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*The* **HOSPITAL  
MEDICAL** *and*  
**NURSING WORLD**  
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Malunion, delayed healing, low-grade infections, and other interruptions to recovery can often be forestalled by building up the tissues with

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(AS DEFINED IN THE CENTURY DICTIONARY)

(Hal-i-to-sis) N. N. L.

(L. Halitus—Breath ∴. Osis—Offensive)

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# HALITOSIS

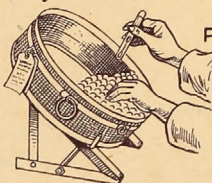
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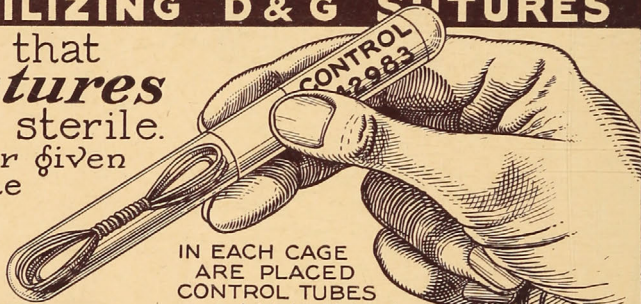
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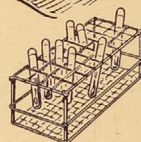


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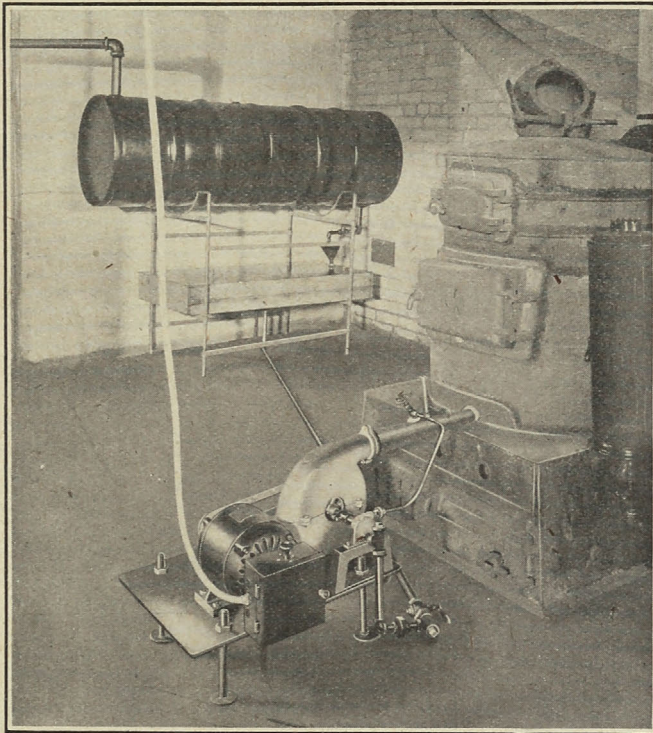


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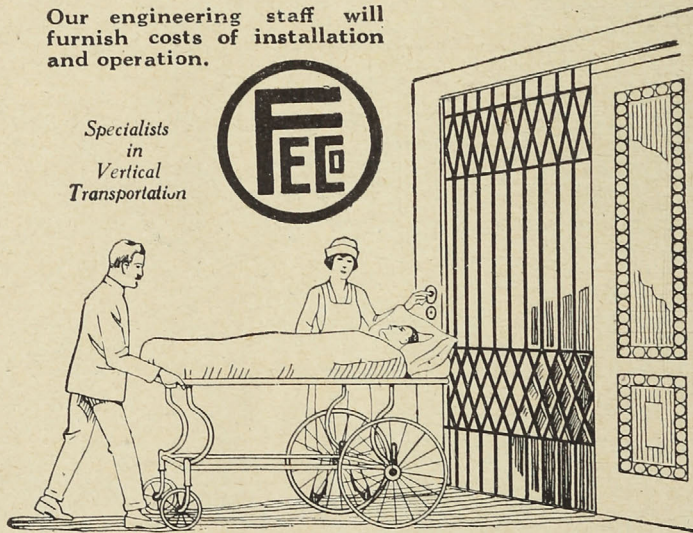
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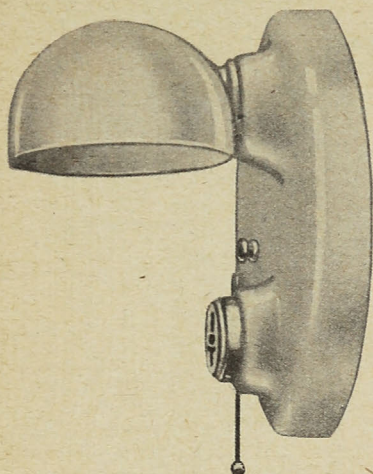
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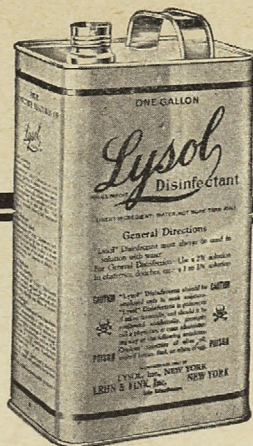
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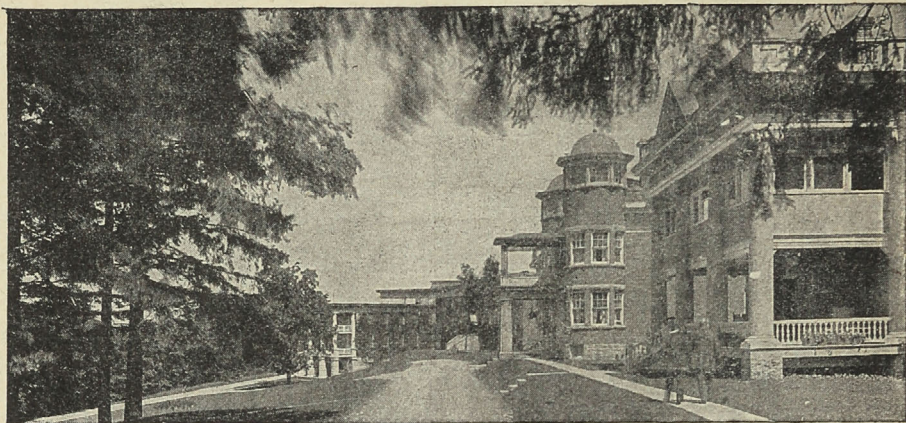
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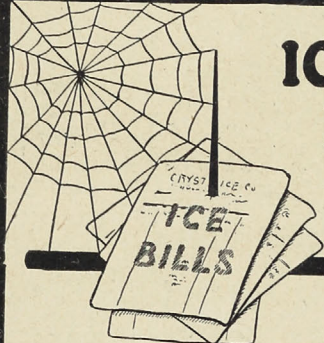


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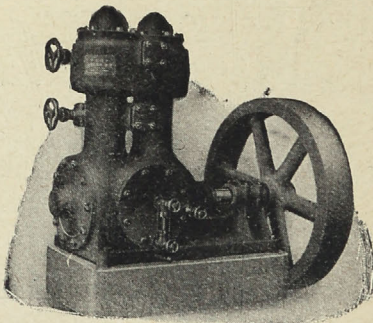
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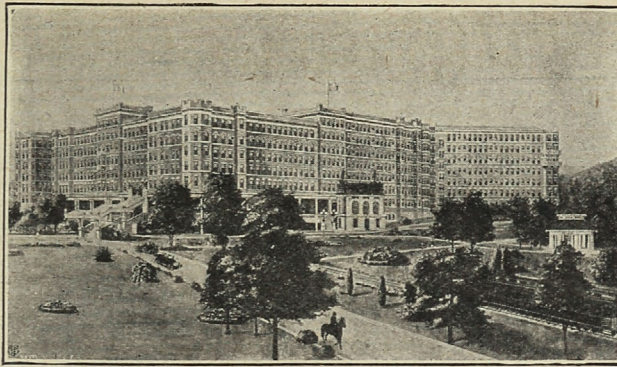
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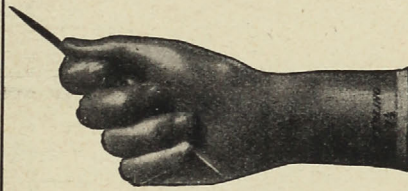
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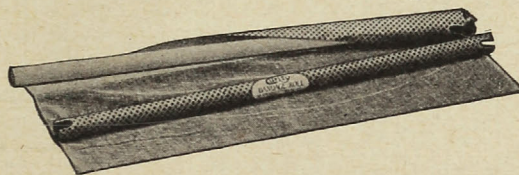
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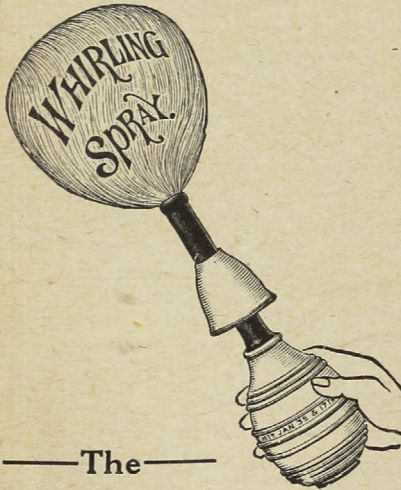
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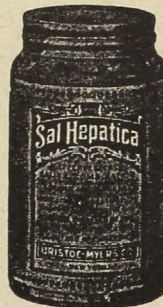
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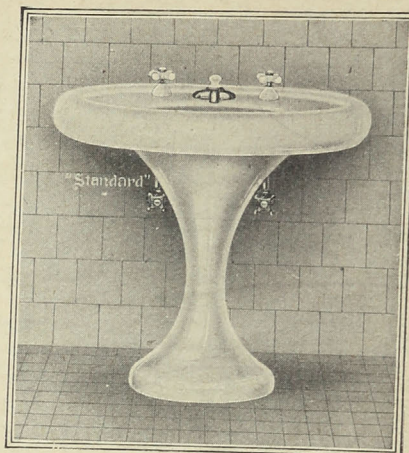


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# THE HOSPITAL, MEDICAL AND NURSING WORLD TORONTO, CANADA

A professional journal published in the interests of Hospitals, and  
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VOL. XXV

TORONTO, APRIL, 1924

No. 4

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## Editorial

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### The Confessional

In one of the regular staff meetings of a big city hospital the records' committee produced three inadequate histories. Two of them were of patients operated upon by a surgeon not on the regular staff, but who had been allowed the privileges of the hospital. He had not held a consultation before operating. One patient had an important organ removed and the biopsical examination by the pathologist shewed nothing abnormal. The second patient—a woman—had her appendix and both tubes removed, and died after a few days from what was reported on the history operation sheet as peritonitis.

The operating surgeon was present at the staff meeting. He said he did not know of the rule of the hospital that a consultation was called for in all major operations. It was suggested that all outsiders (doctors) bringing patients for operation should be notified by the office of such rule. The unlucky operator apparently was unaware that his-

tories were required. This lapse was, in the main, probably the fault of the house surgeon. It appears he had been ill; and his supply had not written up either case. The operating surgeon claimed that the woman who died did not die of peritonitis, but from shock. There seemed to be some doubt on the part of those present at the meeting as to shock having caused the woman's death. As to the case of the man upon whom he did a single orchidectomy, the surgeon had made a diagnosis of tubercular epididymitis. But in the post mortem-room examination no lesion was discovered.

To an interested observer this conference was a psychological study. The staff felt that their conjoint reputation was involved; the sisters that the name of the hospital was in danger: Explanations at least were in order. The thrashing out of both these unhappy cases in open meeting, though a somewhat unpleasant and trying proceeding we feel sure will have good results; and the liability of a recurrence will be lessened.

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### Nurses' Self-Government

The Student Self-Government Association of the Illinois Training School for Nurses, desire to promote and maintain high educational and professional standards; to promote all enterprises for making their school more progressive and a better home; to create unity and fellowship; and to regulate conduct of students. The management is vested in four members of the senior class, three of the junior class, two of the freshman class; one from the affiliated group; one of the hospital super-

visors, (a graduate); the house director, the educational director and the superintendent. The officers are four presidents, a secretary, a treasurer, the chairmen of the academic, social and "Big Sisters" committees, and school historian.

The Council meets weekly: its duty is to promote the purposes of the association; to investigate and take or recommend action upon all cases of misconduct on the part of the nurses and furnish a written report to the Hospital Committee.

The president, besides presiding at all meetings, shall call a special meeting on request of any two members of the Council or any ten students; notify the freshman students as to the date of their class organization; represent the Council at meetings of the Board of Directors. The first vice-president, beside acting in the president's absence, shall inspect all late-leave cards, signing all those approved and reporting any others to Council at once. The second vice-president, beside acting in the absence of the other two, appoints all monitors, receiving and making certain reports to Council. The secretary and treasurer perform the usual duties of such officers.

The school historian shall collect, arrange and preserve records of all events pertaining to the traditions of the school, and record worth-while current events.

The academic committee co-operates with the Education Department to promote the highest excellence in theory and practice. The social committee takes charge of social events. The "Big Sisters" committee assigns a "Big Sister" for each student before she enters the school. They do everything to make the home and life pleasant.

### Minimum Standard

In spite of the fact that the American College of Surgeons embraces and includes Canada; that Canadian surgeons agreed to this name; that the College undertook to visit all hospitals (with consent), with a view to reporting as to how they stood regarding minimum standard, in some quarters an unpleasant impression was left.

Medical men are familiar with the feeling. They often visit homes with a Queen Anne front and a Mary Jane back; a clean tidy parlor and a disorderly and untidy kitchen; in some homes the *mater* is always spick and span whether it be morning or evening, with her house in good order (though often it is otherwise).

So when the representatives of the College visited some of our hospitals they found some things to criticize; certain departments were not functioning, or not properly. Some hospitals had no records; others had no laboratory; others had no staff meetings; others lacked certain necessary equipment; others were not in as good order as they ought to be, etc., etc.

Now the spirit that prompted the inspection of the thousands of hospitals on this continent was not one that contemplated any harshness or hypercriticism; but rather one of sympathy and co-operation.

And the College has done great work. Thousands of suggested operations have been prevented; and as many necessary operations have been done more carefully than was the custom to perform them in the pre-inspection days. Many hospitals now keep histories of their patients—a thing they

never did before. Surgeons are desisting from the too common custom of fee-splitting, and altogether the hospitals are being better administered than ever before.

It was inevitable that some of the more conservative institutions would feel that these inspection visits were, to some degree, unnecessary intrusions and may have somewhat resented suggestions made by the inspectors.

Now that we have in Ontario and several other provinces hospital associations, all these matters can come up for free discussion; and when each hospital gets the others' points of view, it is probable the more conservative will see more clearly how it will be possible to live up to the minimum standard.

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### Convention Oratory

An editorial in a recent number of *The Nation's Health* complains somewhat bitterly of the amount of "boring oratory" that members who attend health conventions have to listen to.

"Patient objectors to platform oratory," he calls the hearers who return home with mixed feelings. "Such and such a speaker gave us the result of important laboratory investigations, another an illuminating analysis of statistical data, a third described some valuable and original administrative procedure. But, Dr.— how he bored us with an exhaustive history of child hygiene or anti-tuberculosis work and a labored exposition of its well-known principles!

"At every meeting we listen to half a dozen of these elaborately written (they are always writ-

ten) addresses with their strings of platitudes. The presentation of new facts is always worth while, but if a speaker has nothing new to say let him in mercy remain silent."

The writer's protest finds an echo in conventions of other bodies. Medical associations also suffer sadly in this matter.

To have something of interest to tell belongs to many of us, but the ability to tell it is a gift of the gods rarely bestowed. So we keep silent and he who has no wisdom arises with full mouthings.

### Psychology for Nurses

In a discussion of this subject by Dr. Donald Laird in the *Trained Nurse*, he opens by saying how helpful it is to a nurse to know something of the past behavior history of the patient. What is erroneously called the "mental make-up" is discovered by the trained observer by the acquired action patterns. These acquired action patterns must be scientifically studied by the nurse, just as she watches the pulse, temperature, and respiration.

Nurses in hospitals treating mental cases observe in a clear-cut condition the manifestation of certain past behavior histories. All nurses would do better work if they had some training in mental diseases.

Laird claims that the bizarre notions of the mental patient are not due to a disturbed soul or the afflictions of an hypothetical mind; but are rather disorders of behavior, and understandable in terms of the past history of the individual.



# The Hospital, Medical, and Nursing World

(Continuing the Hospital World)

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The official organ of The Provincial Hospital Associations

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 Selected Articles **TWENTY-SIX HOSPITAL BEDS TO AN ACRE\***

A. A. Cox, F.R.I.B.A., VANCOUVER, B.C.

The subject of hospital architecture is a rather extensive one, and I find it somewhat difficult to subdivide or condense it into a form proportionately with the time placed at my disposal.

Having had personal experience in designing many hospital buildings in Canada, I have always found that there is much to learn from the medical profession, and must say that I appreciate the co-operation and advice I have received on many occasions from those who have been closely interested in the departments of administration in institutions of this character.

As time goes on gradual improvements and new ideas in planning are noticeable, and at no period, perhaps, as the recent-past and the present, has there been such a demand for efficiency in hospital design.

The war having played such an unprecedented part and demanded unusual requirements in the various departments of medicine and surgery, the hospitals of to-day are calling for an increase of bed accommodation.

**SIMPLE DESIGN AND PLAN.**

The public sick must, however, be cared for and our efforts, therefore, be given to providing buildings of a simple design and plan, and all superfluous ornamentation abandoned in order to meet the handicap which has been set on constructional progress by the increasing cost of labor and materials. It is possible even with the plainest designs to acquire pleasing results and with a good plan in which utility has been carefully studied, there should be no cause for complaint or disappointment with external effects. Some of the plainest buildings existing to-day are the most attractive and pleasing, and so long as they exhibit their true character and at once

\*From a paper read before the 1920 convention of the British Columbia Hospital Association.

indicate the uses for which they have been designed their success has been achieved.

In connection with hospital planning, it is necessary that both architect and public should cease to regard a single building as a complete work. Each building or unit in a hospital group has a duty to perform towards its surroundings and the whole site. It is not enough that a building be effective in itself only—the point is—How much does it contribute to the general architectural scheme? It is a mistake to suppose that the best architecture would appear to advantage in any unsuitable location or place. The thing to be considered is—Does it harmonize with the surroundings and suit the character of the purpose for which it is designed—if not—then it will not be good architecture.

An essential part of architectural composition consists in striving after refinement in relation to the individual forms which constitute the whole. These in turn lead from one part to another, presenting finally an effect built up of the different units, especially in hospitals, and in this way a distinct rhythm is imparted to the design, and rhythm depends on the proper dividing up or balancing of the component parts.

The internal arrangements and planning of a hospital should not be sacrificed for external architectural effects; no matter how complicated the plan and grouping may be, the skeleton of the construction in the hands of an efficient architect can be made to suit the local conditions and requirements, and generally with satisfactory results.

Architectural composition can only be termed good when it ostensibly shows the character of the purpose for which it has been intended, for example:

A power house, or factory, or railway station generally show their respective characters, and a hospital building should also have a style befitting its own special purpose without an unnecessary display of ornament. One of the chief features desirable in a hospital is ample fenestration, or better known as window surface, and this to a great extent governs the style of building and gives a special character to it, and if properly grouped and balanced, can be made to compare favorably with the best examples in other classes of architecture. In many instances buildings in Europe, as well as in Canada, have been failures from the fact that the designers have sacrificed the internal plan and arrangement to the external effects, and when this occurs it cannot be pronounced

good design. Experience only will teach the art of good planning for hospital buildings. Specializing is the order of the day, and buildings have to be made to comply with the methods employed.

The next question to arise is: What do we consider the fundamental aim of a hospital? It is to aid and give service to the sick; in other words, it is the home for sick guests.

No matter how high its standards may be on paper, or how up-to-date its laboratories, surgeries, sanitary and sterilization systems, no matter how imposing and beautiful its architecture, or how perfect the equipment in the various departments, or how fine the technique and efficiency of the staff may be, the efforts will all be wasted, unless all of these activities be dedicated and directed to the benefit of the patients and service of the community.

#### HOSPITAL REQUIREMENTS SPECIALIZED.

Hospital requirements of to-day are as highly specialized as is the medical profession itself, some catering to one branch, some to another, and still others to all branches of the medical profession.

If efficiency and economy are the ends sought in building hospitals for either general or special treatment of patients, it is of the utmost importance that the designer should have an intimate knowledge, not only of building construction, but also of the various activities peculiar to the particular types of treatment involved, as well as the proper co-ordination of facilities and accommodation that will best suit the requirements to which the hospital will be devoted, for the simple reason that the arrangements and grouping of buildings which might be ideal for a general hospital, would not be at all suitable for one specializing in tuberculosis and other forms of disease.

An architect should not be relied on entirely to judge professionally about the actual grouping of departments in the plans, the arrangement of rooms and wards, and the details of them. It is unjust to require that he should know all about hospital management, or the medical and surgical features of a hospital. One may as well ask that he be an expert in civil, mechanical, and electrical engineering, an able manager of kitchen, diningroom, or laundry, or even greater, that he be an able physician or surgeon. The study of each and every one of these professions is needed in a hospital. The architect, however, should be thoroughly acquainted with the general

work in a hospital, and the routine of the institution, and general character of the greater number of diseases, and ordinary hospital cases. To obtain a thorough knowledge of good hospital planning, experience only will teach. Designing and construction are very intricate problems to solve. They need very careful study of the causes, in order to procure the proper remedies for failure, as seen in many existing examples to-day.

#### COPYING NOT GOOD POLICY.

Slavish following of past examples and hospital ideas, often "fads," will not lead to great success, and copying of such features is not advisable in a new building. It frequently happens, that when a new building is required, a hasty examination of various existing institutions will be made, with the result that only an extensive collection of indigestible data is made, while the fundamental study of the hospital requirements is lacking. It requires experience and very careful comparison before being able to judge the good or bad features of existing institutions. Great responsibility therefore rests on the board of management of a hospital, when appointing an architect, and they should always seek and secure a well-known expert, and one responsible to carry the works through with intelligence and success.

In regard to location and site for hospital buildings, there should be ample superficial ground area, an abundant supply of pure air, and all sunlight possible. They should be sufficiently remote from streets and railways, so that the patients may not be disturbed by traffic. Nothing is more detrimental than noise and germ-laden air to convalescent patients, or those whose vitality may be hanging in the balance, requiring every favorable condition to aid recovery. Beautiful surroundings are most desirable for patients, especially in the convalescent stages, when they can spend the time very largely in the open air, under shady trees or groves.

Every hospital should stand, if possible, in a park, rather than in the limited area of a city block. The perfect site should therefore afford air of the utmost purity, a maximum of sunshine, and perfect quietude. Some of the larger hospitals in Europe occupy thirty or forty acres and upwards. They are mostly of the pavilion type of plan, varying in height. Terraces on the ground floor, level with the floor, are often adopted, enabling the beds to be easily wheeled out of

doors into the direct sunlight, or a shady nook surrounded with singing birds and blooming plants; such environment means rapid convalescence.

As time progresses we find a larger proportion of sick persons going to the hospitals for examination and treatment. Formerly only the very sick were sent to a hospital, nowadays many only slightly sick go to be treated. This is perhaps because it is economical to do so, and their chances of recovery greater than if they remained at home. In the modern hospital to-day the patients have the advantage of special examination by the X-ray specialist, and not only have immediate, ordinary medical and surgical treatment, but also obtain such special forms of treatment by hydrotherapy, electricity, massage, etc., and there is no doubt that the earlier the disease is diagnosed the greater the chance of recovery. It is therefore advisable that sick or slightly sick should be admitted into hospital for examination as early as possible.

As I previously mentioned, mental happiness is the first aid to a patient's recovery. The body suffers or rejoices with the mind, especially when both are in a sensitive condition. A pleasant exterior, homelike interiors of rooms, flowers, landscape, decorations, and even pictures, are all helpful to recovery, and are therefore important and essential features in good hospital planning.

The beginning of a new hospital building is usually one of relatively small things in many ways, but it is never small in comparison with its potential future. The constantly increasing demands for hospital treatment assures the future growth of the institution, and this potential feature is a very important one, and because of this most careful consideration of the possibilities of future development is quite as important as is the study of the present needs and the method of meeting them.

First and foremost, the needs of the institution, present and future, should be carefully determined, and plans should be sufficiently developed that all cost of the buildings may be at least approximated.

While tentative plans for the entire group of buildings should be outlined, only the plans for the immediate requirements need be furnished in complete form; but the tentative designs of the ultimate development are essential in order that the relation of the proposed or immediate buildings to those of the future ones may be properly worked out as a per-

fect scheme. In other words, the real problem resolves itself into how to plan the first unit or units, so that while serving present or immediate needs, additions and alterations may be made to meet future accommodation and requirements at a minimum expenditure. The building must at all stages be a complete hospital in all its details, and the construction must be effected without handicapping present service. A proper proportion of patients and service spaces per unit must, at all times, be maintained, and neither sacrificed for the other.

#### PROBLEMS OF TYPE AND CAPACITY.

The problems of type and capacity of the units of a hospital system are usually local ones, and the guiding feature in their solution should be not only to serve the present but to forecast the future needs. It is, I believe, computed that not over twelve per cent. of sick people, on the average, use the hospitals; all the others are being taken care of in their homes, and to a certain extent neglected, consequently not recovering as rapidly as they should, owing to lack of hospital accommodation and proper nursing. Every hospital, therefore, should be architecturally as good as science can produce, and the equipment of the best type obtainable.

The vital question to settle when establishing a hospital is to ascertain what sort of building is necessary to meet the local requirements. It should be designed so as to take care of and accommodate any kind of disease that may come along; for instance, take a mining district where a greater number of cases may be those with broken limbs, and are to be long and tedious cases. In such cases the planning would have more particularly to consider the male surgical ward accommodation, which would be greater than other departments. Or in a milling district, where patients suffer chiefly from eye troubles, in its way requiring dark rooms, each disease demanding its special arrangements. Many other cases being of an ambulatory character, in which the patients are not confined to their beds. All these varieties of disease create a different type of building, and the architect should give special consideration to these important features, and provide arrangements to meet such requirements. Generally speaking, architecture in its decorative sense enters comparatively little into hospital design; the general construction, selection of proper materials, and good planning being the essential points for consideration.

## ACREAGE AND PATIENTS.

In this country we are apt to be too economical in regard to land area for hospitals, for the obvious reason that land is costly, especially in the large cities where large institutions are necessary. In England for many years a minimum was fixed at one acre to fifty patients, but at the present day this proportion has been considerably reduced. I think we should establish a rule setting forth the area required for the pavilions, exclusive of that occupied by the accessory buildings. In Germany and France they are far more generous in the matter of site areas; for example, Hamburg Hospital, 37 to 50 beds an acre; Nuremburg Hospital, 40 to 60 beds an acre; St. Denis, France, 26 to 55 beds an acre; Manchester, England, 46 to 50 beds an acre; New York, U.S.A., 100 to 150 beds an acre; Vancouver General Hospital, about 100 to 150 beds an acre.

Hospitals may be divided into two types of buildings or service, viz.:

(1) The "Medical," for treatment of patients.

(2) The "General," for service or administration. And these are again sub-divided into various groups, viz.:

The pavilion type; the corridor type; the combined type.

The first type, or "pavilion," affords light and air on two sides and one end of the wing.

The second type has a central corridor with wards and rooms on either side, and of course gets light from one side only, and sometimes at one end.

The third type affords rooms more or less grouped together, with projections from the main structure, which more or less obstruct light.

It would be impossible for me now more than to mention some other varieties of hospitals, such as:

Special hospitals for surgical cases; lying-in hospitals; hospitals for the insane; clinical hospitals; asylums, barracks and tent hospitals; contagious diseases hospitals; out-patients department; research department; nurses' home. Each of which has its predominating features and requirements, necessitating special study in planning.

In examining more closely the principles upon which hospital planning and construction is based, it is hard to lay down any hard and fast rules, owing to the fact that the requirements upon which the design and construction depends are continually changing and progressing by the aid of new dis-



coveries and research, and buildings have naturally to be erected to meet the modern demands from time to time.

Canada has produced in recent years a number of interesting hospitals, notably: The General Hospital at Toronto, The Royal Victoria at Montreal, The Vancouver General Hospital.

When we compare the great pavilions of the hospitals in Europe with the majority of our own institutions, we are impressed with the great size and extent of the institutions in Europe. The following features may also be observed, viz.: The disconnection of the main kitchen and service blocks from the patients' blocks, and the grouping of patients' blocks into definite departments to separate the diseases, the adoption of sanitary annexes at the ends of the pavilions, the greater provisions for special treatments, such as: hydro-electric therapeutics, special provision for scientific research and pathology, and also the spacious and remarkable laying-out of gardens and grounds. It is a question for the medical profession to say whether our own hospitals are equal to, or excel, those of other countries, although I believe it is generally considered that many of our Canadian institutions often excel in internal arrangements and plan, and sanitary equipment.

An intimate knowledge of dimensions of equipment and fixtures is most important in planning a hospital, the following items being worthy of notice. Beds are approximately three feet wide, six feet six inches long, and there should be a working space between them of at least three feet. The head should be set about sixteen inches to eighteen inches away from the wall. It makes not quite as much difference as to the width of the central aisles between the feet of the beds, if sufficient space is allowed for carts and wheel chairs, and for two persons to pass easily abreast. Eight hundred cubic feet per bed is considered a minimum allowance of space in public wards, and one thousand to twelve hundred cubic feet in private wards. St. Thomas' gives fifteen hundred to eighteen hundred cubic feet, average, and two thousand to two thousand five hundred cubic feet in infectious buildings.

#### POSITION OF THE BEDS.

The position of beds is a subject to be considered in laying out a large public ward. It is generally accepted here, and in England and France, that each bed should be placed between two windows, but in German and Austrian hospitals, and some

other examples, the beds are spaced, disregarding this rule and often with satisfactory results; for example: The Johns Hopkins Hospital, Baltimore, has beds grouped in pairs, and windows between each group. In England the local government board has made the following regulations: 600 cubic feet for adults; 960 cubic feet for children; 2,000 cubic feet for isolation wards; 1,200 cubic feet for military hospitals.

In planning a new building it is important that an allowance be made to the extent of one extra ward or room to every twelve occupied. This will afford the management a margin to empty a ward when needed for purposes of disinfecting or cleaning.

An ideal hospital would have separate rooms for each patient, but this is impossible, owing to cost of maintenance and service. German hospitals adopt the large pavilion type of wards, ranging from twelve to twenty-four beds per ward. French authorities claim that no ward should contain more than four to six beds, at any rate the tendency in modern buildings in Europe, as well as in this country, is to diminish the number of beds in the public wards.

There should always be sufficient isolation rooms for separating patients suffering with nervous disorders and those suspected of having infectious diseases. Sizes of operating rooms are somewhat elastic and depend in a large measure on the wishes and technique of the surgeons.

In regard to accommodation, some experts have declared the necessary bed accommodation should be regulated in the proportion of five beds to every one thousand of population in cities of over one hundred thousand; smaller cities needing about four to five beds to the thousand population. These figures are approximate, and would have to be varied to suit unusual conditions when necessary.

#### SPACING OF PARTITIONS.

Spacing of partitions is another important factor in laying out of a new hospital. The spaces between blocks or partitions should not be less than 60 feet clear. Johns Hopkins Hospital has 60 feet, and many large institutions have similar spaces. Manchester, England, 65 feet; Camberwell, England, 90 feet. As a rule an angle of 30 to 45 degrees from the lowest under cell of opposite building will be a safe rule to follow.

Sun rooms at ends of partitions could be made larger with advantage and enclosed in glass in cold weather. They would

be of greater use for convalescents and feeble patients who spend much of their time in these sun rooms, and should the ward become overcrowded a number of beds could be placed in them and serve as sleeping porches, and under such conditions a toilet and sink would greatly simplify and reduce the labor of the nurses, if located in or near the sun room.

Roof gardens are also used in some English hospitals, and are giving excellent results. They could be adopted in British Columbia with equal advantage. The climatic conditions are most excellent, and there is no doubt, as I have stated before, that surroundings and fresh air and scenery accelerate convalescence to a marked degree. Suite of private rooms or wards on the roofs with gardens in our hospital would be most attractive to the wealthier class of patients who would be only too glad to avail themselves of such charming location during the period of sickness.

The cost of buildings, furnishings, and maintaining a hospital has increased very heavily during the last twenty years. The reason for this increase is not entirely due to the introduction of social needs. It is caused, firstly, by increased land values, price of building material and workmen's demands for larger wages and shorter hours; secondly, improvement in technical equipment and fittings, such as heating, ventilating and electric lighting, and other sanitary arrangements, and the installation and maintenance of these necessary improvements.

The public demands for better housing of patients in the hospitals has also increased the cost considerably; private rooms having a greater cubical space than that usually given in public wards, means larger and more expensive construction. A two or three story block is no doubt rather less in cost, cube for cube, than a single story block. Cost of roof and foundation is about the same; on the other hand, walls are thinner and foundations less, and no staircases or fire escapes or elevators are necessary for safety for one-story blocks, and these are items which go a long way towards the cost.

There are many other reasons for the variation in cost, such as the proportion of public wards to private rooms; economy of plan and the expansion of the first unit of construction wherein has to be located the service accommodation for succeeding units. The operating department which would be desirable in a fifty-bed hospital would be ample for a build-

ing with double that number of beds, and so it is readily seen that a small hospital costs more in relative proportion than one of larger capacity.

A dozen designs could be made for any hospital, each having points of merit, but it is safe to imagine that only a few of such designs would be ideal from every point of view. If you ask the question: Is there to-day a typical and accepted or standardized ward limit? the answer would undoubtedly be that we are undergoing a transitional period. The medical profession is classifying and specializing on various diseases, and this, in turn, demands special attention to planning to meet the newer and modern requirements.

The ventilation of hospitals was much neglected until the latter part of the nineteenth century. Since that period the subject has received better consideration, with good results. The question of ventilation, however, is still an imperfect and unsettled proposition. There are, generally speaking, three systems in use to-day:

(1) The "natural" interchange of air by windows, doors, and sometimes chimneys, and this method is still finding favor, and being employed by some of the leading architects to-day in some of the largest and best public, as well as private, buildings.

(2) The "asperating system" by mechanical means. In this method the vitiated air escapes from the room or ward through ducts and openings near the ceiling, the ducts being heated by steam or hot water coils sufficiently to cause an "updraft," and to increase the efficiency an electric exhaust ventilator is placed near the top of the main duct, controlled by a switch when occasion demands.

(3) The "down-draft" system. That is, the fresh air is introduced at the ceiling level and forced downward by means of a powerful fan located in the basement, the cold air being forced across a system of heats and thence into the flues under pressure. With this system all windows must be kept closed and air-proof, or the system would be "cross-circuited" into the foul air vents at the floor level.

#### OBJECTIONS TO PLAN.

There are several grave objections to the plan of abstracting the foul air near the floor.

(1) It is opposed to nature's law of atmospheric pressure, and therefore requires the use of special abstracting contrivances.

(2) The drawing down of the foul air causes it to be breathed over again, which is a most dangerous proceeding, and should never be allowed.

(3) The fresh air supplied is apt to be forced in overheated, in fact burned, and so made unfit and unhealthy.

(4) The long, tortuous flues cannot be kept clean, and will therefore become lurking places for dust and germs.

The relative merits of the "upward" versus "downward" systems of ventilation may be estimated from the following considerations:

(1) The natural direction of the currents of air from the human body is, under ordinary conditions, upward, owing to the heat it acquires in the lungs being specifically lighter than the surrounding air in the room, and this current is an assistance to the "upward" and an obstacle to the "downward" ventilation.

(2) The heat from all gas flames used for lighting tends to assist "upward" ventilation, but elaborate arrangements must be made to prevent contamination of the air by the lights if the "downward" method be adopted.

(3) In the "downward" method in large rooms an enormous quantity of air must be admitted, if the occupants are to breathe pure, fresh air, or about three times the amount which would be found necessary in the "upward" method.

#### VENTILATION REQUIRES STUDY.

Ventilation is a science, and it requires long study to master all its complications. There is, perhaps, no other subject with respect to which there is greater diversity of opinion. It will, however, be admitted that the system which secures the requisite change of air in the simplest manner is the one likely to prove generally acceptable.

It has been argued by some that because carbonic acid gas is about fifty per cent. heavier than air, it is desirable to ventilate by a "downward" current in a room, rather than an "upward" one. This, however, is not accepted by some well-known experts. Prof. Woodridge states:

"The carbonic acid gas by respiration from the lungs, and passed through the skin, is as thoroughly diffused in the warm air currents from the body as is the same gas made by a candle or gas flame when once diffused in the air currents ascending from those flames. Carbonic acid gas when once diffused in air can no more settle downward out of the air and occupy

the lower level of a room than salt, because heavier than water, can settle out of the sea water to its bottom."

One cubic foot of gas consumes the oxygen of about eight cubic feet of air. With a temperature of seventy degrees Fahrenheit the temperature of the air expelled from the lungs is from eighty-five degrees to one hundred degrees Fahrenheit. It is the organic matter suspended in the watery vapor expelled from the lungs and exhaled from the body wherein the danger of disease lies.

#### VELOCITY OF FRESH AIR.

The velocity of the fresh air supply should never be greater than two feet per second, if draught is to be avoided. Investigations have shown that the evil effects of bad air are due not primarily to any lack of oxygen in the room, but to excessive heat and humidity.

The principal symptoms experienced in a badly ventilated room are due to the influence of "warm still air" upon the human system. Such an atmosphere causes a rise in body temperature and pulse rate, and fall in blood pressure and general feeling of discomfort, and a marked disinclination to physical exertion. Any temperature over seventy degrees Fahrenheit (except where air is in constant motion) is lowering to efficiency, and injurious to health. It may generally be assumed that when a room is so crowded that the floor area is less than two hundred square feet per person, some sort of special ventilation will be necessary in order to secure a reasonable change of air.

It has frequently been observed that in the "forced draught" system of ventilation trouble has arisen from the engineer trying to economize fuel by operating the fan at a reduced speed, or not at all. Sometimes the fan is doing its part, while wrong proportioning of registers, and lack of "volume dampers" deliver the pressure so faultily that the air is changed too rapidly in one section, and too slowly in another.

#### SUPERVISION AND ATTENTION NECESSARY.

In an "indirect" system any desired combination of temperature, moisture, variability and movement can be obtained, if proper supervision and attention be given to the operating of the apparatus. Humidity depends on the difference in temperature between the air as it leaves the humidifying chamber and when it enters the room or ward. If the two places have

the same degree of temperature, the humidity will be one hundred per cent., but if they differ in temperature, say, by twenty degrees, the humidity will be only about twenty-five per cent., showing the importance of keeping the air at a regular and equal temperature.

Ventilation has given sanitariums a long chase. Air has been admitted to rooms at the ceiling and discharged at the floor level, and vice versa, forced in at one end and sucked out at the other, and each method has been more or less approved. Air deflectors and revolving fans and blowers have been installed, windows have been opened at the top, at the bottom and in the middle, windows have been removed, and walls abandoned, and still the problem of perfect ventilation has not been solved to satisfaction. There is ventilation with moisture, and ventilation without moisture, and with a moderate amount of moisture. The psychic element, I think, also enters very largely into the problem of ventilation, and the only real thing that stands out as of permanent moment is temperature and cleanliness, and there is no doubt that if in the solution of the ventilation problems we gave more attention to the regulation of air, and to the age, condition and activities of the persons who occupy the rooms, better results would be effected.

#### FEATURES OF HEATING.

In regard to heating: It is an open question whether the system of heating by steam and hot water have an advantage over the old style stove, excepting for convenience of operation. There are at least five main features to be considered, in order to insure perfect heating, viz.: temperature, humidity, purity, movement and variability of air, and each is a very important factor in providing good results. In heating by steam or hot water direct radiation, it is not easy to obtain a constant, gentle movement of air, which action is one of the chief factors that make outdoor life so beneficial, and whereby humidity and variability are naturally supplied.

To secure purity in the air a disinfecting system should be adopted. In connection with the humidifying of air, we perhaps scarcely realize the importance of the use of moisture in the air, and the extent to which this system is adopted in buildings other than hospitals; for example, the humidification of air is one of the essentials in cotton mills, wool and silk mills, bakeries, in the candy, cigar and tobacco factories. How much more desirable, therefore, that our hospitals should have all the benefits to be derived from such a system.

## INDIRECT SYSTEM DEVELOPED.

Indirect system is the most highly developed system of modern heating. The air is warmed by passing over pipes or radiators of steam, and then blown or forced into the rooms or wards. With this system the desired temperature, humidity and movement of air can be secured, if operated by an experienced engineer. The apparatus is subdivided into four parts: (1) The humidifying chamber; (2) The steam-heated coils or radiators, which warm the air before it enters the humidifying chamber; (3) The fans which drive or force the air through the building; (4) The ducts that carry the air to the wards.

Hot water heating for small buildings is the better medium or system for "direct" radiation in wards.

Comfort depends to a large extent on the lighting, both natural and artificial. Every patient's room should have direct sunlight during some part of the day. The worst type of artificial lighting in a patient's room is the ceiling fixtures, for it puts the glare squarely in the patient's eyes when lying in bed. A room never looks so cheerless as when illumined by light diffused from a white ceiling, for practically then all shadows are eliminated, and shadows are most essential for the satisfaction and repose of the eye. In architecture and art, high lights and shadows are the essence of a design or picture composition. The study of light values is therefore of extreme importance.

## ILLUMINATION IS IMPORTANT.

Illumination should, therefore, play a very important part with sick patients, in giving comfort to occupants of the various rooms, doing away with the garish effect of exposed lights, which are always annoying, even to persons in good health. Many schemes have been put forth by various architects and others for lighting a hospital, and many have fallen short of success. The general tendency to-day is to conceal the lights as much as possible, and keep intensity fairly low. (1) "Low" intensity of light, to enable nurses to wait on the patients at night; (2) A "medium" intensity for patients' reading; (3) A "high" intensity for medical examination at beds; (4) Wall plugs can always be used with advantage. Where wards are very large, dimmers may be used.

Regardless of any special type of construction, no hospital or institution of twenty-five or more beds should be without



an adequate method for giving fire alarm, and strictly observed fire drill of every able person employed in the building. The first requisite in protection against fire is the use of all possible care in not letting one happen. The second is in recognizing its existence quickly when it does happen; and the third is to be provided with readily accessible apparatus for extinguishing it.

While reinforced concrete and other methods of fireproof construction (so called) have largely eliminated the danger from fire, too great stress cannot be laid on the danger arising from smoke. A fire may originate in the contents of the structure, and without injuring the building itself, but will generate enough smoke to fill the corridors and rooms completely, causing suffocation, and often with fatal results or panic.

Special attention in planning should be given to the subdivision of the building, and ample means of exit for the various patients. Where possible it is advisable to have each stairway entirely enclosed by a fireproof partition, or lobby, with lower exit doors, as near the ground level as practicable, thus eliminating the danger of stair walls becoming filled with smoke.

In hospitals decorative coloring has a much greater therapeutic value than commonly supposed. Brilliant and violent contrasts have by experiment been shown to excite the nerves of sick patients to a degree causing actual distress.

A few remarks on color and reflected light values will perhaps be worthy of consideration; for example: the dark reds, greens, and browns will reflect only ten to fifteen per cent. of the light values. White, cream and yellow, up to orange, will reflect sixty per cent. down to twenty, according to depth of the color.

#### DECORATIVE COLORING.

The greens and greys are generally admitted the best for wards and private rooms, as they are easy on the eyes, and quieting to the nerves, but there is a limit to their usefulness, based on the amount of uninterrupted direct window light. For night use the white and cream are best, because they deflect glaring points of light which are disturbing to the repose of a patient.

Time will not permit me to-day to go into details of equipment of an up-to-date hospital kitchen. The subject is an

interesting, as well as an important one, and deserves much consideration. I would have liked, had time been given me, to have made some remarks on the military hospital kitchens and equipments, many examples varying in size, having been installed under my own personal supervision during the war, in British Columbia.

In concluding this paper, let me say that I have ventured these few remarks and suggestions, relative to the comfort of the patients, and hope that their enforced sojourn may be a trifle less irksome while detained in the hospital under treatment. I conceive it to be one of the functions of hospital service to minister to the speedy recovery of all cases, providing accommodation and surroundings which are best adapted to mental happiness, as well as supplying conditions and medical services of the highest order.

The more up-to-date and perfectly designed and equipped hospitals we erect the more we serve the community at large, and it follows in fact that we are simultaneously improving our province, and indirectly enriching our country as a whole, as well as strengthening the Empire to which we proudly belong.—*Hospital Management.*

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### THE PROMOTION OF SURGICAL EFFICIENCY IN HOSPITALS

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Workmen's compensation acts have increased the evident responsibility of those hospitals which admit for care and treatment persons injured by industrial accident. The moral responsibility existed before compensation laws were enacted. Nevertheless, officers of institutions doubtless feel the pressure of that responsibility more keenly now that business plants are compelled by law to pay for care of workers injured during hours of employment.

There is little doubt in my mind that the amended compensation law of Pennsylvania, for example, has had a similar effect in increasing surgeons' attention to details, and intensity of supervision of treatment, when industrial patients come under their personal care or enter hospital service. It is much easier to forget to visit or to postpone visiting a wounded man, who is not expected to pay a fee, than one

whose bill for professional treatment is guaranteed by state law and the treasury of a mining company or a successful manufacturer.

One indirect benefit to the community, therefore, will be an improvement in surgical efficiency in dispensary and ward work of hospitals and advancement in the scientific equipment of individual medical men. This gain will be found worth while to the taxpayer, the lawmaker, and the whole medical profession.

An immediate result of industrial pecuniary responsibility to the hospital and to the doctor has been a marked improvement in keeping records of patients. This is shown in steps being taken to have histories of previous injuries and illnesses and the details of treatment and results of the present wounds duly recorded. For years, many hospitals gave so little attention to this matter that information was often not obtainable even in serious cases, subjected to months of treatment, with a reasonable prospect of judicial inquiry into the facts of an accident. I need not say that many, perhaps most, surgeons today have no adequate record system of their private surgical work, so far as description of injury, the outline of treatment, or the condition of the patient at the end of treatment.

The custom in vogue in a large number of metropolitan hospitals exacts unpaid professional work from its surgical staff. This enjoyment of cheap service is destined to be lost by the demand for greater efficiency than is to be obtained by its continuance. No argument of value justifies the creed that surgeons should give their services to hospitals for their pay patients. The habit of expecting this sacrifice of time, thought and skilled labor without remuneration is a traditional one founded upon the old notion that a hospital was a refuge for injured men who had fallen among thieves and been stripped of their purse and clothing. This idea is formally shown in the official seal of a hospital in Philadelphia.

Passage of time has changed greatly this status of hospitals. Now many persons are permitted to enter the walls of such institutions for free treatment, upon whom the donations of the charitable public are unnecessarily expended. Baltimore became a world centre of the highest type of surgical and medical service when the trustees of Johns Hopkins University brought to its hospital staff men of great intellectual and professional promise by paying good annual salaries.

Why should hospital authorities be satisfied with the fag end of a distinguished surgeon's or physician's day? All of us doctors who have lived in close association with hospital administrative affairs know of inadequate service rendered by surgeons and physicians, whose private practice necessarily demands their more instant and attentive professional skill. Men of talent and high repute are to be found who will accept unpaid appointments on hospital staffs and then thrust the real work of their posts year after year on junior assistants. Of what value are such officeholders to hospital efficiency? Better would it be to give short shrift to an unpaid surgeon and appoint a wideawake incumbent at a reasonable salary.

The abandonment of the fractional term of ward service, so common in the United States, will promote efficiency in the conduct of hospitals used for industrial surgery. By fractional service, I mean that the attending surgeons, and physicians also, serve for only two, four or six months in each year; and at the end of these periods patients are transferred to another surgical chief. Under such schedules a serious injury may oblige a patient to have three or four different surgeons before he is discharged, improved or cured.

The short or fractional term of surgical attendance should be discontinued. A continuous service from year to year under one chief, with junior surgeons trained to continue the records, discipline, methods, and scientific efficiency of the particular section of the hospital, will give the most satisfactory institution for treating injured industrial employees. No manufacturing plant is likely to reach the status needed to attain a wide reputation for successful operation and a proved output, if it shifts its department foreman three or four times a year. The continuous term of surgical service need not prevent the employment with salary of a number of chief surgeons. Each one of them, however, should have his own section or ward, manned by subordinates, who should remain long enough to develop into surgeons of discrimination and good judgment. The senior of these understudies should be given good reason to believe that, if proved deserving, he is likely to become a chief surgeon.

The nursing force should be organized in much the same way as the surgical personnel of a ward or section. Frequent changes of nurses in operating room, superintendent's office, or ward service, lead to confusion and bring failure to obtain proper standards of nursing efficiency. The necessity to train

novitiates in nursing greatly impairs the progressive development of a hospital, unless care is taken to prevent an undue number of partly trained pupils being put into ward service at one time. Cheap nursing is almost as bad as cheap surgical supervision.

Hospitals desirous of obtaining income from large numbers of compensation patients or private pay patients will find it a good policy to pay the surgical staff and the nursing staff such stipends as will secure an intelligent, well trained, conscientious and up-to-date personnel. It is probable that it is the short, fractional terms of duty which tempt some surgeons to accept high positions in several hospitals. Careless attention to duty is pretty certain to be developed by this attempt to divide one's devotion between three or four institutions. The hospitals receive half-hearted service, the patients are too often shifted to a new chief, and the surgeon himself constantly comes up against obstacles which cannot be overcome in a few weeks. The result is slovenly work and a divided loyalty.

I published some years ago a protest against the administration of anesthetics by inexperienced hospital assistants. This peril to patients has been considerably lessened in recent years, though it is still a responsibility for further administrative consideration.

A source of inefficient care for the safety of persons brought to the ward for emergencies is the assignment of that duty to inexperienced doctors and nurses. Surgical alertness, trained judgment, and wise treatment are not to be expected from young physicians just graduated from the medical college or in young women still in classes for training nurses.

An accident ward needs the best trained members of the resident medical staff within immediate call, day or night. It needs at least one experienced graduate nurse, who is capable of quick action in medical and surgical emergencies; it needs supplies at hand to deal immediately with shock, hemorrhage, poisoning, and impending death. There should also be sufficient muscular aid within call, to be immediately available for ejection of midnight intruders or drunken busybodies.

Improvement in laboratory investigations of disease will probably be needed in some hospitals to make them satisfactory to the business men who are required by law to pay the bills of workmen suffering injury in industrial plants. The advantage of having social service departments instituted in all hos-

pitals will soon be recognized by many more institutions than is the case at the present time. Persons injured through war casualties have been shown to need muscle training, psychological influences, and physiotherapeutic agencies, if complete or nearly complete return to usefulness is to be secured. Apparatus of varied construction will be of much value in this direction, in industrial surgery, especially when used in association with social service or the so-called welfare departments of the reconstruction movement. Mental occupation, vocational training, and community treatment stimulate automatic reactions; and hopeful energy is of great assistance in many forms of ill health after sudden accidental disability.

My final topic in this discussion of defects in medical organization of hospitals is merely a corollary of already mentioned sources of trouble. When the medical chiefs are negligent or inefficient the executive department is pretty sure to show evidences of want of grasp of the essential duties of a hospital. Trustees, however, soon defer to the medical staff in medical matters, if the members of the staff show energy, loyalty, and progressive, businesslike qualifications.

It is when the doctors neglect their professional obligations, permit slack service in their personal assistants, and condone inefficient work in dispensaries, wards and laboratories, that the nursing units assume or are obliged to accept authority belonging properly to the interns, resident physicians, and chiefs. The heads of nurses' training schools, the nurses in charge of the wards, and even the pupil nurses, not only live in the hospital but have a continuous service extending over several years. The unpaid attending surgeons and physicians with fractional terms of duty are at best only occasionally within the hospital walls. The resident physicians and interns, who, unfortunately have no prolonged connection with the hospital, reflect the character and manners of their chiefs. It is not unlikely, therefore, that the tone of the wards will gradually reflect the personality of the nursing overseers. Hence it is that in many institutions for the sick and hurt there is too much assumption of medical authority by nurses. This is often seen markedly in the conduct of nurses in private practice after graduation.

To obtain a perfect hospital, cheap medical labor must be given up, fractional terms of service converted into continuous responsibility, medical demeanor and earnestness instilled into the minds of the surgeons and physicians, and interns and the

nurses taught that their function is to obey orders and to maintain discipline in the wards. Poor service often arises from neglectful and careless demeanor of medical officials in hospitals. The medical staff, therefore, is usually the underlying cause of inefficient care of the sick, insubordination in executive departments, and defects in nursing.—*New York Medical Journal*.

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**ALBERTA HOSPITAL CONVENTION HELD AT  
AL AZHAR TEMPLE, CALGARY,  
SEPT. 6th and 7th, 1923**

*[Continued (and completed) from our March issue]*

Let me say that one becomes a victim of suggestibility when one lets oneself be mastered by a good talker, allows oneself to be carried away by his eloquence, without perceiving that he is an egotist, a poseur—that he influences one to thoughts and deeds of which one's reason disapproves.

The popular cure of the hour, to which humanity accords temporary allegiance is at the present time being demonstrated by the Rev. Dr. Price. I attended a meeting and heard a recital of foreign cures. We should not be asked to accept this recital of cures when there is ample opportunity to demonstrate his mystic healing in our own hospitals. If he is the special instrument of the Almighty in the healing of the sick and maimed at Victoria Park it is inconceivable that Providence would not otherwise bestow upon him equal powers to promote the healing of the poor, unfortunate, crippled children in our Children's Red Cross Hospital, where at present there are many.

Dr. Deane has been doing wonderful work by the operative route, but this is a tedious and painful method, and like all human endeavor, is not always perfect. I assist Dr. Deane with many of these operations. I have talked the matter over with him, and I invite the Rev. Dr. Price to show his disciples that he is genuine by the healing of some of these unfortunate children. From the bottom of our hearts we will wish him success, and accord him every possible courtesy. What we would not do to see these innocent little ones enjoy the lives of healthy children. Let me give you a case that appeared here before our children's hospital was opened. It is the case of a little girl about twelve years of age who

for years was so deformed that she walked on her knees. After several years of such suffering the community became interested and she was sent to Calgary to see what surgery might be able to do for her. A little ether was administered, the spastic condition of her muscles relaxed. Splints were applied to keep her from flexing her legs. After a few days they were removed, she was sent home and told if she ever came back like that again she would be properly spanked. She said she would not, and so far I believe she is as active as any other child. This case I believe is typical of the cures effected by Dr. Price, as learned from his own description and from the advertising sheets as written by his agent, the Rev. Dr. McCrossin. If you could picture this child with her legs from the knees to the foot, drawn up closely against the thigh, and walking on her knees on a platform before an audience of ten thousand, waving their handkerchiefs in excitement, and there and then told, by someone in whom she had utmost confidence, that she was going to be immediately cured and ordering her to get up and walk, which she would of course do, you might form some idea as to the sensation created in that audience, and incidently what the love-offering would be when the collection plate came around.

Take the case of Dr. Elisha Perkins, of Norwich, Conn., and his marvellous tractors, more than a hundred years ago. Contemporary historians agree that he was a splendid American, and a devoted, hard-working physician. In 1796, he became convinced that he had observed striking beneficial results when the affected parts of patients were touched by certain metal. Accordingly, he fused several metals and made a pair of short rods, tapering to a blunt point. They contained a little gold. With these he stroked his patients. The curative results were amazing. "Tractorization" became the fad of the hour. "Pains in the head, face, teeth, breast, side, stomach, back, rheumatism and all joint and muscle pains" were cured by the tractors, according to Dr. Perkins' announcement. The bent straightened up and walked erect. All maladies yielded to twenty minutes' downward stroking with the magic tractors. Patents were taken out here and in England. They were supplied to clergymen free; other professional men paid £5 a pair for them, while the price to the less fortunate was £10.

Perkins became famous; he had proved himself a benefactor of mankind and his fortune was made. A magnificent hos-



pital, called the "Perkinean Institution" was erected in London. Lord Rivers was president and Sir William Baker, vice-president. Perkins' son was in charge, and at the end of three years he published the details of 5,000 cases treated there, although it was estimated that fully 1,500,000 persons had been "cured" in all by tractors. Finally, some hard-headed English doctors proceeded to test their theory that the cures were the work of the imagination. They made some "tractors" of wood, painted them to look like the Perkins' invention, obtained the same results from using them, published these—and the bottom promptly fell out of the tractor market. The "cure" went the way of all baseless "cures" that had had their day and failed. None of these cults have ever contributed anything to medical science, or to the bettering of the health conditions of mankind.

Let me now, during the short time still at my disposal, endeavor to point out to you some of the works done—when God did surely answer the cries of his people by giving to the world such immortal benefactors as Hippocrates, Galen, Harvey, Hunter, Jenner, Pasteur, Davy, Wells, Morton, Simpson, Lister, Koch, Roentgen and many others, right down to the discoverers of insulin.

After the time of Hippocrates, 460 B.C. and of Galen, 500 years later, the people drifted into mysteries and follies; and all the accumulated medical knowledge of the ancients, including even the secrets of anesthetics were lost, and were not again recovered until the middle of the last century. Throughout the middle centuries medical education was at a low level. Up to the beginning of the seventeenth century, doctors who had studied anatomy knew nothing of the flow of blood, nor of the heat of the body. William Harvey was the first to show that when the heat contracts it forces the blood into all parts of the body. His great discovery of the circulation of the blood was announced to the world in 1616. Some years later an Italian named Malpighi discovered the capillary veins, that is the minute terminal blood vessels connecting the arterial with the venous system, thus completing Harvey's great work. Much was now known about the human body and physicians and surgeons began to merit a certain degree of respect. Surgery had previously been in the hands of men called barber-surgeons. During the seventeenth and eighteenth centuries considerable progress was made in the advancement of medicine. John Hunter

was an outstanding figure of this period. He devoted himself to practice, and the teaching of his profession and the study of anatomy. He paid special attention to comparative anatomy, or the structure of the bodies of various animals as compared with one another and with man.

It was one of John Hunter's pupils, Edward Jenner, who in the latter part of the eighteenth century made himself famous by the discovery of vaccination for smallpox. The ravages of this disease scourged all races. There were few great ladies in Europe whose faces were not disfigured by unsightly pock-marks. After successive generations of vaccination this disease has lost its terrors. When it occurs in a race, such as the colored race, whose ancestors never were vaccinated, its ravages are as frightful as ever. It is a disease which should be banished from all countries, as it has been from Germany, where compulsory vaccination is rigidly insisted upon.

It was Jenner also who taught the difference between typhus and typhoid fever, and now people who are likely to be in danger of infection from these diseases are vaccinated or inoculated, also.

Louis Pasteur, early in the nineteenth century gave the first great impetus to the study of bacteriology or the study of microbes. Pasteur was a French chemist and while professor of science at Lille University he paid a visit to a brewery and became deeply interested in the question, "Why does beer turn sour?" After much study and experiment he found that beer, wine and milk are turned sour by the action of living organisms called microbes, and that these microbes are everywhere around us; so he gave the following advice, "Keep your air free from microbes, or keep your microbes from your vats, and your milk and wine and beer will not turn sour."

He also discovered the microbe which caused anthrax. He became famous for his discovery of the cause of rabies in dogs, which was a terror to the people of the time, as a bite from a mad dog was certain to produce hydrophobia in man. Pasteur discovered the microbe which caused this disease, and later he found a way to make a person who had been bitten, proof against its ravages. As a result of his discovery this disease has been wholly stamped out in some countries. The Pasteur Institute of Paris, and an institu-

tion of the same name in New York, are memorials of this man's great gifts to his fellow men.

There is plenty of evidence to show that surgery was practised by the ancients, evidently with a good deal of success, even to the extent of doing bone grafts. Through the middle ages and up until early in the nineteenth century, operations were performed only as a last resort, because the secrets of anesthesia, to some extent known by the ancients, had apparently been lost. Many medicines were used by the ancients by which a condition of insensibility was produced. Throughout all the centuries experiments were continually made with many drugs, with a view to producing a satisfactory anesthetic. Until such was procured, any one requiring the amputation of a leg, for instance, was held down by strong men while the operation was being performed.

In 1799 Humphrey Davy published an account of his extensive researches concerning nitrous oxide, and stated that he believed that nitrous oxide gas, as it appeared capable of destroying physical pain, might probably be used with advantage during surgical operations where there was not likely to be any great loss of blood. It has since been extensively used by dentists, and is an ideal anesthetic for operations of short durations. The credit of making practical use of nitrous oxide, or laughing gas, belongs to Wells, a dentist of Boston.

Morton, his partner, being familiar with the action of nitrous oxide and knowing the similar effects of ether began to experiment with ether upon himself and upon animals. This occurred in 1846, and since, its use has become general, and its method of administration almost perfect.

Within a few months Dr. James Simpson discovered the practical use of chloroform as an anesthetic. These are the three main general anesthetics. Other things such as ethyl chloride are used. Ethyl chloride is frequently used to precede the administration of ether, because it is pleasant to take and suspends consciousness within a moment or two. In certain cases where a general anesthetic is inadvisable, spinal anesthesia may be resorted to. Of local anesthetics there are many employed with the greatest satisfaction, such as cocaine, novacaine, anocaine, eucaine and many others.

After the discovery of anesthetics surgeons began to undertake great and serious surgical operations. But everywhere, surgeons were at their wits' end to know what to do

to overcome the infections which followed. "Hospital sickness" or gangrene followed nearly all operations. It was scarcely possible to get the wound made by the surgeon's knife to heal, and the death rate following surgical operations was appalling.

About this time, Joseph Lister (Lord Lister), a young English surgeon, had his thoughts arrested by the discoveries of Pasteur. He believed that if the fermentation in milk, wine and beer was caused by vegetable organisms or bacteria that the infection of wounds was due to invasion of the wounds by the same organisms. He set himself to work in Glasgow Hospital, where infections were frightful, to protect the wound from the bacteria laden air. To accomplish this he used carbolic acid to cover the wounds. This formed a crust and as it is a powerful germicide it prevented the development of gangrene, but it caused painful and frightfully deforming scars. This was abandoned and carbolic acid sprays were used in the operating room. This was disappointing, and although Lister's idea that air infection was very dangerous has proved fallacious and the spray has fallen into disuse, the present day technique is the direct outcome of his teaching.

Lister soon learned that the infectious agents were present everywhere and that their number in the air was inconsiderable as compared with the forms which existed in the soil, clothing, upon the skin and mucous membranes of the body, in the beard and hair, and especially under the nails. He came to the conclusion that the infectious material was introduced by the hands of the surgeon or nurse, or the instruments, or the dressings applied to the wounds. Since his day the most rigorous surgical cleanliness has been insisted upon in handling wounds, and by means of great heat all instruments and surgical dressings, including surgeon's gloves, and everything in fact that comes in contact with an open wound, are sterilized. He was the pioneer in antiseptic surgery and it is now possible to undertake surgical operations at any time while the patient is undergoing a comfortable sleep, and with little anxiety about serious infection.

Another great scientist to follow up the work of Pasteur was Robert Koch, a German. As early as 1865, Villemin demonstrated the infectious nature of tuberculosis, when by inoculation with tuberculous material he communicated the disease to healthy susceptible animals. Koch, in

1882, discovered the bacillus tuberculosis which is now known to be the specific cause of the disease. While Pasteur discovered the microbe that caused anthrax and learned how to prevent that disease, Koch learned the whole life history of microbes and taught scientists how to study all microbes. He discovered also the microbe which caused cholera, and found a way of preventing typhoid. As in other infectious diseases many attempts had been made to produce an artificial immunity against this disease. From this time onward much work has been done and the critical scientific world has become quite satisfied as to the causes of pneumonia, diphtheria, tetanus, influenza and bubonic plague, besides many diseases of cattle, horses, sheep and other animals and insects. There are certain infectious diseases, for example, scarlet fever, and measles, the specific causes of which have not yet been discovered, due it is believed to their organisms being so minute that no microscope yet made is powerful enough to bring them into view.

Diphtheria has been known to exist since the first century, A.D., but it was not until early in the nineteenth century that it was called by its present name diphtheria. Throughout the nineteenth century it prevailed extensively in all countries. It is a condition of membranous sore throat caused by the Klebs-Loeffler bacillus, after the two scientists chiefly responsible for its isolation. It was always accompanied by a heavy death toll, until the production of an anti-toxin, called anti-diphtheritic serum since which date the mortality is light. It is now inconceivable that any person present would object to the use of anti-diphtheritic serum where a case of diphtheria occurred in his family; nor would he be content were every child in his home not given an immunizing dose of this serum. It is seldom now that a second case of diphtheria occurs in the family when the first case has been recognized in time. It is said that a history of the ravages of yellow fever would be the history of Europe during the past three and a half centuries, but with the introduction of drainage and a good water supply, the disease has almost entirely disappeared.

The first credit is due to Walter Reed who, with his half dozen associates, made the construction of the Panama Canal possible, and they will yet make yellow fever as scarce in the Spanish Main where it is still endemic, as is typhus fever with us. Because of malaria, vast areas of the earth's

surface were mere waste in so far as man was concerned, but the discovery by Laveran of pigmented bodies in the blood of patients with malaria fever ultimately led to the discovery in the mosquito of the parasite, which is the specific cause of the disease, and finally, as a result of the work done by Laveran and a few of his associates these waste places have been made habitable.

With typhoid fever you are all familiar. Apart from the suffering and the heavy death toll the economic loss has been very great, and this is an absolutely preventable disease. First: By sanitary measures covering the protection of water supply and the destruction of flies. Second: By inoculation or vaccination.

In all wars, previous to the late great war, the losses from typhoid or enteric fever far exceeded those inflicted by the violence of the enemy. During the first two years of the late great war the British army with several millions of men in all fields had 1501 cases of typhoid and 993 cases of these occurred among those who had not been immunized by anti-typhoid serum. Inoculation by this serum was then made compulsory and few cases of the diseases occurred.

The discovery of X-ray by Roentgen has proved a great aid in the diagnosis of surgical conditions, and it is becoming more and more important as a factor in the treatment of many conditions. For many years X-ray and radium have been used in the treatment of skin cancer. During the past ten years X-ray and radium workers have been radiating cancer areas of the deeper parts of the body before and after operation with the hope of so weakening cancer cells as to prevent their growth in other parts of the body. Much progress is being made by the German scientists in the treatment of cancer with high power X-ray machines. They have produced machines that generate up to 300,000 volts and are capable of producing X-rays of such intensity as to penetrate any portion of the body. They claim that in their research work they have been able to kill cancer cells at any depth in the body tissues. The profession and especially our radiologists are anxiously watching its development, and our enterprising local radiologist, Dr. W. H. McGuffin, has shown that he is alive to the great possibilities of this deep X-ray therapy by recently installing a machine capable of generating up to 200,000 volts. Now that bacteriology is being thoroughly understood, it is confidently hoped that in the not

distant future many diseases, such as tuberculosis, will be made to disappear. Chemistry and bio-chemistry are also becoming great aids in the practice of medicine. Take diabetes for example. Until recently, this condition was estimated clinically, and by an examination of urine for sugar. Now we estimate the amount of sugar in the blood and we find that in some cases with sugar in the urine there is only a normal amount of sugar in the blood. Such cases are not serious, but another case where we find an equal amount of sugar in the urine, but an excess of the normal amount of sugar in the blood, we must regard seriously.

I must not dismiss this subject without paying tribute to the discoverers of insulin. Diabetes may be recognized by vicarious appetite, increase in the percentage of sugar in the blood and the presence of sugar in the urine. Something has gone wrong with the internal economy, in consequence of which the liver is no longer able to act as a store house for sugar. It therefore appears in excess in the blood and manifests itself clinically in the urine. It has long been known that the pancreas, a gland beneath the stomach, had much to do with diabetes. In 1889, VonMering and Minkowski demonstrated that the little islets dotted throughout the pancreas called the islands of Langerhans, when removed from an animal, caused its death by an excessive accumulation of sugar in the blood. It was then predicted that an extract from the pancreas would ultimately be used in the treatment of diabetes. Many attempts had been made to produce this extract, but without success, until recently, when Dr. Banting with his associates, Macleod, Best and Collip, working in the laboratories of Toronto University, succeeded in removing from the pancreas the long dreamed of extract—insulin—that controls the amount of sugar in the blood. To Professor Collip, now of Alberta University, belongs the credit of producing this substance in its present pure form. It is confidently hoped that in the near future the same substance may be obtained from certain plants, when the treatment of this disease will then be satisfactory, inexpensive and convenient.

Let me remind you that the medical student of to-day does not acquire his knowledge by intuition. He knows that he must study the laws of science that have to do with life in any form, and he now believes that the chief object of medical science is to teach the people how to obey the laws

of health and so keep well. In early times the medical profession considered their only function to be in attendance upon the sick, and all their endeavors were focussed upon the treatment of the individual and his ailments. The profession now regard their function as threefold: first, its effectiveness as applied to the individual; second, as applied to the nation; third, as applied to all the nations. It realizes that all these functions are so correlated that one cannot be performed badly without adversely affecting either immediately or remotely all the other functions. The country does not realize what great power for good can grow from advice given by the corporate opinion of the medical profession. The ignorance of the public in matters of medicine is colossal and its faith in the false prophets of medicine equally prodigious. He starts out to find a miracle worker, and anyone hunting for miracle workers is good grist for the faith-healer, the chiropractor, the crystal gazer and in fact, for every fakir or irregular who for gain or for notoriety can lure the public by his advertising.

Though the medical profession has shown itself capable of exerting its stupendous influence on public health, the public ear has never been able to listen to a collective, authoritative and efficient opinion delivered by that profession. It has been able to hear opinions only from individuals by means of special interviews or from letters and newspapers, or from occasional addresses delivered to professional bodies. A poisonous seed which may lead to the utmost danger to public health is at the moment germinating in the minds of the public, which scarcely realizes to what extremities this growth may lead. It is the recognition of unqualified practice. There is a vast amount of unqualified practice permitted to men who possess no medical qualifications. It is such a menace that young men are beginning to think twice before investing time and money in attaining medical qualifications, when they see large practices and general appreciation meted out to men who possess no medical training or qualifications.

Now in conclusion let me repeat what I said on a former occasion, that physicians and surgeons are better trained and better equipped to-day than ever before. Disease is understood thoroughly, studied more carefully and treated more skilfully. The sum total of human suffering has been reduced to the minimum. Many diseases known to our fathers



have disappeared. The death rate from other diseases have been falling to the vanishing point, while public health measures have lessened the sorrows and gladdened the lives of millions.

“WHAT THE HOSPITAL REQUIRES MOST FROM THE DOCTOR  
AND WHAT IT LIKES BEST TO FIND IN HIM.”

Dr. A. E. Archer, Lamont.

As you notice this afternoon this is the hospital's viewpoint with regard to what they require most and like best in the doctor and as this was supposed to be a joint meeting of the Medical Association and the Hospital Association it is a good time to discuss it.

What is the first essential in the medical man? If a hospital is going to succeed in its primary object: the curing of the patient, the hospital has a right to expect the medical man shall be efficient in his work. That term “efficiency” I am not going to define. You know what I mean and how absolutely necessary it is as a fundamental.

There were two viewpoints suggested: the hospital viewpoint and the doctor's viewpoint. I thought of still another viewpoint that has been given a great deal of consideration by humorists such as Irwin Cobb, that is, the patient's viewpoint. It was not put upon the programme because it was considered that both the hospital and the doctor realize the patient's viewpoint as the most important of all and it was not necessary to consider it at all or to presume it was not in the thought of the doctor and the hospital primarily.

The second matter I am going to refer to is the doctor's acquiescence in the hospital routine. As you know we must have routine in every hospital, and the larger the hospital, the more necessary it is. There is necessarily routine which is the only way to handle the vast amount of work that is heaped upon the nurse. It cannot be accomplished unless the hospital organize this work for itself. There is going to be a great deal of lost motion and a great deal of lack of efficiency unless there is routine and it is for each hospital largely to determine that routine and for the doctor to acquiesce in that routine.

Another point I am going to mention is punctuality and I ought to mention this for myself as well as for others because it is in no way easy for a doctor to be punctual, but it is a serious thing for the hospital if he is not punctual.

Take this in connection with an operation. He names a certain hour as the hour for the operation. Everyone is ready except the doctor. From the standpoint of the hospital that is tying up the hospital from work they should be doing. The hospital should also expect from the doctor reasonable economy. There has been a tendency in these last few days to consider that in hospital matters economy is not necessary; the best is none too good; whatever a sick person requires they should have. That is right, they should have what they require, but there is such a thing as reasonable expenditure. I refer to such things as the way some doctors use an extravagant amount of dressing. They should use every bit of dressing that is necessary, but no more. To run a hospital requires the expenditure of large sums of money and the doctor should co-operate with the hospital in keeping down expenditure wherever possible, at the same time doing full justice to the requirements of the patient. Sometimes where a patient is of limited financial means the doctor has made such arrangements with that patient before going to the hospital that the doctor receives all the monies at that point that the patient has to spend, and the hospital is not able to collect their bill. This is another point where co-operation is necessary. The hospital in my estimation is entitled to first consideration because the doctor is at no actual expenditure and if the patient can only pay for the hospital service or the medical service, in my judgment, he should pay for his hospital service. Another thing, the doctor should have every consideration for the staff of the hospital; I mean the nursing staff. There are certain doctors who through lack of consideration of those who are working with them can make things very unpleasant for the staff of the hospital in doing the work they have to do. Their work is heavy and difficult at best and should not be made any more difficult or onerous by lack of any consideration on the part of the medical man. Sometimes the doctors send the patients to the hospital for too trifling ailments. We must remember that the hospital at times is overcrowded and that the staff is being overworked and every additional patient at times like that increases the load the hospital has to bear and the doctor should use great judgment. We find that particularly where there are people who are living in a boarding house, or a bachelor with some trifling ailment, sent to the hospital. They occupy a bed and there is a load on the hospital when

they might just as well have stayed in the boarding house. Another instance is where the patient is kept in the hospital for too long a period when they can be treated safely at home at an earlier period of convalescence. Then there is another class such as those suffering from tuberculosis or some disease where there are paralytic conditions. The patient becomes a great burden on those who are looking after him. If that patient can be made more comfortable in a hospital he is entitled to that treatment; if it is merely that the friends have become tired of looking after him or because of the extreme nature of conditions his own friends do not wish to further look after him: that, in my opinion, is a case where the doctor should hesitate before he sends him to a hospital. Sometimes these patients can only pay for a public ward, but they cannot be put in a public ward and they have to be given private wards. I do not want you to misunderstand me. The patient is to have first consideration, but if he can have proper treatment, reasonable treatment at home he should not be unloaded for the last few weeks of life just to relieve those who up until that time have been looking after him. It is sometimes unfortunately the habit of some doctors to get the use of the operating room by perhaps inaccurately classifying an operation as an emergency when it certainly should not be classed as an emergency.

I think, too, the hospital would like particularly in a medical man, constructive criticism. There are two kinds of criticism as you all know, but constructive criticism in hospital management is always well when the doctor has anything to suggest to improve the condition of things at the hospital. The hospital management may not act upon it, but they should always thank him for the suggestion. In these days of expansion and standardization movements of general hospitals, increasing things have been requested of the medical man and inasmuch as all hospitals are anxious to meet the full requirements of the standardization movement they are very grateful to the medical men for their co-operation in the increasing load that is thrust upon them. In these requirements I refer to the writing of history and doing the many things required under this standardization movement of the doctor, and that no one else but the doctor can do. By acknowledging the requirements of this movement you tend to increase the efficiency of the hospital in which this work is being done and if you give that assistance it will be

gratefully received; in short, the whole matter can be summed up in a word—co-operation. The hospital likes best the fullest co-operation on the part of the medical men in its big task of attempting to alleviate the suffering and obtain a complete return to health.

“WHAT WE LIKE BEST AND REQUIRE MOST FROM THE  
HOSPITAL.”

Dr. Lincoln.

I am only going to make a few remarks because I think on the whole the doctors are well pleased with the work carried out in the hospitals; in fact nowadays we cannot do our work without efficient hospitals. I want to point out a few things as we see them, the things we desire and require in order to carry out our work efficiently.

The maintenance of a hospital is no longer a one-man job. It is only by proper team work that we can obtain the best results, therefore, it becomes necessary for the closest co-operation between the doctor and the hospital. I wish to point out some of the things which the hospital must appreciate in order to bring about this co-operation. I am placing first, the careful and exact execution of all the doctor's orders. The hospital should have no pre-conceived ideas as to how the patient should be treated, no tendency to do certain things because it is usually done by the attending physician in that particular case, but we demand that the orders laid down by the attending physician in that particular case should be carried out absolutely.

We also require sufficient X-ray and laboratory facilities so that a reasonable investigation of the causes and a diagnosis of the disease can be carried out. These do not depend so much on the value of the equipment as upon the care and exactitude with which they are carried out. Inaccuracy through ignorance is a detriment to the doctor and to the hospital and a hospital should not attempt X-ray unless it can be absolutely relied upon. An aseptic operating room and surgical ward is an absolute essential of all hospitals. In hospital work no detail can ever be neglected and a constant check must be kept on all. A little carelessness or slight deviation will cause untold suffering. In accepting surgical cases the hospital accepts great responsibility. I recognize the doctor has his sphere in all these points, but I am speaking from the standpoint of what the doctor requires from

the hospital. A proper dietetic department must be maintained in which diets suitable for various patients must be available. Not only patients requiring special diets must be treated, but convalescents must have diet easily assimilated and a good diet kitchen is an essential to any training school.

Considerable accommodation must be provided, provision being made for the wealthy as well as the middle class and also for those unfortunates who are unable to pay their way. Rules of admittance and discharge as far as they affect the doctor should be simplified as much as possible with no undue work. The first consideration of the doctor as well as the hospital at all times is the welfare of the patient and this can best be obtained by the closest co-operation and mutual help between the hospital and the doctor.

“THE DOCTOR IN THE COMMUNITY”

Dr. Collison, Red Deer.

It gives me a great deal of pleasure indeed, to address this meeting on the subject of “The Doctor in the Community,” which is a subject very infrequently spoken of or spoken to at a public meeting. To my mind it has not been spoken of frequently enough. The hospital situation we all know, and you know very well in Calgary, has from a financial point of view fallen on rather serious times. The difficulties of financing we all know very well. I was at the meeting yesterday afternoon when financial questions of the hospital were discussed.

We have in Red Deer one of the oldest hospitals in the Province. Outside of the larger centres I think possibly it is the oldest one. During the boom days there was no difficulty in financing; everything was lovely. People paid their bills and others gave donations. After the beginning of the war when money was hard to get we began to have difficulty. About 1917-18, we succeeded in electing hospital men that ran us in debt in one year from six to ten thousand. They were inexperienced people in hospital finance and hospital management. People wanted their money and the city being the owner we had to pay the \$6,000, the minimum, and to use a slang phrase we had to dig that \$6,000 in the year 1921. About that time we came to the conclusion that something had to be done so we called in the assistance of the Health Department of the Provincial Government. They sent us

their specialist in hospital work and he assumed the position of an adviser to our hospital commission and we have found it very successful indeed, so successful that we immediately began to see light, and there was more nearly an equality between receipts and disbursements. Now, I will attempt to show that although the function of the doctor has changed in the evolution of civilization yet still he is the guide, adviser and friend of the needy in a way no other individual can possibly be. I wish also to attempt to show that as a member of progressive science he is a unit of society.

The medical man. I think you will all admit, and the medical woman, is an educated individual usually, and as such it is well within the bounds of reason to expect their influence would be marked in any community in which they find themselves. There was a time when the functions and duties of the man of medicine were dual. He was religious adviser as well as medical adviser, but in the evolution of time these functions were differentiated. I have noted some of the most outstanding advances made in medical science and I am making these statements with the understanding that you will admit that the medical man in the community takes part in all these advances. Take tuberculosis, the disease that has taken its hundreds of thousands. You all know it is not as prevalent, nor the menace to life it was a few short years ago. Smallpox outbreaks are usually dealt with by the doctor effectually. The means were given by a practising physician in a small community, a century or two ago, to blot smallpox off the face of the earth, but unfortunately there are individuals who take exception to the process of vaccination; however, we have smallpox down to a minor question, but we should not have it at all. Typhoid fever has been a scourge of recent times, but we seldom see it now.

Diphtheria is perhaps the disease that comes closer home than any other, because that was the disease that entered every household in former days and took the choicest of the little children from the house, but diphtheria is not at all difficult to deal with. The medical man in the community, together with the investigator, the man who spends his time thoroughly investigating these things is the man responsible for abolishing these things from the face of the earth, and by so doing he is adding to the length of life and in that way increasing to an unlimited extent, an appreciable extent, the wealth of the State.

Then take diabetes, that most persistent of diseases. I am proud to say and I think we should all feel pleased indeed that it was a Canadian to whom the honor was given to discover a means of combating that disease, and we as Canadians, and particularly the people of Alberta, should feel proud because one of our men did his part in the development of that very great remedy.

The medical man is the only man that I know of that is working night and day at all times to rid himself of a job. The medical man is continually personally, in season and out of season, attempting to abolish himself from the face of the earth. I can see the time approaching when he is going to be out of a job, but if he is out of a job along that line he is going to assume new duties, he is going to be an adviser of well people. People in good health are going to come to him for periodic examination. They are going to bring their families to him to prevent sickness. To my mind that is a more noble work than the treatment of disease. He is going to see to it that, so far as his duties go, people who are not mentally and physically fit are not going to be allowed to produce future generations.

The doctor as a citizen of the community, as an ordinary citizen of the body politic has more of public service than most men. Perhaps this part of the matter appeals to him strongly. To my mind the doctor has a public duty to perform. I think we admitted at the start that he was usually educated, a well-developed mental individual, and consequently we must expect that his influence as a public citizen should be for the best.

I wish to read to you an article written by a senator of New York. I have forgotten his name, but he was recently elected, and in defending his position he says: "The doctor who confines his labors to certain individual patients is working in a too restricted field to accomplish much. The same degree of energy and intelligence applied on a larger and vaster scale may reach a great number of persons in the community, and the whole State may benefit through his humane and constructive labors."

ADDRESS, LIEUTENANT GOVERNOR (DR.) BRETT.

The doctor's duties when he assumes office are not wholly complete to my mind. He has duties along religious lines, fraternal lines, and last but not least, the lines of good health,

sport and recreation. His relationship along religious lines must always be left to his personal desires and ideas, and must not be interfered with. His fraternal relationships are also very personal, but to my mind the doctor in any community has a function to perform when it comes to his influence on clean healthy sport. He has a duty to perform to growing generations, to the little chaps, who if left to their own resources to find their pleasures and enjoyments are very likely to get into trouble. I say the doctor has very important, very pressing duties to perform. These little people must not be left to their own resources. Along the lines of sport and recreation the growing boys and girls must also be looked after and who is better able to do this than the doctor, who knows the requirements of the growing boy and girl in the line of work and recreation and sport? and may I also say that you should not neglect the older people.

His relationship to his brother practitioner: It should be friendly, close, brotherly. Alas! how often you find that is not the case. You in the larger centres are not so open to criticism as in the smaller places, but how often do we see in smaller communities that there is no brotherly relationship. One is afraid the other is going to get some little advance. If there were no jealousy they could both live under favorable conditions and each enjoy the fellowship of the other and we recognize in the fellowship of our own fraternity the most agreeable fellowship that can be had. They could have their consultations and each bear the burdens of the other and when we have to suffer the disappointments that we all must suffer, when sick at heart with the fallacies we must necessarily meet, who can sympathize so well as a brother practitioner? Many a grey hair and sleepless night is caused by the lack of a friendly and sympathetic neighbor.

The functions and the duties of the medical man of future ages will be along these lines exclusively—perhaps that is putting too strong a case, perhaps we shall never be free of some diseases—but the doctor of future ages will be in very truth the guide and confidant of the community in which he lives. He will be consulted by people who are in perfect health; perhaps instead of several medical men there will be a central place where people can go for periodic examination and in that way add inestimable value to the wealth of the nation.



Now in closing I want to appeal to you who do not belong to the profession for a more considerate feeling towards the profession. When some criticism is made, investigate the authority, investigate the truth. After all, the medical man's life is an arduous life. His duties are manifold and very, very difficult. Give him liberally of appreciation because appreciation goes a long way to paying in full.

"THE RELATIONS OF THE HOSPITAL AND GENERAL PUBLIC TO SOCIAL SERVICE."

Dr. Howard Spohn, Vancouver.

I thought you might be interested in some illustrations. I am going to start with the admission of the patient and follow through until his discharge. (Shows pictures.) Now that is what happens to the baby from the time of its admittance to the hospital.

We shall never maintain a healthy race, a race fitted to take their stand in such an emergency as a war—in spite of the amount of life saved through scientific discoveries—until we can bring more babies to maturity. Out of every twelve babies born one dies within the first year of life. Another thing is this, not counting still-borns. There is a tremendous mortality of still-borns that can only be combatted by proper care of the mother, by proper conditions and proper home surroundings. I do not know whether you have here the sort of slums we have. We must have proper housing measures so that no child will have to be brought up in slums. These are points that I have not time to touch upon to-night.

There is another point: the venereal question. The time has come to do away with false modesty, it is only false modesty not to mention these things. When you consider what it is going to cost the country to look after these venereal cases, that the proceeds of one of these immense crops is a mere bagatelle to the taxes which you will have to pay to look after these unfortunate people, then it is time to realize that something must be done by the public to support those in authority and to help the profession in the fight against venereal disease. Our hospitals are our greatest source of expense. We have two insane asylums, twenty-five per cent. of the inmates of which are there directly through siphilitic infection. It costs the United States \$467,000,000 yearly. That is only one phase of venereal disease. It is

said that it is costing the Dominion of Canada half a million dollars a year to look after this one phase. The other most apparent phase is this: that siphilitic infection is the greatest source of infant mortality with which we have to cope. The social service people are trying to get after these things. I just want to quote you what is taking place in your own community. Of course, what is rampant in cities such as Montreal, and such places every doctor here knows. There is one case I am going to quote briefly: A mother had five children dead, two still-born. Mother found about to have another child, which has since died, a total death rate of seven children, mother infected, father useless, children dependent on the community, and mother will have to be under treatment for years to come. Another case: Baby of two months. Mental deficiency, malnutrition, mother twenty years old, positive Wasserman. Syphilis second stage. Has become blind, will eventually go to asylum. Will live perhaps ten years longer. Cost British Columbia \$300.00 a year. Father is useless and deserted the child.

I want you to take a few minutes to think. I am trying to impress on your minds that it is well for us to give some attention to the human crop as we do to the grain crop if we are going to carry on in Canada. We must have the human crop, and if we are going to have them they must come from healthy parents and are we going to leave it to future generations to have Canada governed by children of foreign or Canadian-born parents? Statistics show that the average Canadian is not producing a sufficient number of children, but are increasing by emigration and increasing by the children of the foreign-born. If we want to perform a patriotic duty there is no more patriotic duty than to raise good, healthy, Canadian citizens. What is happening in this country and the United States is this: We have 643 American scientific men. These men sprang from families of four to seven children. A survey was made of the children of these scientific men and their families consisted of one to three. That is holding good, not only in the United States, but in this country. It means this: the intelligent groups of the country are not producing rapidly enough to maintain the standard of increase taking place from groups in the community through social or other economic conditions not equipped to raise large families. We leave it largely to poor people to raise families, while the rich people do not. That

is why the increase in population is inversely proportionate to the order of economic conditions. Economic status is closely associated with efficiency and social worth, but unfortunately the birth rate is lowest in the best equipped groups of society. In British Columbia we hear a lot about the increase of foreigners. Last year among the Chinese and Japanese the proportion of rate of birth was three times that of the Canadian born; is it any wonder that we are objecting to the Chinese coming into the country? Of course the child has very marked economic value, and we must give it some care and attention. It is up to us to-day to see that every child comes into the world healthy, that every child born into the world has a chance of being raised under normal healthy surroundings. Take the case of the Nam family. The total number of individuals who were considered descendants from the original Nam, was 852 and included eight generations, dating from 1760. This community lived in a district known as Nam Hollow, and were characterized by drunkenness, imbecility and general worthlessness. It has been estimated that in seventy-five years this family alone has cost the State of New York, \$1,411,676. Another community of the same character, living in Massachusetts, and known as the Hill Folk, was also investigated and reported by the eugenics record office. Both these families have been traced to one or two feeble-minded ancestors and the fearful record of their progeny requires two large volumes for an adequate description of their family tree. Contrast the Edwards family, descended from Jonathan Edwards, who was born in 1703. Thirteen hundred and ninety-four of his descendants were identified in 1900, of whom 295 were college graduates, 13 presidents of our greatest colleges, 65 professors in colleges, besides many principals of other important education institutions, 60 physicians, many of whom were eminent, 100 clergymen or missionaries; 75 were officers in the army or navy, 60 were prominent authors or writers; 100 were lawyers, 30 were judges, 80 held public office, one of whom was vice-president, and three United States senators. The thing comes down to brass tacks: if you want to have good healthy, vigorous children they must be produced from good healthy vigorous stock, and we should not permit certain things that are going on to-day and we should encourage in every way the raising of this kind of stock. I know there is a certain amount of adverse criticism about the expenditure of money on such

institutions as universities, but an interesting experiment was carried on last year by the University of Toronto. Out of 2,193 men of the first two years in the University given a physical examination, thirteen per cent. were physically fit, five per cent. showed some slight disability, two were physically unfit and not a case of venereal infection in the 2,193.

In the City of Toronto last year, we saved 540 more babies than in the five years preceding, so you have it in your power to save these babies if you will support the special social service work. I have only hurriedly run over these things to-night, but there is one other thing I would like to speak of, and that is the adoption of children. In an institution in New York we had 800 children for adoption, children who had been left on the doorstep, found in the park, etc. We had these 800 children and the hospital paid for individual mothers to keep them in a home and we also put them in proper homes and I want to mention this to emphasize this fact: that no matter how efficient your orphanage, no matter how kindly disposed the Board of Directors are, no home or orphanage can take the place of the individual care of the mother. I have had a great many babies that I have been looking after adopted into homes, and in not one single instance have I ever seen the foster-mother in any way regret it. Medical science can tell almost surely if the baby is mentally and physically fit although heredity does play a part and if we find soundness of health and intellect then we can fairly say these babies will grow up decent home individuals, and I cannot make too earnest a plea for these babies to be adopted into good homes.

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### KINGSTON'S NEW ISOLATION HOSPITAL

Kingston's new Isolation Hospital was formally opened by Mayor Angrove on Feb. 10th. This new hospital is recognized by medical men as one of the best on this continent, and was erected at a cost of \$200,000. It will be conducted in connection with the Kingston General Hospital. Frederick Taylor, formerly of St. Luke's Hospital, Ottawa, and a native of London, Ont., is superintendent of the hospital.

## Book Reviews

*Richard Maurice Bucke. A Sketch* by James H. Coyne, LL.D., F.R.S.C. With bibliography and two unpublished portraits. Revised edition, reprinted from the Transactions of the Royal Society of Canada, 1906. Henry S. Saunders, 7 Neville Park Blvd., Toronto. 1923. Price, \$2.50.

Many readers of *THE HOSPITAL WORLD*, particularly those practising over the quarter-century period, will recollect the subject of this sketch. He will be remembered best as the Superintendent of "London Asylum." As an alienist, Dr. Bucke was a leader in his day. He had a brilliant career, even as a medical student, graduating in 1862, after winning the prize for the best thesis of his year. He then proceeded to Europe for post-graduate study, first in London, under such teachers as Fox, Jenner, Erichson and Quain, and later on in Paris, under Trousseau, Nelaton and Bouvier. He returned to Canada in 1864 and settled in Sarnia. The Sketch is full of interest and is well put together.

*Primary Studies for Nurses.* A text book for first year pupil nurses containing courses of studies in Anatomy, Physiology, Chemistry, Hygiene, Bacteriology, Therapeutics, and Materia Medica, Dietetics and Invalid Cookery, by Charlotte A. Aikens. Fifth edition, thoroughly revised. Philadelphia and London: The W. B. Saunders Company. Canadian Agents: The J. F. Hartz Co., Ltd., Toronto. 1923. Price, \$2.25.

These studies are concise, adaptable to the practical needs of nurses and written in simple language. The subjects necessarily are presented in broad outline and will likely have to be enlarged upon by nursing instructors. The nurse may read these subjects as they come to her attention in the wards—i.e., in so far as the practical subjects are concerned. The book is well illustrated, and its contents easily grasped. In her next edition we would suggest that in the section on chemistry something should be said of the electron and its relation to the atom, and also something on electricity, radium and their practical uses.

*Another Little Journey.* A posthumous manuscript by Elbert Hubbard. Published, 1923, by Davis & Geck, Inc., Physiological Chemists. Surgical Sutures exclusively. Brooklyn, N.Y.

Like all Elbert Hubbard's writings, this booklet will well repay reading. As he states on the fly-leaf, it comprises "some kind of advice to surgeons, modestly submitted." From a mechanical standpoint, too, it is most creditable. The booklet is produced by Davis and Geck, of Brooklyn, N.Y., the well known manufacturers of surgical sutures. This firm's slogan is "This one thing I do." The booklet describes the "exquisite and intelligent care" used in the preparation of their products. The firm have indeed raised suture making to a science.

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*A Reference Hand Book of Gynecology for Nurses.* By Catharine Macfarlane, M.D., Professor of Gynecology, Women's Medical College of Pennsylvania. Fourth edition, thoroughly revised. Philadelphia and London: The W. B. Saunders Company. Canadian Agents: The J. F. Hartz Co., Limited, Toronto. 1923. Price, \$1.50.

This small volume completely covers every phase of its subject. It is most valuable for the nurse in training or for the graduate nurse. It is technical without being difficult to read. The illustrations are good. The chapters on bacteriology and the communicable diseases enhance the value of this reference book. Attention throughout is given to details and measures rarely mentioned in some text. It is a book which merits many editions.

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*Outlines of Nursing History,* by Minnie Goodnow, R.N. Third edition, reset. Philadelphia and London: The W. B. Saunders Company. Canadian Agents: The J. F. Hartz Company, Limited, Toronto. 1923. Price, \$3.00.

Glancing through this volume one notes the high spots in the history of nursing. Pictures are seen of nursing: medical men and laymen who have had to do with nursing or whose work has influenced the work of nursing. Incidentally the scientific progress of medicine and surgery is outlined and its effect on the study of nursing. Famous centres of nursing are written of with their contribution to the science and art. Miss Goodnow writes of the history of nurse education and takes a stand mid-ground on the question of the super-trained versus the moderately-trained nurse.

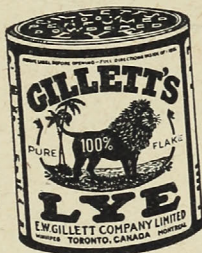
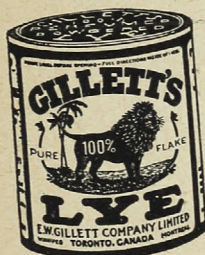
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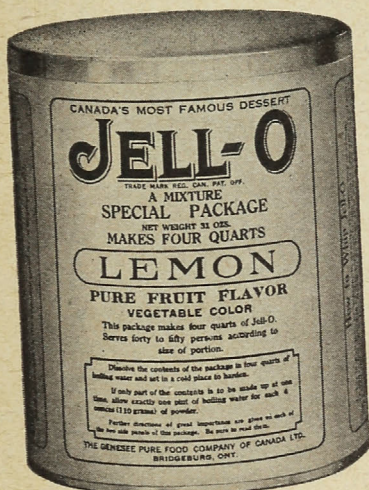
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Among the hospitals who have realized the sanitary and efficient features of modern mechanical refrigerating equipment and have installed or placed orders for them recently are: Victoria Hospital, Halifax, N.S.; Brandon General Hospital, Brandon, Man.; Brockville General Hospital, Brockville, Ont.; and the Memorial Children's Hospital, London, Ont.

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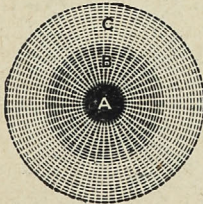
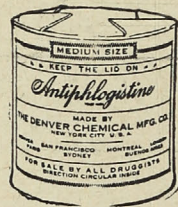
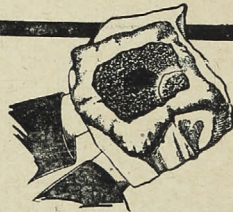
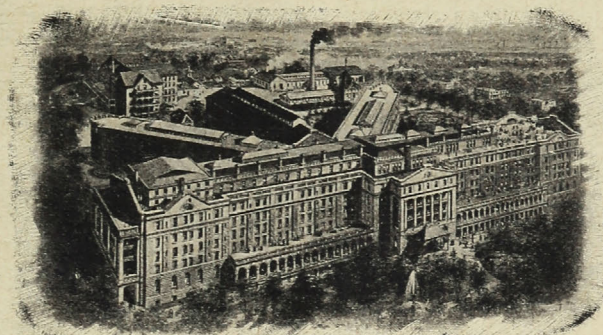


Diagram represents inflamed area. In zone "C" blood is flowing freely through underlying vessels. This forms a current away from the Antiphlogistine, whose liquid contents, therefore, follow the line of least resistance and enter the circulation through the physical process of endosmosis. In zone "A" there is stasis, no current tending to overcome Antiphlogistine's hygroscopic property. The line of least resistance for the liquid exudate is therefore, in the direction of the Antiphlogistine. In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for.



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