fistula, and more often in a breakdown of the repair.

Whenever possible, the excision of irregular lacerations should be between elliptical incisions of equal length. Otherwise, there is a risk of puckering of the final scar. In opposing the edges, the central suture should be placed first. It should be of the finest material—5-0 Dermalon or its equivalent—and it should go through all layers of skin and subcutaneous tissue. The wound is then quartered with sutures, again taking care that approximation is perfectly even. Next stitches are placed so that, under the most minute inspection, every millimeter of the opposing edges is closely approximated. Suture material of this size leaves almost no visible mark. In the face, at least half of the sutures may be removed at the end of forty-eight hours, and all but a few mainstays after seventy-two. Sutures removed at forty-eight hours leave no mark. Even after remaining four to five days the tiny scar of a 5-0 suture is almost imperceptible.

Except during sleep, when it may be necessary to protect them from the abrasion of the bedclothes, the wounds are left undressed.

When the wounds are extensive, from skin to oral mucosa, it is best to allow nothing in the mouth but a saline wash until primary healing has occurred. Nutrition is maintained through a plastic feeding tube, passed by way of the nose.

If the wound has extended into the mouth, we use antibiotics prophylactically. If not, we feel it is better to use them only if signs of infection occur.

Roentgen radiation is used routinely as a prophylactic against keloid. Dosage is small, and one or two treatments are sufficient. If not used, and keloid does appear, radiation is of little therapeutic avail. However, excision of the keloid and the application of roentgen rays to the new wound will almost surely prevent keloid recurrence.

Good primary repair of facial lacerations will give the most satisfactory results. If secondary repairs are still necessary, they will at least be greatly simplified by the more serious efforts at the first operation.

Chest Injuries

E. Paul Nonamaker, M.D.

IN discussing chest injuries in relation to traffic accidents I would like to emphasize the crushing type of injury which is the common one seen in traffic accidents. The patient frequently has other major injuries such as head injuries and fractured limbs. Unless one carefully looks for evidence of chest injury it may be unnoticed for some time and, should the mechanics of respiration be disturbed, shock and collapse will develop much more quickly. If the physical findings leave any doubt, chest X-ray must be done and corrective measures taken at once.

To illustrate these corrective measures let us consider a serious case of crushing injury admitted earlier this year on Surgery D, Victoria General Hospital. On admission this patient was semi-conscious. Marked dyspnoea with coarse bubbling rales was present. Examination revealed a floating portion of the left thorax with paradoxical respirations. X-rays revealed a bi-lateral pneumothorax with fluid level on the left side.

In a case like this treatment must begin immediately because there is great interference with the mechanics of respiration which will soon prove fatal.

How can one best attack this problem?

(1) A tracheostomy must be done immediately—and the bronchi sucked out as often as is necessary until the lung is dry. Even if the patient be fully conscious this is a necessary step in the severe cases such as this, for the patient is unable to keep the bronchi clear because of pain and an unstable chest wall.

(2) The pneumothorax must be now corrected. Through a chest canula a small catheter or polyethelene tube is inserted into the pleural cavity. If no canula or trochar is available a large bore needle may be inserted and strapped into place. The tube or catheter is then connected to a two or three bottle suction apparatus. This will relieve the pneumothorax and allow the lung to expand. It must be maintained until such time as there is no air leakage. This can be determined by clamping the tube from the chest for 24 hours and checking with X-rays before and after clamping.

(3) The floating portion of thorax must be stabilized as the paradoxical movements of this portion of the chest wall diminish respiratory exchange. There are two methods of doing this:

(a) By use of pads and adhesive the loose portion of the chest is strapped in the depressed position. The objection to this is that it decreases the volume of the thorax and reduces pulmonary function. This method also leaves the patient with a deformity of the chest.

(b) By use of traction to hold the chest wall in its proper position—towel clips may be used for this purpose and are attached through a pulley to a five pound weight. Traction must be maintained for two or three weeks.

(4) The haemothorax may need treatment, though it rarely causes great concern. If major vessels are torn the patient will be dead on admission and if not, the bleeding will usually stop. However the blood should be aspirated within 48 hours as it may form a coagulum on the pleura and interfere with

respiration. If this occurs, a decortication may be necessary later on. Any excess blood, causing pressure, will be removed by the suction apparatus.

I have briefly discussed the more specific measures of handling a severe chest injury. General measures such as the treatment of shock and prevention of infection are also important.

Less severe chest injuries will require modification of the above measures according to the circumstances. However, we must remember that a simple fractured rib can cause death by a tension pneumothorax.

It has been said that any patient with a chest injury who arrives at the hospital alive should stay alive. Within reason, this is correct.

PSYCHIATRIC TRAINING — DALHOUSIE UNIVERSITY

Opportunities are available for psychiatric training approved by the Royal College of Physicians and Surgeons, (Canada) in the Department of Psychiatry of Dalhousie University and affiliated hospitals. The usual course of training consists of four years, two in an intensive teaching program at the University centre and two in affiliated institutions in the Atlantic area with University supervision. The program includes supervised clinical work in adult and child psychiatry with experience in special areas of the specialty. A great emphasis is placed on individual supervision of the trainee, especially in the area of psychotherapy. Bursaries may be arranged through the Departments of Health of the Atlantic Provinces. Applicants must have graduated from an approved medical school and satisfactorily completed one year of general internship.

Applications should be addressed to Dr. R. O. Jones, Professor of Psychiatry, Dalhousie University, Halifax, N. S.

FOR SALE

General practice with residence and furnished office located in Annapolis Valley town. Apply to Executive Secretary, The Medical Society of Nova Scotia, Halifax, N. S.

Abdominal Injuries

G. Watson Sodero, M.D.
Sydney, N. S.

A TRAFFIC accident causing intra-abdominal injury may at the same time cause a wound of the abdominal wall, in which case it is referred to as an "open abdominal injury;" or, there may be no associated wound, when it is a "closed abdominal injury."

I would like to dismiss the open injuries by saying that when they occur the indication for operation is already present. As soon as the patient has been treated for any shock, and prepared, operation should be performed, the wound excised, and if penetration of the peritoneum has occurred, a thorough intra-abdominal exploration should be done. The practice of probing these wounds with a haemostat in the Out-patient Department to try to determine their depth and direction, should be abandoned.

Hereafter this discussion refers to "closed abdominal injuries." They can be divided into three groups: (1) Injuries to solid viscera; (2) injuries to hollow viscera; (3) injuries to supporting structures.

1. Injuries to solid viscera—kidney, liver, spleen and pancreas. In these cases the symptoms are produced by the associated shock, and by haemorrhage. The haemorrhage may be: immediate and severe; immediate but slow and gradual; delayed for hours or even days.

In the case of the kidney there may also be extravasation of urine.

In the case of the pancreas there may be release of pancreatic ferments, and the production of a state resembling acute pancreatitis; or the pancreatic injury may only become evident weeks later by the development of a pancreatic pseudo-cyst.

2. Injuries to hollow viscera—e.g. the stomach, duodenum, small intestine, large intestine, gall bladder and bile ducts, and the urinary bladder. In these injuries symptoms are due to the associated shock plus peritonitis, which may develop at once, or after a lapse of a few hours.

3. The third type of injury is to supporting structures, e.g. the mesentery and the broad ligament. Tears of these structures cause intra-abdominal haemorrhage, and if the tear of the mesentery is parallel to the long axis of the bowel, gangrene of a segment of bowel can occur.

These cases are probably first seen in the Out-patient Department. The first step should be to get the patient undressed and do a thorough physical examination. The only circumstance in which this examination should be delayed is when the patient's shock is so great that it demands immediate treatment. Moreover, a dated and signed record should be made of the findings. This serves as a basis for comparison in cases that require observation, and is also of value if legal complications develop.

Next, the patient's degree of shock should be assessed and treated. In abdominal injuries, as in limb injuries, blood loss by haemorrhage is the chief factor determining the circulatory state, in the early stages. Therefore, the giving of blood is the chief factor in resuscitation. There is a saying about these patients—give blood fast enough, and give enough—to restore blood volume and blood pressure. Usually, the first step is to start an intravenous—

with a wide bore needle—using dextran or plasma, if possible; at the same time blood specimens are taken for Hgb. and hematocrit estimations, and for cross matching.

Next, the question of sedatives: They should be withheld if possible, until one can arrive at some conclusion about the patient's injuries. If the patient's pain makes it imperative to give something, small doses are preferable, and the patient should be allowed to recover from the effect of one dose before giving another, so that symptoms will not be masked.

If G.U. tract damage is suspected, and the patient is unable to void, or if the patient is unconscious or deeply shocked, a soft rubber catheter should be passed into the bladder. If the urine obtained is clear, it is good presumptive evidence that there has been no G.U. tract damage. The presence of blood, either gross or microscopic, suggests G.U. tract damage.

X-ray findings may suggest intra-abdominal injury, e.g. fractured ribs suggest possible damage to kidney, liver, or spleen. A fractured pelvis means possible damage to bladder or urethra. A fractured spine may be associated with retro-peritoneal haemorrhage which may cause tenderness and rigidity of the abdominal wall, simulating intra-abdominal injury.

If we feel fairly certain that there is an intra-abdominal injury, operation should be done as soon as possible, but in the diagnosis of intra-abdominal injury there are two pitfalls: First, not being aware that trauma to the abdomen from which the patient appears to recover quickly may be associated with intra-abdominal injury - e.g., patients have been allowed to go home after a cursory examination, only to return hours or days later in shock from internal haemorrhage; second, the case with multiple injuries, e.g., contusions, lacerations, fractures, and perhaps head or chest injuries. These lesions demand our immediate attention. Also, they can account for the patient's degree or state of shock. Thus one's attention may be drawn away from the possibility of intra-abdominal injury. Moreover, the blood and other transfusions, given to combat this shock, mask the immediate clinical evidence of intra-abdominal bleeding.

It is only by adopting a routine policy of careful and repeated examinations of all patients during the first forty-eight hours that these doubtful or occult cases of intra-abdominal injury can be diagnosed early. Moreover, it is desirable that during this period some one person should be responsible for the case, and for overseeing all treatments. Thus, changing physical signs can be recognized at the earliest possible moment. One occurrence that suggests intra-abdominal haemorrhage is when the patient with multiple injuries who has been resuscitated from his immediate shock, after a period lapses again into shock.

During this period of observation, although further X-rays and blood counts may help, the important factor is repeated careful clinical examination of the abdomen, following the old routine of inspection, palpation, percussion, and auscultation. When there is a question of organic damage, careful prolonged auscultation of the abdomen should be carried out. A "silent abdomen" suggests soiling of the peritoneal cavity and, if associated with tenderness and rigidity, demands exploration.

If even after this period of observation there is still doubt, an exploratory laparotomy should be done. In these cases it is better to be safe than sorry.

The pre-operative treatment is the treatment of the patient's shock, and the restoration of blood volume. A Levine tube should be passed into the stomach and continuous suction applied. Blood is usually required during the operation. Skilled anaesthesia is most important.

At operation, the incision should be a median or paramedian one, depending on the site of suspected trouble. If there is no definite clue, a small upper midline incision may be used.

If the peritoneal cavity contains blood, examine the spleen, liver, and mesentery.

If gas escapes on opening the peritoneum, or if the peritoneal exudate suggests rupture of a hollow viscus, a methodical examination of the G.I. tract must be done. Ten per cent of intestinal injuries are multiple, and the small intestine is injured ten times more often than the large.

Do not forget the possibility of injury to the pancreas, which is explored through the gastro-colic omentum; or of retro-peritoneal rupture of the bowel, e.g. the duodenum, ascending colon and the descending colon.

Tears of the spleen are treated by splenectomy. Tears of the liver are treated by a combination of packing with absorbable haemostatic gauze such as gelfoam, plus retention sutures. Omental or muscle grafts may also be used. Gauze packing should not be used as fatal haemorrhage has followed its removal. The area should be drained.

Tears of the mesentery, if parallel to the bowel, and more than two inches long, may require resection of the related intestine.

Tears of the gall bladder should be sutured, and the gall bladder drained as in cholecystostomy. Tears of the cystic duct are treated by removal of the gall bladder. Tears of the main ducts are repaired over a T tube, the vertical limb of which should be brought out through a separate opening, and not through the site of the tear. These biliary cases should be drained.

Tears of the pancreas cause severe pain and shock, and are frequently associated with injury to other abdominal viscera. The emergency treatment consists of: evacuating haematomas, controlling haemorrhage, and draining the area. Suturing is usually impossible. Either simple Penrose or a sump drain may be used.

Tears of the small bowel should be closed individually in such a manner as not to constrict the lumen. If simple closure can not safely be done, resection will be necessary.

Injuries of the colon tax the judgment and experience of the surgeon. Small tears may be repaired by simple suture plus an omental graft, or exteriorization may be safer. Drainage is safer in all these cases. Injuries to the extra peritoneal portion of the colon should be treated by proximal colostomy, suture of the rent in the bowel, and drainage of the contaminated extra peritoneal tissues.

Injuries of the kidney do not as a rule require operation, but there are exceptions. If haematuria is severe or unduly prolonged, or if extravasation of urine or blood occurs, operation will be necessary.

The principles of treatment of rupture of the urinary bladder are: repair of the tear, diversion of the urinary stream by cystotomy, and drainage of the spaces into which urine has extravasated.

Knee Joint Injuries

Basil K. Coady, M.D.

WITH a view to determining the incidence of knee joint injuries due to automobile accidents, a five-year period was studied at the Royal Canadian Naval Hospital, Halifax, N. S. In each instance the individual was riding in the vehicle.

It was found that there were 122 cases with multiple injuries, and 86 with single injuries. Of these, 46 were injuries to the knee joint and, as 6 cases in the knee joint group were double injuries, there were, in all, about 40 individuals of 200 who had knee joint injuries. It would, therefore, appear that in a group of accidents, about 20% of people will sustain an injury of some degree to the knee joint.

Of the injuries to knee joints, specific damage was as follows:

1. Fracture of the patella—7.
2. Injuries to ligaments.—10.

Of the injuries to ligaments:

- a. The medial collateral ligament was torn in 6.
 - b. The lateral collateral ligament was torn in 3.
 - c. There was 1 cruciate ligament tear.
3. Perforating injuries into the joint occurred in two instances and there were 14 injuries of the menisci, proven at operation.
 4. In addition to these there were 13 which were unclassified internal derangements which cleared up with simple management and required no surgery.

Of all these injuries, the so-called internal derangements are probably the most difficult to diagnose. However, immediate diagnosis is not often essential and one has considerable time in which to reach a proper diagnosis and deal with the condition as indicated. As noted above, a number which appear to be internal derangements will get well without further interference. Again there will be the specific injury to the meniscus, and as the history is usually very poor, this will require repeated examinations and considerable study. One method often used in arriving at a diagnosis is to have the individual use the joint. Frequently in these circumstances one is able to arrive at a diagnosis because of events resulting, such as locking and giving way.

With regard to injuries of the collateral and cruciate ligaments it should be emphasized that these may vary from a simple sprain to a gross tear, and that it is frequently difficult to diagnose even the gross tear because of the pain experienced during examination. In this event it may be advisable to give a general anaesthetic to make the accurate diagnosis on which the proper treatment depends. Treatment of the complete tear is immobilization in a full length cast for 3 months with at least 15 degrees flexion at the knee joint. Less serious sprains and incomplete tears will require shorter periods of immobilization.

Fracture of the patella is dealt with according to the type, whether it is simple, compound, or comminuted. Immobilization is, or may be, all that is

required in a simple fracture. A compound fracture of the patella is dealt with on general surgical principles. When comminuted, the usual treatment is to excise the patella.

With the increasing instance of automobile accidents and at increasing speeds, resulting in greater trauma, it is probable that gross injuries of the knee joint and perforating lesions involving the joint cavity, will become commoner. It is with these knee joint injuries I wish to deal in this brief discussion.

It has been the custom to teach that a particularly high standard of aseptic technique is essential to knee joint surgery, because of the danger of contamination of tissues with a low resistance to infection. This is so because the danger to life is greater than with an infection of any other joint, and also because an ankylosis is a tragedy. However, it is not correct to consider the knee joint as defenseless. There is ample evidence, clinical and experimental, that the innermost components of the joint, the synovial membrane and the synovial fluid, as well as the articular cartilage, have considerable powers of resistance, possibly the greatest resistance of any joint. There are several points which appear to favor this line of thought. The structure of the knee joint being a closed sac and having no tendons immediately related to it, tends to give it a form of isolation from more superficial injuries. Also, it appears that there are active anti-bacterial properties in synovial membrane and fluid. The synovia reacts, as does any other tissue, to infection with dilatation of blood vessels, with the formation of plasma, infiltration by leucocytes and macrophages. It is likely that this accounts for the frequency of sterile cultures when one suspects an infected joint. Also, it has been found that the synovial membrane is permeable to molecular solutions. This is particularly so in the case of sulfa drugs, although unfortunately not with penicillin. The articular cartilage itself is able to resist several days of persistent and intense infection, and yet recover.

Wounds of the knee joint may be divided into two great groups—the non-penetrating and the penetrating. In the non-penetrating we pass from a mild blow to gross injuries with some degree of disorganization of the joint; for example, ruptured cruciates, torn cartilage or possibly torn ligaments. In each instance there will almost certainly be an effusion, and in some, hemarthrosis. One point should be made here: the joint should be aspirated as necessary in order to keep the effusion or the hemarthrosis at a minimum. The reason is that blood in the joint or effusion causes edema of the surrounding supports and leads to relaxation of the ligaments, instability and quadriceps atrophy, with the vicious cycle which follows. For similar reasons, if operation is indicated in fracture of the patella, it should be done early before the edema which follows the injury has permeated all the tissues and made them less useful in doing the repair.

The second great group is the perforating injury, which may be a simple stab-like perforation or a wound gaping and grossly contaminated. There are two schools of thought with regard to treatment.

The first believes that all joints should be closed provided the case is received at surgery up to 24 hours after the original injury. The treatment is to close only the synovial layer leaving the extra capsular tissues open. Those who follow this treatment also use frequent aspiration to keep the effusion or

hemarthrosis at a minimum. The second view is that, even if possible, the joint should not be closed because under these circumstances the synovial fluid becomes stagnant and loses its bactericidal power. It therefore should be allowed to drain. These cases are treated by dressings and immobility.

It is a matter of personal judgment as to whether the joint is treated by the closed method or the open. In the relatively early case with a penetrating wound, when the contamination is not gross, it is almost certainly wiser to excise the wound and close it, leaving penicillin and streptomycin in the joint. It is followed with careful watching, treating with frequent aspirations and installations of penicillin or whatever drug seems advisable, based on culturing the wound should it become infected. There will be a group of wounds—penetrating wounds—which are obviously grossly contaminated and in which, because of the many difficult spaces to reach in the knee joint, are difficult or impossible to cleanse properly. These wounds should be irrigated with copious amounts of saline and drained. One method, which has been used successfully, is to put a large bore needle in the suprapatella pouch and to run in a continuous drip of penicillin solution which makes its exit from the wound. When satisfied that the infection is no longer active, measures to close the joint may be taken. In conclusion: in all wounds of the knee joint where infection is a possibility, immobilization should be followed strictly. Various methods are advocated. Some advise a spica. However, immobilization in a Thomas splint or in a full length plaster, which reaches as far as possible up the thigh, is probably adequate. When plaster is used, the wound may be exposed by a window.

Statistics on admissions to the Royal Canadian Naval Hospital are included with the kind permission of Surgeon Captain F. G. MacHattie, R.C.N. Command Medical Office, Atlantic Coast.

Traumatic Shock

Carl Stoddard, M.D.

CLINICALLY, the problem of shock is most complex, for seldom do we see pure haemorrhagic shock. Usually the injured patient not only suffers the loss of blood externally and the passage of fluid into the injured member, but suffers pain, anxiety, extremes of temperature, tissue maceration (and the subsequent release of toxic materials) as well as the influence of all sorts of drugs and medications that those in charge may see fit to administer.

As increasing experimental and clinical facts have been gathered it has become apparent that the syndrome known as "shock" is not a specific clinical entity but has many origins leading to a fundamental physiological defect.

Acute peripheral circulatory failure is characterized by a disparity between the circulating blood volume and the capacity of the vascular bed. Traumatic shock represents a wide spectra of tissue injury ranging from division of a vascular trunk to massive destruction of muscles and, as has been mentioned before, such trauma is attended by pain, fear, exposure, transport, and other exhausting stimuli, all acting in the direction of deterioration.

If one wishes to picture the whole phase of shock from beginning to end one must consider, besides haemorrhage and trauma, burns with loss of plasma, bacterial infection, dehydration with loss of electrolytes, and the effects of surgery and anaesthesia. The picture of clinical shock is variable, but certain findings are constant.

There is a close association between arterial blood pressure changes and the reduction in the blood volume.

The size of the wound, and systolic blood pressure, give an idea of blood loss and lowered blood volume. The larger the wound the greater the blood loss.

The volume of tissue damaged is judged by extent of the wounds, taking into account such obvious signs as abrasions, bruising, tearing, and destruction of the soft parts and fractures of bones.

As a guide to blood loss, small wounds rarely lose more than 20% blood volume, moderately large wounds 20 — 40% and large wounds 40 — 50% or more.

Also, blood loss varies with the parts of the extremities involved; for example, the thigh and scalp, being more vascular, will lose more blood than the foot or forearm.

In general, if the blood pressure is 100 mm.Hg., the blood volume is below 70% of normal.

The combination of fast pulse, pallor, coolness of skin, sweating, cyanosis and air hunger are a guide, but these factors may all be influenced by pain, fear, and environmental temperatures. Transfusion reactions may play a role in increasing the signs of clinical shock. Probably the most important aspect of the shock state is the direction of the change of the clinical findings, whether toward deterioration or improvement. Here the systolic arterial pressure remains one of the most accurate and readily available criteria.

To return to blood volume changes, the reduction of blood volume is the most common initiating factor as seen in trauma. This may be due to:

- (1) Massive haemorrhage.
- (2) Loss of whole blood into sites of injury.
- (3) Loss of plasma and blood into burned and injured tissues and so on.

Most writers feel that there is a direct relationship between reduction in blood volume and the severity of shock.

Along with reduction in blood volume there is a resultant reduction in cardiac output which indicates failure of venous return. Peripheral vasoconstriction tends to compensate for decreases in blood volume and cardiac output, but this is also very variable and fails during the irreversible stage. Vasoconstriction has an unfavourable influence by decreasing blood flow to vital organs such as liver, kidneys and brain.

The direction of shift of the haemotocrit will depend upon the relative losses of plasma and red blood cells, haemoconcentration as in burns and trauma, and haemodilution following haemorrhage.

Treatment of Shock

The rapid restoration of blood volume is the main goal of therapy in traumatic shock. Whole blood remains the most effective "blood volume expander," not only because of the property of oxygen and carbon dioxide transport but particularly of the space-occupying function of the red blood cell. In moderate shock the intravenous route is satisfactory, the blood passing via the right heart to the pulmonary circulation where it is oxygenated and thence to the systemic circulation.

In profound shock, where cardiac function is impaired, blood often cannot be delivered by the heart to the vital centres and in this group intra-arterial transfusion has been effective in restoring arterial pressure to the heart, brain, and kidneys.

Plasma, in severe burns particularly, has been effective, although there is a risk of serum hepatitis. Plasma, also, has very little oxygen carrying capacity and is not a substitute for whole blood.

Serum albumin is very useful in the emergency treatment of shock.

Plasma expanders such as Dextran, Polymethyl Carbohydrate and Subtosan (P.V.P. Polynrylpyrrolidone) all are good to increase blood volume in an emergency and are effective in maintaining blood volume. Their rate of excretion by the body is not known exactly yet but they are quite safe, often life saving, but do not replace the need for whole blood, having no antibodies or clotting properties.

As has been stated, blood transfusions should be given as soon as possible, and the first pint should be given in 5-15 minutes, or till rise in blood pressure is satisfactory; then the rate of flow is slowed. The amount of blood to be transfused depends on the blood pressure and the blood volume desired. If the blood pressure has been raised to 100 mm. Hg. about 70% of the blood volume has been restored. Further amounts should be given in order to elevate it to about 90%. Further transfusions may lead to fresh bleeding in certain cases. As a rough rule, in a patient with a blood volume of 60%, one or two

pints of blood or serum, or two pints of plasma would be required to raise the blood volume to 70% and restore the systolic blood pressure to 100 mm. Hg. When this has been done, a further 2-3 bottles of blood, or four pints of plasma, are required to raise the blood volume to 90%. Others who have very large wounds and those in whom treatment has been delayed will need larger and larger amounts of blood.

The influence of sedation, pain, and anaesthesia on the traumatized patient must be considered seriously as to their deleterious effects. Pain may increase the state of shock and should be controlled with small amounts of sedative. Morphine given subcutaneously or intramuscularly may not be mobilized because of peripheral vascular collapse. Not until the individual is resuscitated will the accumulation of administered drugs be mobilized, then evidence of morphine poisoning or overdosage not infrequently develops. Nallymorphine will reverse the effects of morphine. Morphine depresses respiration, decreases oxygen consumption and lowers the blood pressure. It should be given in small doses intravenously.

Anaesthetics contribute significantly to the vascular component of the shock syndrome. They interfere with the normal readjustments mediated via neurogenic and humoral pathways and effect the physiological state of vascular musculature at end organs. This has been proven by readjustment of the peripheral circulation on unanaesthetized subjects who can tolerate more severe injury and respond more completely to corrective therapy.

Chlorpromazine protects the animal against the lethal effects of drastic surgery by relieving extensive constriction of vessels leading into the capillary bed. Capillary blood flow is maintained. There are no changes in respiration even at low blood pressure levels and the response to replacement therapy is more prompt, complete and sustained. Further investigation is now being carried out in order to assess the value of this drug in shocked cases.

Hypotensive anaesthesia with hexamethonium compounds and Arfonad tend to pool the blood in the vascular bed and may alter the physiology of vital organs; namely the liver, brain, heart, and kidneys. It is considered a dangerous drug to use in shocked cases.

Hypothermia anaesthesia with the body temperature lowered to nearly 26 degrees C has been used fairly extensively in operative therapy of severe head injuries and other trauma. Decreasing the temperature lowers the metabolism of the patient, decreases intracranial pressure and increases the body's defences against the onslaught of surgery and anaesthesia. The anaesthetic of choice is that agent which is the least toxic to the vital organs of the body, promotes a smooth induction and maintenance with adequate amounts of oxygen, and gives a rapid, smooth recovery with little or no vomiting.

Ether and chloroform can be condemned as they have a toxic effect on the liver and kidneys and decrease renal blood flow. Spinal anaesthesia is to be condemned in most cases as the resultant fall in blood pressure from vasodilation of the vessels of the extremities etc., may increase the state of shock present or impending. Local anaesthesia and nerve blocks are the anaesthetics of choice when possible. Small amounts of pentothal sodium with 50%-60% nitrous oxide and oxygen or cyclopropane anaesthesia are the general anaesthetic agents of choice as they fulfil as nearly as possible the needs of the shocked

patient. Adreno-cortical hormones and cortisone have been widely investigated and have been found to be of little or no benefit, particularly in haemorrhagic shock. Noradrenalin has been used to sustain blood pressure till adequate replacement therapy has been established and is of value.

The question is often asked regarding the proper time to operate on the shocked patient. It is needless to say that in most cases surgery should be delayed till the patient is properly resuscitated. If transfusion is properly carried out, in adequate amounts, most patients will be well resuscitated within an hour or so of admission.

In cases with very large wounds it may be necessary to operate earlier because of bleeding or failure of proper response to transfusions. Nothing is to be gained and much may be lost by delaying operations on such patients. There is a period of a few hours after injury when the condition of most patients with very large wounds can be improved by transfusions and the best chance of survival is offered by operating within that period, even though the blood pressure is low.

Here the best results are obtained by early operation following early rapid and adequate transfusion therapy. Patients have been given three and four times more than their normal blood volume in order to restore adequate systolic pressure and blood volume.

Summary

(1) The diagnosis of traumatic shock in its various stages may be complicated by many contributing factors such as haemorrhage, wounds, burns, infection, dehydration, anaesthesia and surgery, plus neurogenic factors. Each has to be evaluated in the light of clinical experience.

(2) The size of the wound and the systolic blood pressure are fairly accurate clinical guides to the loss in blood volume, taking into consideration the complicating effects of abdominal and thoracic injuries.

(3) The treatment is early, rapid, and adequate blood transfusions.

ERRATUM

In the list of those receiving Certification in Paediatrics from the Royal College of Physicians and Surgeons of Canada printed in the February issue the name of Doctor Bruce St.C. Morton (Dalhousie 1950) of Halifax was inadvertently omitted.

GENERAL PRACTITIONER REQUIRED

General Practitioner required to practise in association with long established group in Dartmouth. Applications from this year's graduating class invited. Applications should be addressed to: The Business Manager, Dartmouth Medical Centre, Dartmouth, N. S.

Multiple Fractures

A Case Report — Edwin F. Ross, M.D.

This 21 year old, white male patient was admitted to the Victoria Public Hospital, Fredericton, N. B. on December 11, 1954, having sustained multiple fractures. A steeplejack by occupation, he was working on a high stack when he lost his balance and hurtled toward the ground. About midway through his fall, his body struck a scaffold built of 2" plank, the impact of which splintered the scaffolding like matches. He finally struck, among a pile of bricks, — the total distance of his fall being approximately 150 feet. Admission x-rays at the time disclosed that the patient had (1) fractured femora, (2) fractured right tibia and fibula, (3) fractured right radius and ulna. He was transferred to the Victoria General Hospital in a double spica on June 1, 1955. At this time, x-rays of his fractures were carried out and showed:

- (1) fracture of the left femur with gross displacement without union. (Fig. 1).
- (2) fracture of the right femur showing a bony bridge to have formed but otherwise there was no bony union. (Fig. 2, 3).
- (3) fracture of the right tibia and fibula with union of the latter but very little of the former. (Fig. 4).

After adequate skin preparation, open reduction of the left femur was performed and intramedullary nail inserted on June 15, 1955. A double hip spica was reapplied on July 8, 1955.

In September, 1955, as part of the original plan, bone chips from bone bank ribs were implanted into the sites of the fractures of the right femur and the right tibia. These procedures were performed two weeks apart and each was carried out through a window in the plaster spica which was closed when the



Figure 1

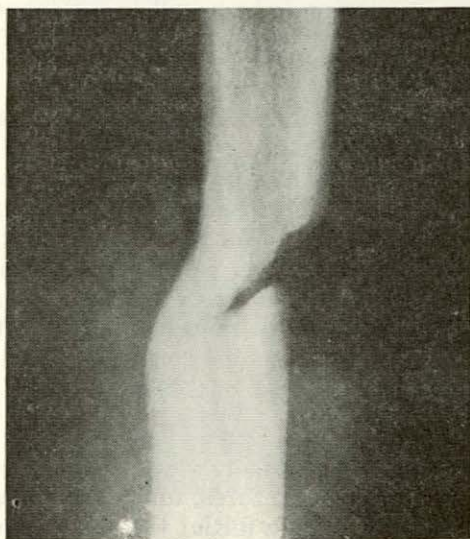


Figure 2



Figure 3



Figure 4

sutures were finally removed from each operative wound. Follow up examinations were carried out for the ensuing year. In April his progress was found to have been satisfactory and the spica cast was removed, but it was not considered prudent to allow weight bearing. He has used a wheelchair for the past summer and x-ray examinations carried out on October 13, 1956, show that there is a complete bony union of the fractures of both femora and the right tibia. (Figs. 5, 6, 7, 8).

He has received and will require much more physiotherapy to assist his rehabilitation, which will be prolonged. We were able to present him today with something which he has wanted for a long time — a pair of crutches.

Discussion

The ancillary bone may be obtained from an autogenous source or from the bone bank.

Onlay grafts and Inlay grafts are particularly used in the treatment of un-united fractures, and the onlay type has largely supplanted the inlay type.

Bone chips are best when purely of cancellous nature obtained from an autogenous source, when this is feasible. The use of bone from a bone bank does provide a source when the patient is unable to supply an adequate quantity. Bone chips may be employed to fill bone cavities caused by bone cysts, benign bone tumours, or osteomyelitis; they may be used where bony union is greatly delayed, or to increase bone bulk at a fracture site.

Summary)

- (1) A man who fell 150 feet is presented. He sustained multiple fractures, and miraculously survived.
- (2) The initial treatment was conservative.
- (3) Reconstruction operations were necessary to improve alignment and produce stability.
- (4) Ancillary bone was obtained from the bone bank provided by our thoracic surgical team.
- (5) Physiotherapy continues to play an important part in his recovery.

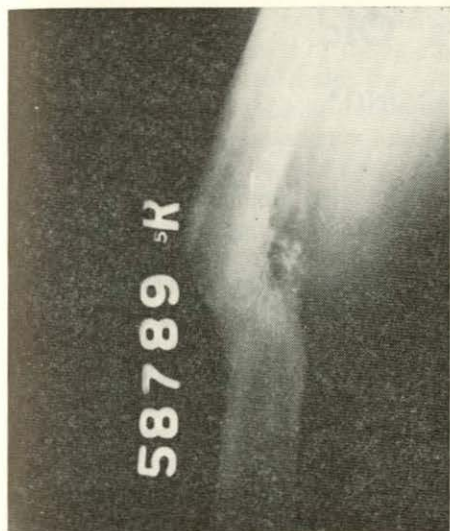


Figure 5
Right femur — AP View

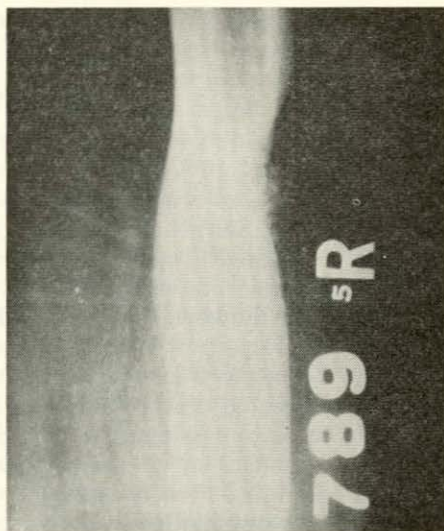


Figure 6
Right femur — Lateral View

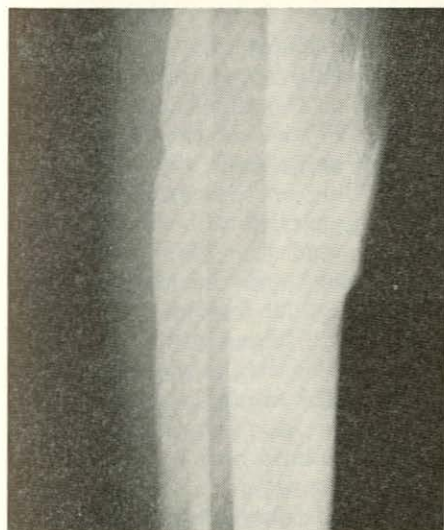


Figure 7 — AP View
Right tibia and fibula



Figure 8 — Lateral View
Right tibia and fibula

The Halifax Visiting Dispensary – 100 Years Old

MONA W. FLEMING*
Halifax, N. S.

THE doctors who were graduated before 1924 will remember the Halifax Visiting Dispensary on Brunswick St. for during their fourth year they were expected to spend some hours there observing and, we hope absorbing some knowledge from what they saw and heard. Those who have been graduated since then however and especially the more recent ones, will quite likely think of the Dispensary as part of the Dalhousie Health Clinic.

The Dispensary has just recently held its 100th Annual Meeting and it has been suggested that we tell you a little of the history of this old organization.

It came into existence in 1856 as a result of the efforts of public spirited citizens and members of the medical profession who felt that some form of medical assistance was necessary for the sick poor of the city. There were no hospital or nursing facilities available and there were many poor among the population of the city which was then about 19000. With poverty went disease. The new organization was named the Halifax Visiting Dispensary and its first quarters were on Argyle St. They were rented from a Mr. Robt. Austen for £50 a year. A Dr. J. W. Morris was appointed the first resident physician and he was assisted by other doctors whose duty it was to attend at certain hours. To this Dispensary came those in need of medical care and medicine. It was actually the fore-runner of a present day clinic. Those who were not able to attend were visited in their homes by a doctor hence the "Visiting" in the name, Halifax Visiting Dispensary. We believe that this service which is still maintained is unique in Canada.

Between the years 1856 and 1868 some 38000 persons were treated either at the Dispensary or in their homes. The funds to help carry on the work were not always easy to obtain and the time came when it seemed as if it would be necessary to discontinue the work. However in view of the fact that so many were benefitting a reorganization took place and a fresh start was made.

In 1876 the Dispensary opened its own building on the corner of Prince and Barracks St. (now Brunswick). After having carried on in cramped and otherwise inconvenient quarters, first on Argyle and then on Grafton Sts. this new building was a great joy to both the Board and the Medical Staff. The site was bought, 60x60 ft, and the building 34x50 feet, of brick, three stories high and with a good basement, was erected for about \$13000.00. The city morgue occupied the basement for many years while the Dispensary itself occupied the first floor. It had departments for women's and children's diseases, medical and surgical cases and one for eye, ear, nose and throat in addition to the pharmacy. On the second floor could have been found at different times through the years, rooms where the Carpenter's Union met, or the Anti tuberculosis League, a clinic for the diagnosis of tuberculosis, the Halifax Medical Library (1892) and finally the Halifax Welfare Bureau. For the next

*Secretary and Pharmacist.

fifty years the work was carried on quietly and efficiently in that building. The story of the efforts of the doctors with the able support of the laymen who were its directors, to make the lot of the sick poor more comfortable, was a very interesting and enlightening one. Such diseases as typhoid fever, diphtheria, scarlet fever, small pox and consumption were always present. We read in the reports of the secretary of the medical staff, about the numbers who came to be vaccinated in 1885 when the mayor requested that an arrangement be made to have it done at the Dispensary at a cost of 25c per patient, and the city gave \$100.00 to initiate the work. So many came at first that it was necessary to have a policeman to control the crowds. Some 1500 were vaccinated at that time because of the great fear that people had of smallpox.

Between 1869 and 1879 some 236 cases of diphtheria were reported and 119 occurred in one year. The use of antitoxin was first noted in 1898 but the cost was almost prohibitive so far as Dispensary funds were concerned. The City Health Board was appealed to and later the Nova Scotia Legislature, for some funds for this treatment but without result until in 1912 the city did make it available. In the meantime the Dispensary Board had permitted its use if the need were urgent or sometimes a private individual would donate the funds for it.

As time went on and sanitary conditions and the water supply improved, typhoid fever gradually began to disappear.

At the turn of the century the doctors concerned themselves more and more with the question of consumption. The need of a sanitarium was stressed frequently and pressure was brought to bear on the Nova Scotia Government by the City Board of Health and the Nova Scotia Branch of the British Medical Society. The time came finally when the Nova Scotia Sanitarium was built but the figures were too high for the Dispensary type of patient even though that was the type that most needed a place to go so that others in a family would not be exposed to the disease. A teaching program had to be utilized in the meantime and then eventually other arrangements were made which you don't need to be told about.

We noted that in 1890 the long heralded Influenza arrived and the drug used for it was "Antipyrin." It was expensive and the increased drug bill that year was partially due to it. There were 12241 prescriptions dispensed that year and the drug bill was \$982.82. This was considerably in excess of one in 1875 when 8400 prescriptions were dispensed and the drug bill was \$252.71.

The doctors who visited in the homes were frequently called upon to give nursing care as well as medical care and as many illnesses were of long duration the average number of calls per person was five. That would account for the large numbers of calls that used to be reported each year. With the coming of the Victorian Order Nurse the numbers of doctors calls probably decreased because the nurses took over a lot of that duty.

In 1877 a Dartmouth Branch of the Dispensary was organized. Dr. H. A. Payzant was the last doctor to have charge of that and he had resigned a few years before his death as he felt the need no longer there. We have always received a grant from Dartmouth and the needs of Dartmouth patients are still looked after when they apply, for medicine or glasses.

A Dental department was started early in the life of the Dispensary and for a long time the work of the apothecary and the dentist were combined. A school dental clinic was opened in the building in 1917 and later others were opened elsewhere in the city.

The eye, ear, nose and throat department which was under the care of Dr. S. Dodge for 25 years was always well attended although persons were wont to allow eye or ear conditions to become critical before going for treatment. Deafness and blindness sometimes resulted from this delay. This was noticeable among children and babies often became blind from neglect. It was during Dr. Dodge's time that the law was first enforced in some of the States making it compulsory to report babies with inflammatory eye conditions and Dr. Dodge recommended that such a law here would be wise. It did become a law later too.

Funds were always a problem and for years the directors made a yearly canvas of the city and at the end of each annual report was appended a list of donors and their contributions. At the time that the new building was erected a special drive had to be made for funds and one quite successful means was by asking the city churches to set aside one Sunday to be called "Dispensary Sunday" and on that day the collections went to the Dispensary. The first year twenty-six churches co-operated and they averaged \$100.00 each. This plan was carried on for some years but was finally discontinued from lack of interest. Many bequests have been left to the Dispensary down through the years and in 1906 an endowment fund was started. Since then all bequests have gone into that fund. One bequest of special interest to medical men was that of the late Mayor Hamilton. It was made in 1902 but did not become available until 1914 and it was specified for malignant cases only.

Between the years 1928 and 1956 some 150 patients had benefitted from that fund through the Dispensary. Some required little while others needed large quantities of surgical supplies or medication. Since the Cancer Society was formed in 1948 we have not been called upon for these things to any extent but the Dispensary has been making a grant to the Cancer Society from the fund so that it is still carrying on the work for which it was intended. A grant is made to the Victorian Order of Nurses too, to assist in the nursing care of cancer patients. The largest expenditure was made in 1925 when the Dispensary joined with the Victoria General Hospital in purchasing radium at a cost of \$15000.00, the Hamilton Fund defraying half the cost or \$7500.00, thus assuring any Dispensary patient or other indigent person, radium treatment when so indicated.

Some items that might be of interest to you were noted as one read over the old minutes — for example coal in 1855 was ordered by the chaldron (25 to 2900 lbs U.S. measure) and 8 chaldrons plus haulage cost £12.10s.

In 1897, 10 tons of hard coal and 5 chaldrons of soft coal cost \$119.70.

The Currency changed from English £,s and pence to dollars and cents in 1861. The first telephone bill noted was in 1890 and was for \$15.00 for the year.

In 1878 The Halifax County Academy was built at the other end of the block from the Dispensary and it was hoped would have a good moral effect on the area.

The completion of the Dalhousie Public Health Clinic and its opening in November 1924 marked the end of the Dispensary work as it had been carried on for nearly 70 years.

In the new setup the indoor staff was no longer required but we still kept our out-door visiting staff as you know. The dispensing for clinic patients, our own Dispensary Cases and many for the indigent patients of other doctors is our main activity now although many other things do enter in such as the assistance in getting glasses. This you may not know has averaged 90 pairs for the past 30 years, and has been looked after by a few of the eye specialists.

The advent of new drugs has increased our drug bills tremendously so that even if we do not dispense in such large numbers as in older days the bills are not comparable at all.

We hope that we may have refreshed the memory of some who have read this and that those who have come later will now know a bit about the past of this organization.

We are very happily housed here in this Dalhousie Clinic but we do not want to lose our identity. We are still a separate organization with our own Board of Directors and our own funds, and with the same objective — to keep the sick poor of the city.

LOCUM TENENS WANTED

Locum tenens wanted from May 27th to June 22nd, 1957 by a May graduate who leaves July 1st for post-graduate work in obstetrics and gynaecology in U.S.A. For further particulars apply to The Executive Secretary, The Medical Society of Nova Scotia, Dalhousie Public Health Clinic, Halifax, N. S.

Hospital Insurance In Nova Scotia

In March, 1956, the then Minister of Public Health, Hon. Geoffrey Stevens, requested that "a Planning Committee be set up to deal with Hospital Care and Diagnostic Services (Laboratory and Radiological) in this Province." The Committee named, under Chairmanship of Doctor J. S. Robertson, Deputy Minister of Health, had power to add and representation from The Medical Society of Nova Scotia was invited. In addition to this, a brief from The Medical Society was submitted to the Planning Committee. The Executive Secretary of The Society was named representative and has attended meetings of that Committee. Six briefs and five reports were studied and an Interim report was submitted to the Honourable Minister of Health which was tabled in the Legislative Assembly on March 4, 1957. The Interim report includes much detail; the whole report being 43 pages in length. The readers of the Bulletin undoubtedly will be interested in the recommendations which are as follows.

Recommendations Based on Interim Report of Hospital Planning Committee.

1. After reviewing all information available to the Committee, we are recommending that the Province of Nova Scotia seriously consider accepting the Federal Proposal for Hospital Insurance and Specified Laboratory and Radiology Services—further, that the Province continue to press for acceptance on a sharing basis of the seven controversial points dealt with previously in connection with the Federal Proposal. (Page 4).

2. As will appear from the Hospital bed figures, certain areas of the province are **at present** short of beds, particularly the Halifax area. It has been suggested that it would be impractical to institute a general hospital plan in view of these shortages since accommodation may not be available for those desiring hospitalization; however, it is the opinion of your Committee that with the co-operation of the Medical Profession and Hospital Administrators that those persons **requiring** hospitalization can be looked after.

Further, it is recommended that there should be at least 18 months and possibly 24 months between the decision to operate a Plan and the actual date of its commencement—Ontario are suggesting 1959 as a commencement date. During this period it is recommended that additional hospital beds be built as required—special priority should be given to additional beds in the Halifax, Yarmouth, Truro and Springhill areas.

4. In this Interim Report your Committee has not attempted to go into all the details of putting into effect and into operation a Hospital Plan. It is felt that the establishment of the feasibility of a Hospital Plan for Nova Scotia together with certain basic information and principles fulfils the terms of reference.

5. In connection with a Hospital Plan for Nova Scotia, your Committee feels the following points are of importance:

1. That ownership and operation of hospitals remain as at present.
2. That hospitals be paid the *cost* of providing care in standard wards for persons covered under the Plan including specified in-patient laboratory and radiological services.
3. That a person covered under the Plan be credited with the cost of standard ward care if he elects to be treated in private or semi-private wards.
4. That the Plan provide at commencement for specified in and out-patient laboratory and radiological services.
5. That administration of a Plan be placed under one of the following:
 - (a) A Division of the Department of Public Health
 - (b) A separate Department of Government under the Ministry of Public Health
 - (c) A Commission appointed by the Government
 - (d) Other agency
6. That funds for the Plan might be provided from one or more of the following sources:
 - (a) The Consolidated Revenue of the Province
 - (b) A special Hospital Tax—earmarked (See Morse Report—page 18)
 - (c) Capitation or "Head" Tax plus additional funds from Consolidated Revenue
 - (d) A combination of the above
 - (e) One of the above plus Municipal funds

7. Your Committee feels that in order to make the Plan of most use to the people of the Province that it should cover all persons resident in the Province for the last six months before the Plan comes into operation excepting only those who are a Federal responsibility, e.g. National Defence forces, and R.C.M.P.

8. With regard to indigents, this will depend on the method of paying for the Plan.

- (a) If the Plan is supported as suggested in 6(a) or 6(b) above, then all residents—indigent or otherwise—would be covered.
- (b) If the Plan is to be supported by capitation payments, then the Province and/or the Municipalities should underwrite the capitation fee for indigents.

9. That the question of deterrent charges should be looked into carefully—your Committee is not in complete agreement that such charges are of value.

The following are the methods of applying deterrents:

- (a) A daily charge of \$1.00-\$2.00 for each day in hospital chargeable to the patient and collected by the hospital—not shareable.
- (b) An initial fee of \$5.00-\$15.00 for each admission to hospital regardless of length of stay—this would keep a certain number out of hospital but would penalize those really needing hospitalization—not shareable.

It is strongly suggested by Federal authorities that if a deterrent charge is made it should not amount to more than 10% of the hospital charge.

10. Your Committee is agreed that the present hospital locations are suitable, and that future expansion in hospital beds should be by additions to or replacement of hospital beds in present locations. Except for a few areas, most citizens of Nova Scotia are within 25 miles of a hospital.

11. Province to be divided into Hospital Regions for administrative purposes—recommended Division is as follows:

**Geographic Areas of Nova Scotia Suitable as Administrative Regions
For a Hospital Plan**

Name of Region	Municipalities	Region	Municipalities
1. Atlantic	Halifax City Halifax County	5. Cobequid	Colchester County East Hants Municipality
2. Southern	Lunenburg County Queens County	6. Cumberland	Cumberland County
3. Western	Digby County Yarmouth County Shelburne County	7. Pictou	Pictou County
4. Fundy	Annapolis County Kings County West Hants Municipality	8. Eastern	Antigonish County Guysboro County
		9. Cape Breton	Cape Breton County Inverness County Victoria County Richmond County

12. In order to develop a proper hospital system in Nova Scotia, it is recommended that in such Hospital Region, as outlined, there be developed at least one Regional Hospital large enough so as to properly support a specialist staff, and a Type A or B Laboratory and a Radiology Department equipped and staffed for required demands of such a hospital.

13. Your Committee recommends that chronic beds be located in intimate association with existing large normal hospitals, preferably Regional hospitals.

14. The Victoria General Hospital should continue as the principal closed Teaching Hospital of the Province in association with Dalhousie Medical School—further, it should continue developing as the principal Consultation Hospital of the Province—if so, other general hospital facilities must be further developed in the Halifax area. The Halifax area is one of the Regions urgently in need of additional hospital beds.

15. The Halifax Hospital Region should be fully and carefully re-surveyed, and studied to determine the following points:

- (1) Further development of Victoria General Hospital
- (2) Further development of Halifax Infirmary

(3) Need for hospital beds in the Town of Dartmouth

(4) Other hospital needs, e.g. Childrens, chronic, etc.

16. Following summary table shows the estimates for hospital beds in the Province in 1957 and projected to 1965:

Present Capacity of Hospital (1956)	Active Treatment		Shortage of Beds	
	Total Needs 1957	1965	1957	1965
3277	3784	4123	789	1111
	Chronic Treatment			
113	963	1050	850	937
Totals:	3390	4747	1639	2048

(The above does not take into account DVA or National Defense Hospitals which admit Service Personnel only—certain allowances have been made in the population figures to cover this situation).

Above tables are based on 1600 patient days per 1000 population for active treatment, and 550 patient days per 1000 population for chronic care.

Also on 5.5 beds per 1000 active treatment and 1.4 per 1000 population for chronic treatment. (See Stewart Report—Page 15).

The above summary table is based on **bed capacity** as determined by agreed standards. Most hospitals have more beds in operation than rated capacity; therefore, the **actual** shortage is not as great as appears above—in order to improve hospitalization, the bed complement should be the same as bed capacity except for emergency periods. As a credit against the overall shortage, there is an apparent **over supply** of 282 active treatment beds in the Eastern end of the Province in 1957 based on the standards used.

17. By Hospital Regions, the following are the recommendations for bed needs 1957 and 1965:

Region	Active Treatment		Shortages		
	1956 Bed Capac.	Beds per 1000* Served (1955)	Requir. at 5.5/1000 1957	1956	1965
Atlantic	1085	4.5	1404	1684	599
Southern	123	3.5	196	199	76
Western	109	2.2	269	263	154
Fundy	250	4.1	343	374	124
Cobequid	110	3.0	204	223	113
Cumberland	134	3.6	184	179	45
Pictou	270	7.2	206	205	—
Eastern	231	9.4	149	152	—
Cape Breton	965	6.9	829	844	—
Nova Scotia	3277	5.0	3784	4123	1111

*Includes 113 chronic beds in general hospitals—only affects slightly figures in Atlantic, Eastern and Cape Breton Regions.

Chronic Beds

Region	1955		1965
	Capacity	Bed Requirements at 1.4 beds per 1000 pop.	
Atlantic	23	279	348
Southern	—	65	66
Western	—	78	76
Fundy	—	103	113
Cobequid	—	62	68
Cumberland	—	54	53
Pictou	—	61	61
Eastern	22	37	38
Cape Breton	68	224	227
<hr/>			
NOVA SCOTIA	113	963	1050
Shortages (chronic beds)		850	937
Total Bed Shortage (Active and Chronic)		1639	2048

*Refer to Stewart report (pages 39-40) for details.

In certain Regions, e.g., Pictou, Eastern and Cape Breton Regions, there is an apparent over-supply of active treatment beds—however, these are so located as to be of little assistance to the bed shortages of other Regions—consequently, these have not been shown as a credit towards the shortages.

18. At this stage, your Committee is not making specific recommendations for the location of beds **within Regions** other than to repeat the recommendation in Item 10—namely, that additional beds should be in hospital situations already established—one of the difficulties in present planning is due to the fact that we have too many **small** hospitals for the provision of an efficient and economical hospital service.

19. In order to service the additional beds required, the nurse situation must be dealt with. It would appear that most of the hospitals operating Schools of Nursing would be prepared to increase the number of nurses in training if additional living and teaching accommodation were available. This means capital expenditures for Nurses Homes and Teaching facilities—in view of the present nurse shortage, the situation should be regarded as urgent and steps taken to assist in this need for capital expenditures.

There is developing another factor, namely, the increasing usage of Nursing Assistants in hospitals and other nursing fields—every encouragement should be given to the development of Schools for Nursing Assistants in this Province.

The following table illustrates the need with regard to Residence beds for graduate nurses, student nurses and nursing assistants.

Nursing Staff—1956

Graduates	—	916
Students	—	990
Nursing Assistants	—	335
		2241
Present Residence Beds (1956)	—	1456*
Additional and Replacement Residence Beds		—1237
Expansion required to 1965		— 623
		Total 1860

*A large proportion of these beds—probably as high as 50%—are regarded as unsuitable for Nurse Residence accommodation and should be replaced—these replacement beds appear as *part* of the 1237 figure for additional and replacement beds.

Note—with regard to number living in, the following are recommendations

Student Nurses	—100%	live in
Graduate Nurses	— 2/3	live in
Nursing Assistants	— 2/3	live in

Capital Costs—Nurse Residence Beds

Beds required 1956	—	1237
Estimate Cost per bed	— \$	5,000
Estimate Total	—	6,185,000
Requirements by 1965	—	623
Estimate Cost @ \$5,000—	\$	3,125,000
Total Estimate Cost to 1965	— \$	9,310,000

Laboratory and Radiological Services

20. No hospital can operate satisfactorily and give good service to its patients without good laboratory and radiological services. Consequently, improved laboratory and radiological services must be planned for in any Hospital Plan.

Under the present planning, the cost of specified in-patient laboratory and radiological services would be included in the per diem cost of the hospital—in the estimates for a Nova Scotia Plan, these costs are so included.

There are many arguments in favour of the early development of out-patient laboratory and radiological services. It is stated that such a development will prevent the necessity of building many hospital beds on the premise that a fair number of present hospital admissions are for purposes of diagnosis—most of such examinations can be carried out on an out-patient basis. Thus, there is saved the necessity for additional hospital beds, and additional costs.

It is estimated by the Federal authorities that in-patient laboratory and radiological facilities can be extended to out-patients for \$1.00 per capita or approximately \$700,000.00 additional in 1957. This would be a shareable expense.

Correspondence

Re: Contract Non-operating Railroad Employees.

The Editor,
The Nova Scotia Medical Bulletin,

Dear Sir,

Due to the great confusion which seems to exist in certain quarters concerning the recently inaugurated Contract affecting non-operating Railroad employees, we wish at this time to provide our physicians with certain basic information concerning this Plan. More definite information will later be forthcoming and will be distributed to the medical profession as it becomes available.

The non-operating employees agreement differs from the usual Maritime Medical Care Contract in that it is a national one. It involves five railways, seventeen unions, fourteen medical-hospital plans, four Blue Cross plans and six insurance companies. Negotiations in regard to this contract have been proceeding for the past year, and because of the many factors involved, have proved to be very difficult. However, an agreement between all parties concerned was at last formulated and expressed as the Master Agreement, which will govern the terms of the Contracts issued to subscribers of this group in the various areas.

As far as Nova Scotia is concerned, the following situation applies—

1. Insurance Companies will be responsible for the Weekly Indemnity and Life Insurance aspects of the Agreement.
2. Blue Cross will be responsible for all *Hospital* charges in connection with the Agreement.
3. Maritime Medical Care will be responsible for payment of Physicians accounts.

Please Note: There is no **Blue Shield** feature in this Agreement.

Accounts for in-hospital medical services should not be sent to the Blue-Cross, but forwarded to Maritime Medical Care on the usual I.B.M. forms.

Both the medical and hospital aspects of this plan consist of a Basic Coverage (half the cost of which is paid by the Railroad) and two Optional additions to the Contract, (the cost of which is paid by the subscriber). The Maritime Medical Benefits, with which the Nova Scotia medical profession are chiefly concerned, are as follows:—

1. Basic Coverage; (Subscribers Identification card stamped "Basic Only"). Surgical operations, treatment of fractures and dislocations, maternity benefits.
2. Option I; (Identification card stamped "Option I"). Basic Coverage, plus,—anaesthetic services, X-ray for fracture or dislocation (at full rates—Max. \$25.) Seventy days in-hospital medical care, consultations for hospitalized patients.
3. Option II; (Identification card stamped "Option II") Basic Coverage, plus Option I, plus,—home and office calls, diagnostic

X-ray services (at full rates—Max. \$35). X-ray therapy and radium therapy—limit \$150. Refractions—one per year.

Lab. services—as under present Group Contract.

Please Note: Routine physicals and drugs provided by the doctor are *not* benefits.

“Full rates” are as per the Nova Scotia Minimum Schedule of Fees as accepted by Maritime Medical Care.

Incidentally, there are no “waiting periods” on this contract, all services start as of January 1st, 1957. Accounts should be submitted on the regular I.B.M. forms in present usage, and with proper subscriber number.

Two sets of numbers appear on the Subscriber's Identification card, but the Maritime Medical Care number is the one required; the railway number appearing beneath may be ignored.

Booklets describing this Contract in more detail are at present being printed. These will be distributed to participating physicians as soon as possible. There is also a booklet being printed by the Railroad for subscribers. Until these are issued we expect some of the present confusion to continue for a time. Any particular problems we shall try to resolve on request.

G. B. SHAW, M. D.,
Medical Director, M.M.C.

Personal Interest Notes

Doctor Peter G. Gordon, a graduate of Dalhousie Medical School in 1955, who has been practising for the past three years in Liverpool, N. S. has returned to his home city. Doctor Gordon will be associated with Doctors Donald Rice and John Slayter in the practice of general medicine and surgery. We all wish him the best of luck.

President A. E. Kerr and the Faculty of Medicine, Dalhousie University, have appointed Doctor S. J. Shane as Assistant Professor of Medicine. Doctor Shane will be engaged in research and in teaching of heart disease. He will at the same time serve as Medical Director of the Halifax Tuberculosis Hospital as long as this institution is in operation. Doctor Kerr has stated that in obtaining the services of Doctor Shane we have added to our staff a specialist who has had a distinguished record in medical research, and has contributed more than forty papers on professional subjects. He has demonstrated a great interest in the treatment and research of cardiac medicine and surgery.

Doctor Shane was born in Yarmouth and graduated in medicine from Dalhousie in 1940. In 1942 he joined the Royal Canadian Army Medical Corps in which he served until September, 1945. Following the war, Doctor Shane continued his studies in internal medicine at McGill, and was a research fellow in clinical cardiology at Cornell University Medical College in New York. During the past few years he served, first as Assistant Medical Superintendent, and later as Superintendent at the Point Edward Hospital, Cape Breton. He is a Fellow of the Royal College of Surgeons of Canada, the American College of Physicians and the American College of Chest Physicians.

News Release

from

THE CANADIAN LIFE INSURANCE OFFICERS ASSOCIATION

302 Bay St., Toronto 1

Life Insurance companies operating in Canada will provide the necessary funds to firmly establish the National Heart Foundation of Canada, it was announced in Toronto today.

The Canadian Life Insurance Officers Association, through its Standing Committee on Public Health, is undertaking to provide financial support to the extent of \$60,000 in the next two years to enable the Foundation to proceed with its organizational activities.

C. P. Fell, Chairman of the Association's Public Health Committee, making the announcement said: —

“As diseases of the heart and the related vascular diseases are the No. 1 Killer among the companies' policyholders, the companies have a decided interest in the purposes of the National Heart Foundation. In making this contribution to the Foundation, they feel they will be assisting in the promotion of better health for Canadians.”

Dr. John B. Armstrong, who has been recently appointed Executive Secretary of the Foundation, points out that the Foundation's first function will be to co-ordinate research in Canada in cardiovascular diseases. Another function will be the education of the profession in this branch of medical science.

The Foundation will survey the whole field of heart disease research to see which centres are best equipped to investigate scientifically particular fields and will endeavour to eliminate unnecessary overlapping, Dr. Armstrong advises.

Dr. Armstrong also indicated that in order to demonstrate to the general practitioner how to apply results of research in heart diseases, the Foundation will support the work of teams consisting of experts in cardiology who will visit outlying communities and assist local practitioners in diagnosis and treatment of cases of cardiovascular disease under the latter's care. In provinces where this method of instruction is being carried on, such clinics have proven popular with a high proportion of local doctors attending.

Physicians' Art Salon at C. M. A. Convention

Invites Exhibitors

June 17-21, 1957

The Physicians' Art Salon Committee cordially invites Canadian physicians and medical undergraduates to enter the 1957 Salon to be held in the MacDonald Hotel, Edmonton, Alta., from June 17-21. This will be the 13th year that this popular art and photographic feature will take place at the annual C.M.A. Convention. It is again sponsored by Frank W. Horner Limited, Montreal, Que.

Conditions of Entry

Entries will be accepted in three sections—

1. Fine Art
2. Monochrome Photography
3. Colour Photography

The Fine Art section is further subdivided into three categories—Traditional, Contemporary (Modern), and Portrait. Classification into these categories is done by the judges. There is no restriction on media,—oil, tempera, gouache, water colour, charcoal, pencil or dry brush is acceptable in each.

Each exhibitor may submit up to three entries in the Fine Art and Colour Photography and four in monochrome photography. Exhibitors may enter up to the limit in one or more sections. There is no charge. All costs, including transportation to and from Edmonton, will be borne by Horner.

Judging and Awards

All accepted entries will be displayed in the Salon and then judged for awards by a competent jury selected by the Art Salon Committee.

To Obtain Entry Form

Any physician or medical undergraduate may obtain an entry form and complete details from the sponsor at P.O. Box 959, Montreal, Que. A short note or post-card will bring the form along with complete instructions on how to prepare and ship your entries.

Art Salon Calendar

The Physicians' Art Salon Calendar, an attractive desk piece based on Salon exhibits will again be prepared by Frank W. Horner Limited. The Calendar reproduces selections from the award winners and is distributed to all physicians in Canada with the compliments of the Company.

Public Relations Corner

Press Relations

The mention of the term press relations in almost any doctor's lounge in the country will frequently bring a strong complaint from some confrere about an unpleasant experience he has had with the press at one time or another. One hears the occasional doctor say — "The best way to handle press relations is to have little or nothing to do with the newsmen" and so it goes. Most doctors are afraid of the press, and that leads us to the problem.

The Problem

We have to admit that the newsmen have a job to do, namely report the news. We are equally aware that medical news these days rates very high in reader interest. It follows that working on the basis of giving the customer what he wants that the press is going to print as much medical news as its personnel can muster. And of course to be a saleable article it often needs to be a bit sensational. Departure from fact and resorting to fiction is not uncommon in some so-called medical stories. So we doctors complain that a good many news releases on medical topics are misleading and over-sensational; and we are frequently very right. What does the press agent have to say about this? He reminds us that the public is avid for medical news. For the most part little or no medical information comes from organized medicine. Medical press releases reach the national and local press through lay outlets in many cases. The press, in search of the truth in most cases, would welcome an opportunity to talk over the medical release with an authorized representative of the medical society, but no such opportunity is open to him in most areas. If he looks for an authoritative opinion he alleges he gets the run around. So he gets fed up and prints what he has as best he can. Result — another news column on a medical subject written by a layman, probably much of it misleading, further alienating our relations with the press.

The Solution

If the communications medium must carry medical information we might as well accept this as having good potential rather than bad and get together with the press and assist the newsmen rather than hinder them. There is a real opportunity open to us to meet the press half way, feed them some of the medical news and in return for this we can influence the flavour and character of many articles. This is not a new idea. It has been tried out and works well in other areas.

The Formula

1. The formula is a simple one. In every area where there is any communications medium, be it press, radio or TV, let there be a medical press liaison officer known to the press, being the authoritative spokesman to all news outlets in that area.

2. Let this liaison officer or committee do more than just "be on call" for problems that arise. Regular press conferences, giving authoritative

medical stories to the press will do a great deal to foster good public and press relations and serve as an avenue to clear up misconceptions about many matters. This would provide a real opportunity to neutralize or nullify a good deal of the uncomplimentary material about the profession that irks us so.

Final Thought

Let us be honest about it. Our press relations are not good. As a result our public relations are not as good as they could be, and it is at least partly our fault. We have been too smug and inaccessible, and at times too afraid to tell our side of the story. Let us try to be friendly and co-operative, and most of all available. In return for assisting the newsmen to report more accurately we can certainly have a great deal more influence in providing the proper slant on medical releases. The opportunity is there for the asking. The press are willing to meet us at any time. Let every Branch Society give them a trial.

F. J. B.

SCHERING CORPORATION

Three Canadian medical students have won Honourable Mention in the 1956 competition for the Schering Awards.

The three Canadians won recognition in competition with papers by students of Medicine throughout the United States and Canada.

Two of the successful Canadian entrants are undergraduates at Dalhousie University Faculty of Medicine, and the third winner is a McGill University medical student.

The Schering Awards were instituted by the Montreal and Bloomfield, New Jersey, pharmaceutical manufacturing company seventeen years ago to encourage medical students to explore current research and to correlate their findings in writing. Canadian students have won places on the Award list in each year of competition.

Gerald R. Berry of Dalhousie was named in the 1956 Awards list for a paper on "The Clinical Use of Adrenocortical Steroids in Collagen Diseases." The second Dalhousie winner was Carl E. Abbott, who was cited for his thesis on "Metabolic Aspects of the Aging Process." The successful McGill student was Roland C. Way, who wrote on the same subject as Mr. Berry.

In naming the 1956 Schering Award winners the judging committee announced that the prizes will be increased to \$1,000 for first place and \$500 for second in each of three categories in the 1957 competition.

First National Scientific Convention
College of General Practice of Canada
Sheraton-Mount Royal Hotel, Montreal,
March 4, 5, 6, 1957

Impressions of A Visiting "Fireman"

A crisp early Spring day, sunshine, and blue sky was a fitting climatic portent which greeted our arrival in Montreal, to this first national meeting of the College of General Practice and the weather like the convention remained excellent to the end. I suppose most of us, members of our newly fledged, little more than three years old College, were just a little anxious as to how things would go. Few of us, I think, had dared to hope that it would prove such a spontaneous and genuine expression of faith in the future of our College, and of our chosen branch of medicine. From a Dominion wide membership of about 1,400, almost 800 members turned up, and together with wives, visiting doctors, and guest speakers, the total registration reached the 1,400 mark.

The main purpose of this convention was educational. An excellent array of speakers graced the scientific sessions which occupied the three days from 9.00 a.m. to 5.00 p.m. with suitable intervals for visits to many unusually interesting scientific and medical exhibits, and the inevitable array of drug house booths. We did have a break for luncheon too, but more about that later.

Amongst the high lights at these sessions I might mention Doctor Arthur Curtis, who gave a fascinating talk about pigmentation; Doctor Lennox Bell on unexplained fever; Doctor Harry Medovy on recent advances in paediatrics; Doctor Aldwyn Stokes on emotional disorders; Doctor Hans Selye on stress; and our own Benge Atlee who "handled the newborn infant" with his usual dexterity and native wit. There was an excellent panel on "Diabetes in General Practice" and another on "Ataractic Drugs" and on "Sera and Vaccines." We also heard from Doctor R. A. Davison of the University of Tennessee, on the "Place of General Practice Teaching in the Medical School." Doctor Davison, who is Assistant Professor and Head of the Department of General Practice of this University, has the only complete and fully autonomous Department of General Practice on the continent in which the medical student as part of his required under-graduate training functions as a family doctor in the hospital clinic and in the home under the supervision of G.P.'s. on the Faculty. Doctor Davison presented his facts well and gave us much food for thought concerning this rather revolutionary form of under-graduate teaching.

Amongst the scientific exhibits I might mention a very excellent practical demonstration put on by Queen Mary Veterans' Hospital on plaster cast application. The casts were applied to (extremities only) a very beautiful and charming young lady who exhibited the most remarkable equanimity under prolonged scrutiny by the profession. One elderly gentleman from the

Prairies waited patiently for the application of a hip spica but was, I understand, disappointed. The scientific sessions were well attended throughout and it was sometimes difficult to find a seat in the large convention hall. The central block of seats were equipped with ear phones and simultaneous translations were provided at all sessions in either French or English.

A free health examination service for all doctors attending the convention was available near the Convention Hall, and was a very busy place. The examination consisted of a brief history, chest X-ray, blood examination, urinalysis, blood pressure, E.K.G., abdominal examination and rectal examination. I suspect that many of us who suffered this latter indignity for the first time will be a little more sympathetic with the patient who says—"Do you have to do this doctor?"

And now to the luncheons, also very well attended and fortunate in their choice of speakers. On Monday we were entertained by one of our French Canadian colleagues in the person of Doctor Jean Charbonneau, an eminent Montreal urologist. He proved to be a true descendant of that worthy Doctor Rabelais and portrayed the seven ages of man as seen in various urological disorders with a candour and broad humour which Chaucer might have envied. Having titillated our curiosity by first speaking in French he then repeated his oration in English. And did the ladies blush!

The speakers on the following days were in rather more serious vein but none the less appreciated. Doctor Ian Grant of Glasgow, Scotland, President of the College of General Practitioners of Great Britain, and incidentally also Chairman of Council of the B.M.A., told us of the progress which his College has made and of some of their problems. With dry Scottish humour he also told of a recent "magic carpet" visit he had made to Arabia to represent the B.M.A. at the opening ceremonies of what must be one of the world's most remarkable hospitals in the newly oil rich Shaikhdom of Qatar.

Doctor John DeTar, President of the American Academy of General Practice, spoke to us on Wednesday. He gave us a most inspiring account of the gradual rise of the standard and status of the Generalist in the U.S.A. from the all time low which was reached about ten years ago, and of the part which his Academy was playing in this turn of events. His philosophy of practice was most wholesome and I think we all felt that the American Academy was indeed lucky to have such a man at the helm.

Of other events with a more social flavour, there was a visit to the Chalet atop Mount Royal, where following the Mayor's liberal cocktails, supper and dancing the company in the bus returning to the Hotel was a deal more jovial than when it set out. Perhaps this had something to do with the good humour, and mainly excellent speeches to be heard at the Annual General Meeting which followed.

The Annual Dinner, preceded by cocktails courtesy "Frosst," saw the installation of our new President, Doctor Jack McKenty of Winnipeg by the outgoing President and distinguished Maritimer, Doctor Charlie Gass, now living at Tatamagouche. We were honoured at the dinner by the presence of the Hon. Paul Martin, Minister of Health, who gave an eloquent address and certainly sounded like the doctor's best friend (but of course this is election year). A short play in French followed, and then there was dancing until midnight.

Other entertainment was graciously arranged for the ladies by our Montreal hosts, but of their doings I cannot tell.

To sum up it was a well organized tip-top convention from start to finish and a word of praise is due to all those who had the planning of it. More especially I must give a hand to Doctor Victor Johnston, the Executive Director of the College, Doctor Peter Kinsey of Toronto, the Chairman of the Programme Committee and to our hosts of the Quebec Chapter in Montreal.

In this age of specialists, I can only say to any of the G.P.'s. in the Nova Scotian Medical Society who have not yet joined the College of General Practice and who are sincerely interested in furthering their medical knowledge and at the same time the cause of this their chosen branch of the Art of Medicine that the College deserves and needs your support. From my own personal experience I am convinced that you will get a great deal more worth-while out of the College than you can ever hope to give.

The second annual convention will be held in Winnipeg, Manitoba, at the end of March next year. See you there?

H. C. S.

Obituary

Dr. Robert Evatt Mathers

Dr. Robert Evatt Mathers died on February 22, in the Victoria General Hospital at the age of eighty-three. He had been a patient in the hospital prior to his death, for a period of two weeks.

Dr. Mathers was a Fellow of the Royal College of Surgeons of Canada, and a Fellow of the American College of Surgeons. He was a graduate of the Dalhousie Medical College, and specialized in eye, ear, nose and throat in the University of New York. He commenced practice in Halifax in 1900, and in 1906 he entered into partnership with Dr. Arthur Doull in his chosen speciality, and this partnership lasted for forty years until Dr. Mathers retired in 1947. He was a consultant to the Protestant Orphans Home, Victoria General Hospital, School for the Blind, School for the Deaf, and the Children's Hospital.

During his lifetime, Dr. Mathers travelled extensively, his most unusual visit being to the Island of Tristram Da Cunha in the South Atlantic where the natives kept him busy examining eyes, ears and throats.

On September 30, 1902, he married the former Ellen Farnham Ledder. She died in September, 1928. He was a member of the Phi Rho Sigma Fraternity, and was one of the Grand Councillors for a period of three years. He was also a member of St. Paul's Church. He is survived by his second wife, the former Rita Phillips of Truro, one sister, Mrs. Catherine Neil of Halifax, and two nephews, Harry I, and Evatt R. of Halifax.

An Appreciation

By

Luther MacKenzie, M.D., and S. R. Johnston, M.D.

Doctor R. Evatt Mathers, whose death occurred on February 22nd, was born in Halifax in 1874. He received his Academic education in the schools of Halifax and at Dalhousie University. Having decided to study Medicine he went to New York where he entered the Medical School of N. Y. University (N. Y. U. — Bellevue Medical School) and having received his M.D. Degree at once began his post-graduate studies in the specialty of Eye, Ear, Nose and Throat. In this course he worked in the nose and throat clinic of Doctor Cornelius Coakley, and in the eye clinic of Doctor John E. Weeks, two of the outstanding men in America, at that time, in their respective fields.

Doctor Mathers was an apt and keen student, and on the completion of his course, was offered inducements to stay on in New York but he preferred to return to Halifax, where he began the practice of his specialty in 1901. In 1906 he associated himself with Doctor Arthur Doull, a partnership that lasted for forty-one years until Doctor Mathers retirement in 1947. As the years

went by Doctor Mathers devoted himself more and more to diseases of the eye, and in his many years of active work rendered a service to the people of Halifax and of Nova Scotia of an excellence that was probably not excelled in Canada.

In 1910 Doctor Mathers received the appointment of clinical lecturer in Dalhousie Medical College in the department of Eye, Ear, Nose and Throat, and was made professor in 1928 holding the chair until his retirement in 1936, when he was made emeritus professor.

Doctor Mathers was a man of high intellectual integrity, disliking evasion and dissembling, but while frowning on the transgression was very tolerant of the transgressor.

In his professional relations, he maintained the highest ethical standards, and in his dealings with his fellow man, he followed the golden rule.

It might well be said of Doctor Mathers as Sir William Osler wished it might be said of him —

“I have loved no darkness
Sophisticated no truth
Nursed no delusion
Held no fear.”

Doctor Mathers had an active and rewarding life and he died full of years and honours, leaving to his many friends precious memories that will endure while memory lasts.

The following Tribute has been received from Miss Bertha O. Archibald

I was indeed shocked, as no doubt many others were, to read of the passing of Dr. R. Evatt Mathers.

My first acquaintance with the firm of Mathers & Doull was when I was a child attending the Halifax County Academy, and I have been paying visits periodically to that firm ever since. I became more intimately acquainted with these doctors when I joined the staff of the Victoria General Hospital as Pharmacist.

It was on Dec. 6th, 1917 during the dreadful Halifax Disaster when the great skill of these men and many others was appreciated by hundreds of Haligonions. Dr. Evatt Mathers performed fifty operations during the first twenty-four hours.

He told me later how it was impossible for him to procure any kind of a conveyance to get him home. In the early hours of the next morning he decided, though exhausted, to walk home. He tried to make his way across the open field through the deep snow to Spring Garden Road. The Medical Dental Library, The Grace Maternity or the Science Building were not in evidence in 1917. In crossing over he fell into a very deep ditch and was so prostrate

he just did not have the strength to get up. How long he remained there he did not exactly know but realized he must try to get out and get home as it was bitterly cold. As soon as he entered his front door he fainted. That night could have added another casualty to the list.

Reports of unusual operations sometimes came to me in the Pharmacy where special solutions were often asked for and prepared for the doctor's use.

One day one of the nurses from the operating room who happened to be in the Pharmacy remarked, "Dr. Mathers operated on a man today who was born totally blind." Later when the bandages were removed the young man was so thrilled with our world that he said he was sure that heaven could not be any more beautiful. It was quite a shock no doubt to his whole system.

I must add still another word of appreciation to the firm now known as Doull & MacRae. Dr. Ernest Doull having removed cataracts from my eyes, has given me sight, which is much better than when I was a child attending the old Halifax County Academy.

Doctor Ella Pearl Hopgood died at her home on March, 8, 1957. She was born in Malpeque, Prince Edward Island, and after graduating from the Prince of Wales College entered Dalhousie Medical School from which institution she graduated in 1920. Following graduation Doctor Hopgood specialized in Psychiatry and was widely known for her work in the treatment of mental illness. In 1920 she was appointed to the staff of the Nova Scotia Hospital and was made Assistant Superintendent in 1928, retiring in 1953 after more than thirty years service. She was keenly interested in the work of the St. John Ambulance and recognition was given when she was made a Commander of the Order of St. John, and was invested at Ottawa by Lord Alexander of Tunis, then Governor-General of Canada. Doctor Hopgood was a member of the H.M.S. Shannon Chapter, I.O.D.E., and was former President of the Halifax Branch of Business and Professional Women. She is survived by her sister, Miss Hazel Hopgood of Dartmouth, with whom she made her home.

It is with regret that we have to report the death of Sir Lionel Whitby, Regius Professor of Physics at Cambridge University, England, and a former President of the British Medical Association, who died on November 24, 1956. Sir Lionel has been an honorary member of our Society since September, 1949. At that time he attended the annual meeting at White Point Beach and most of us will recall his interesting talks and the charm of his personality.