

The Official Organ of the Provincial Hospital Associations

The HOSPITAL MEDICAL and NURSING WORLD

CONTINUING THE HOSPITAL WORLD

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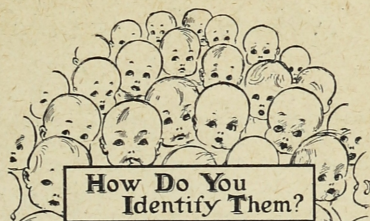
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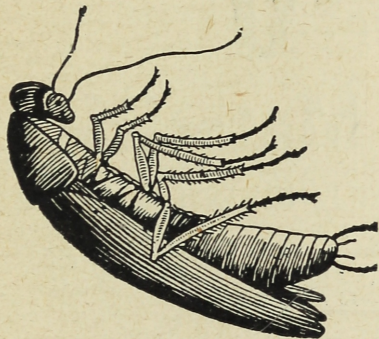
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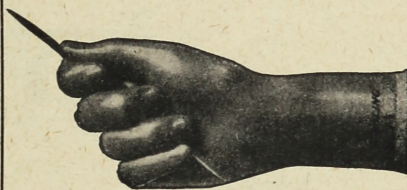
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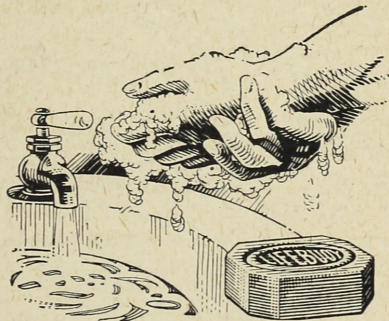
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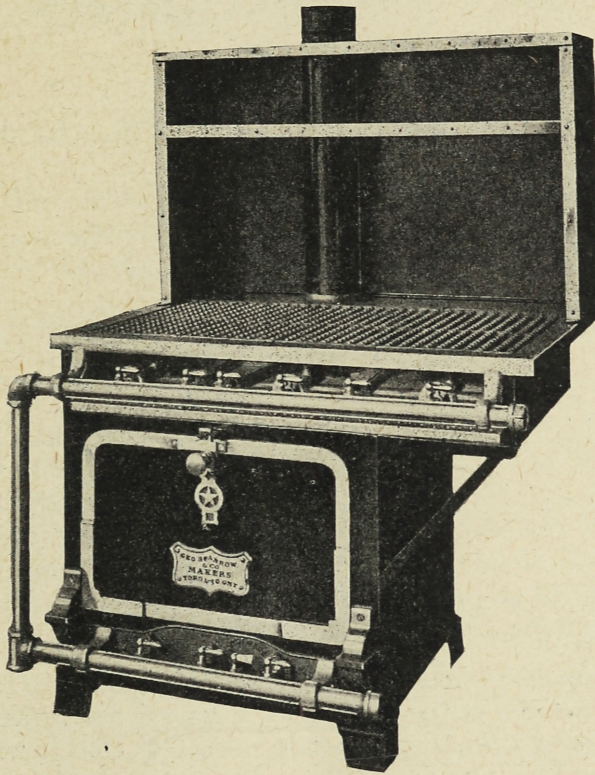
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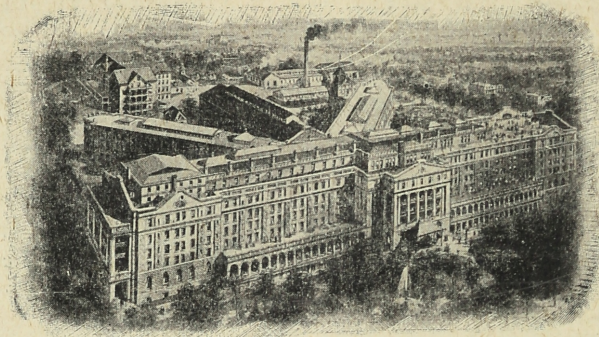
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TORONTO, CANADA

A professional journal published in the interests of Hospitals, and
the Medical and Nursing Professions.

VOL. XXVIII

TORONTO, NOVEMBER, 1925

No. 5

Editorial

The Wider Outlook

Within the past few years hospital workers in Canada have established several hospital associations. These young provincial associations are showing much virility and enterprise and are manned by executives who are always on the alert for new and progressive ideas. For the most part the associations have an annual meeting at some convenient centre and discuss hospital construction, organization, management and maintenance. Certain social functions are held which form a pleasant complement to the main programme.

It might be worth while for the executives of these various societies to consider some additional objects which might be attained with benefit to all and sundry.

In the Old Land there is a "Hospital Officers' Association," whose objects are:

The promotion of social intercourse among its workers. Note that this is the *first* object. The second object is the discussion and study of matters affecting their interests, duties and responsibilities.

Then comes one which our Canadian associations put first: the reading and publishing of papers upon hospital work. Our British brethren place in the fourth category, "The arrangement of Saturday afternoon visits to hospitals and other places of interest to hospital officers. Fifth, the promotion of the general welfare of hospital workers; and lastly, the establishment of an information bureau."

Have any of our provincial hospital associations thought of these various objects and considered the wisdom of incorporating any of them into their constitutions? If not, we think they might well consider doing so at their next meetings.

Trustees, medical and nursing executives, departmental heads or our various big city hospitals, might meet at least quarterly in one or other of their hospitals, inspect the institution and have informal discussions on any phases of hospital construction, management, etc., which appeared specially noteworthy in the hospital visited; take a cup of tea together, and thus become better acquainted with one another, and work out common problems.

Papers on matters affecting the interests, duties and responsibilities of trustees, director, superintendents, nursing principals, stewards, accountants, internes, nurses, orderlies, clerks and other classes of workers might well be placed on the agenda of our regular yearly association meetings.

Again, why not establish a central national bureau of information not only for employees, as in England, but one which will have all sorts of data for our Canadian hospital workers; plans for buildings, forms for histories, charts, and blanks of all sorts, files of all hospital publications, shelves with books which have been written on and about hospitals. Such a bureau might be conducted by the

secretary of the Ontario Association, since the Province of Ontario is the most central one in the Dominion. The cost of such a bureau would be trifling; its value incalculable.

The good is always the enemy of the best.

Strychnia Poisoning

A druggist dispensed for a female patient aged thirty-five, one-grain doses of strychnine instead of exalgin. The two bottles stood side by side. He grasped the wrong one. The fatal dose was swallowed with water. In five minutes the woman felt ill and in fifteen complained of pain at the heart; then passed into a convulsion which lasted one and a half minutes. She then expressed a fear of death, and in thirty minutes after taking the drug died in a convulsion!

Druggists, hospital dispensers and nurses with stock medicines in cupboards in the wards cannot be too careful with poisons. Better have them in blue bottles with roughened surfaces, labelled poison and kept in locked compartments with all the other poisons. The electrician can put a little red lamp in the poison cupboard which will light up when the poison cupboard door is opened. The nurse or dispenser should unhurriedly examine the label twice. If all these precautions are taken—we cannot be too particular—mistakes will be reduced to a minimum.

The *Lancet*, which reports the case cited above, reports another. A woman of thirty-six was prescribed half an ounce of liq. arsenicalis with half an ounce of liq. strychninæ hydrochloridi; six drops to be taken three times a day. The patient finished the bottle without ill effect, but, later, on wanting a

further dose, noticing a white deposit in the bottom of the bottle, added some water and drank the contents. Death ensued in two hours and twenty minutes. Here, says the *Lancet* contributor (Prof. Littlejohn), the first mistake was in prescribing powerful drugs in drop form instead of in diluted solution. The second was made by both doctor and dispenser in putting up two incompatible drugs. It should be well known that alkaloids are precipitated by alkalies from their salts. In the above cited case the strychnia, gr. 2 1-5, was precipitated from its hydrochloride solution by the alkaline liq. arsenicalis.

A ship's medical officer administered one dram of liquor strychnia to a naval officer, through misreading the dosage in the B.P. The officer succumbed from respiratory failure in forty-five minutes. He had taken 0.55 of strychnia!

A child, aged three-and-a-half years, took two or possibly three tablets of Eastmo' syrup tabloid with which he was playing, and died in one-and-a-half hours, having taken 1-32 or 1-20 of a grain of strychnia.

An eighteen-months-old child died two hours and twenty minutes after eating some nine pills of aloes, belladonna and strychnia.

The writer of these lines had a patient in a Toronto hospital who while convalescing from an operation for ruptured appendix, was given by the nurses (unauthorized!) two A.B.S. and C. pills each night for sixteen nights; following which convulsive seizures set in. These disappeared when the pills were stopped by the doctor and sedatives—morphine and luminal—administered (on different days).

Doctors should always read the nurses' notes and nurses should not prescribe even purgatives, on their own initiative.

Prof. Littlejohn says recovery has followed the administration of forty grains of strychnia, while one quarter of a grain is said (not positively) to have killed an adult. One-half a grain is recorded as having killed a doctor.

The writer recalls one dram of the liquor having been administered by a hospital nurse in training who almost at once recognized her mistake. One of the internes was called, used the stomach tube at once and saved the patient.

Enough has been said to warrant the very utmost precautions on the part of doctors, nurses and dispensers, in ordering, dispensing and in administering strychnia.

Heat in Rheumatism

A contributor to the *Practitioner* writes that Wilde has shown that lactic acid forms with animal tissues a compound which is stable in the presence of alkalies, but dissociated by the application of moderate heat.

Lactic acid, he goes on, is formed as a product of muscular activity and eliminated rapidly in the sweat of a healthy skin. In the rheumatic the dry skin bars the outlet and the acid is retained. Not only must this retained acid be set free, as it is by the pyrexia, but it must be removed by the activity of the sweat glands, which latter is attempted medically by the use of the salicylates and pilocarpine.

The above desiderata are better accomplished, the contributor says, by means of moist heat, but the temperature must not be *hot* or *wet*: heat above 105

degrees is liable to depress rather than excite the secretory action of the indolent skin; and wet steam may burn.

Three or four treatments may be needed, each lasting twenty to thirty minutes, providing the patient doesn't show any bad signs.

The treatment may be administered upon a pyretic couch or by means of a hot pack. A description of the couch is given by the writer, but we shall merely describe the method of applying the hot pack.

On a firm mattress are a thick blanket and a warmer mackintosh. The stripped patient is wrapped in a warm, dry blanket, laid on the mackintosh, and covered with two blankets until the pack is prepared. A fairly thick blanket is spread out, its sides rolled inward till they meet in the centre; this double roll is loosely folded and placed in a large bath or pail. A kettleful of boiling water is poured over it. It is then wrung out as is a hot fomentation by two people in a wringer of linen or canvas.

The two loose blankets are then removed from the patient; he is turned on his side, and one half of the wet blanket is passed underneath him; then he is turned on the other side, the blanket pulled through under him, the two sides closely folded round him, four hot water bottles placed near him, and the free sides of the mackintosh and blanket on which he is lying are in turn wrapped around him. Two or three more dry coverings are thrown over him and tucked closely round his neck. If any symptoms of distress occur he is released at once. After twenty or thirty minutes he is uncovered, quickly dried and wrapped in warm dry blankets. Sweating may continue for half an hour.

Appendicitis

Sherren informs us that there were 2,826 deaths from appendicitis in England and Wales in 1923! If operation were done earlier the number of deaths would be greatly reduced, he maintains truly.

He says the onset of the acute form is usually sudden, the patient often awakening in the early hours of the morning with general abdominal pain—not in the right inguinal fossa, though there is deep tenderness here or under the liver, or per rectum, depending upon the position of the appendix. There is superficial tenderness. He repeats, the symptoms are perfectly clear: general pain and local tenderness. *These symptoms call for immediate operation.* No aperient should be given; nothing but water by mouth and morphine if necessary, *after* the diagnosis has been made. Early removal when the inflammation is confined to the appendix would not only easily abolish the death-rate from appendicitis, but would restore the patient to health in a short time.

This brief summary might well be engrossed in large letters, framed and hung in every doctor's office in place of his sheep skin. Indeed it might be well to have such an inscription hung in every home. If memorized, fewer purgatives would be given by anxious parents when these symptoms supervene in any member of their family, and the family physician summoned immediately.

In over 2,000 cases of appendicitis at the great London Hospital under the care of all the surgeons the mortality in 221 cases operated on within twenty-four hours was 0.9 per cent.

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(Continuing the Hospital World)

Toronto, Canada

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Original Contribution

THE MEASURES WHICH INDICATE EFFICIENCY IN HOSPITAL ADMINISTRATION

MALCOLM T. MACEachern, M.D., C.M.

Associate Director, American College of Surgeons;
Director of Hospital Activities.

The history of the hospital through the past ten centuries is one of interesting development and evolution. Commencing as an institution affording custodial care only, it has come through the ages with constantly broadening purposes and functions, reaching in the present day the state of a highly developed and co-ordinated aggregation of scientific procedures conducive to the best care of the patient physically and socially, and, in addition, exercising such other functions as tend to promote health and welfare conditions generally. Indeed, the hospital now takes an important place in the physical, social and economic life of the American people.

A retrospect over the history of the hospital during the past ten centuries reveals six distinct periods in its evolution. These may be described, briefly, as follows:

First, from 970-1170: During this period hospitals were used mainly as a shelter of refuge overnight for travelers—to protect them from the dangers of wild animals.

Second, from 1170-1270: This is known as the "pilgrimage period" in history, and the hospitals were therefore used mostly as an abode for the weary pilgrims as they journeyed from land to land.

Third, from 1270-1470: During these two hundred years the hospital continued to serve as a place of rest and safety for the traveler by night and for the sick and infirm until they were able to continue their journey.

Fourth, from 1470-1547: About this time there appeared what were then called "inns" and are now known as "hotels." Thus the function of the hospital became restricted to the care of the sick and infirm, while the traveler sought the inn as a stopping place.

Fifth, from 1547-1854: During this period the use of the hospital for the care of the sick and infirm increased rapidly.

About 1,775 hospitals, owing to deplorable conditions existing in them, due to lack of management and knowledge generally, fell into great disrepute, and we have recorded in history what is known as "the dark days for hospitals." A page from the history of these days will justify the need for good hospital administration in any hospital.

Sixth, from 1854-1924: This may rightly be designated as a period of greatest hospital reform, commencing with the advent of Florence Nightingale in the Crimea, 1854, when possibly the first demonstration of modern hospital administration was introduced, as well as the founding of the modern nursing art. This period of reformation continues to the present day, when the art of hospital administration, like medicine, has become a more or less complicated science.

Well after the middle of the nineteenth century modern hospital revival began. Indeed, not till after Lister's discoveries had led to the development of modern surgery did this revival make itself felt to any degree. Three things go hand in hand—good hospitals, good nursing and good surgery.

Running through all this interesting history the reader is impressed with the fact that the hospital has always been considered a place of refuge, of safety and protection for human lives. In this respect the hospital has not changed in its real function, for it is always trying to make life safer and better for humanity.

Passing from history to the present day, we find ourselves confronted with an important and enormous work in the administration of the seven thousand odd institutions of the United States engaged in the care of the sick. The vastness of this task can only be realized from the following facts. While we deliberate here together this morning, over 550,000 patients, suffering from various types and degrees of acute illnesses, are being cared for in these institutions. During the year nine to ten million persons will pass through the hospitals of the United States. Is it any wonder, therefore, that we gather here to-day in attentive conference to meditate for a few moments on hospital administration, which, I believe had its real beginning in 1854 when Florence Nightingale, through intuitive ability, undertook the responsibility of improving hospital and nursing conditions in the Crimea. While we attribute to her the credit of founding modern nursing, we must also realize that she was the first hospital administrator, which she demonstrated by remedying, in a short time, the deplorable conditions existing in the Crimea on her arrival. Men were dying like flies. She reduced crowding,

confusion, dirt and neglect to space, orderliness, cleanliness and immediate attention. The hospital death rate fell from forty per cent. to two per cent.

In the history of hospitals I fully believe that the "dark days" referred to were due entirely to poor administration or perhaps, none at all. It may be true, in this modern day of development and advancement, that some of our hospitals are still going through their dark days, through lack of efficient administration. Let us all fully realize that for the accomplishment of the true purposes of a hospital we must have proper administration.

In the discussion of the measures indicating hospital efficiency, I will submit that matter under three main divisions: (a) The consideration of the modern-day conception of a hospital as to functions which should be recognized by efficient administration; (b) The presentation of six fundamental principles that must characterize efficient hospital administration; (c) A brief resume of the essential features applicable in the appraising of the actual hospital activities in efficient administration.

Some of you are expecting me to define hospital administration. It is difficult to define anything to-day and in most instances we must resort to more of a description than a concise definition. This is particularly true of hospital administration. I have not found a good definition nor am I intending to venture one in the presence of this learned audience. In my opinion hospital administration is the expression in terms of service of the hospital policy as laid down by the governing body of the institution—a service which, in its broadest sense, includes the carrying into effect of all the functions expected of the modern-day hospital. These functions fall into two groups:

Group A: Primary—the right care of the patient. I have qualified the kind of care, for it must be scientific rather than custodial in character. This is universally admitted, without argument, as the primary or major function of a hospital. An efficient administration focusses all services on the patient and functions always in terms of the best care of that patient. The hospital must be the best place in the community, where the accumulative skill and experience of physician, nurse, laboratory worker and others are so scientifically and sympathetically directed that the patient may receive the maximum benefit thereof and be restored to health speedily and comfortably.

Group B: In this group there are three functions which I want to mention: (1) Educational or Training; (2) The Advancement of Scientific Medicine and Research; (3) Assisting in Hospital Development Generally.

EDUCATIONAL OR TRAINING.

It is the duty and opportunity of every hospital to teach, train and educate. Every hospital should become a teaching, training and educational centre. This is well set forth in an interesting article written some time ago by Dr. Dobson entitled, "The Community Hospital as a Teaching Centre."

Hospitals to-day recognize their obligation to train personnel—doctors, nurses, attendants, dietitians, social workers, technicians and others required for the various activities of the field. Hospital employees become efficient through apprenticeship and routine experience in their respective spheres of service. We do not realize what a great apprenticeship training field every hospital offers in this respect.

Hospitals must do more for the education of the practising physician. Very few doctors in active practice get away regularly or even frequently in their day for post-graduate study. From my own observations, not more than three per cent in any particular year and eleven per cent. in twenty years, for usually the same men go each time to seek post-graduate study during the years of active practice.

The hospital, as a teaching centre, will help to keep the doctor more scientifically up to date, or at least supply the necessary stimulus to take advantage of post-graduate study. The hospital as a teaching centre is a great advantage to the profession, the patient, and the community.

The hospital has another important duty in this regard. It has an educational obligation to the community; with its organization, its personnel and its facilities it must disseminate an educational influence throughout the community and support every effort for the prevention of disease, the promotion of better health and the improvement of welfare conditions generally. It must seize every opportunity to educate the community up to their responsibility in seeing that there is provided adequate care for the sick, to know what the sound, scientific practice of medicine means and the value of modern hospital service. The hospital is specially adapted to carry on such types of educational work.

THE ADVANCEMENT OF SCIENTIFIC MEDICINE AND RESEARCH.

The hospital with its trained personnel, organization, laboratories and collected data, must ever be available for the

promotion of scientific medicine, curative and preventive, and for research. The hospital offers a splendid field for investigation along these lines and therefore should not lose any opportunity to contribute to this great cause. If hospitals fail to do their duty in this respect, the promotion of scientific medicine and the furthering of research may be retarded. Every institution can contribute its share.

ASSISTING IN HOSPITAL DEVELOPMENT GENERALLY.

It is the duty of every institution to do all it can to further the cause of hospital development. Unfortunately some hospitals live much unto themselves and, either for selfish or apathetic reasons, fail to contribute a single thing for the betterment of the field generally. Let there be more team work between hospitals. Let each institution help solve the many problems presenting and give all the others the advantage of their knowledge and experience.

No longer must we look on the hospital as a single-track organization, but hold it responsible for the exercising of the broadest policies and functions. Efficient administration will embrace the carrying out of these functions. The narrow gauge institution, failing to accept this broad service, cannot successfully render the best community service in our modern day conception of a properly-functioning hospital.

There are five constant and important factors which characterize efficient hospital administration: (1) Organization; (2) Co-ordination; (3) Co-operation; (4) Service; (5) Economy.

ORGANIZATION

No undertaking worth while, whether commercial, educational, professional or other, can carry on successfully without clear-cut, responsible organization setting forth specifically, (1) duties; (2) responsibilities; (3) relations.

Organization must be as nearly perfect as we can make it. It should work smoothly. Slipshod and imperfect organization is useless and worse than none. In no other instance that I know of is organization more necessary than in that of the hospital, inasmuch as we are constantly dealing with serious and emergency conditions. The constant motto must be "preparedness."

In the organization of the hospital there are three groups to be taken into consideration, (1) the governing board; (2) the medical staff; (3) the hospital staff.

As a prime essential of efficient hospital administration, each group must have the right kind of leadership, backed

up by knowledge and initiative. This leadership should be the right type—the kind that “gets somewhere,” which always happens to be the right place and in the right way.

No group or person in the hospital can function without proper knowledge—a knowledge well balanced, both technical and administrative.

Eliminate stagnation from hospital administration. We see too much of it to-day. Stale administration is destructive to hospital progress and there must be continuously injected into it refreshing interest of some kind. This comes from initiative and vision.

The governing board to function properly must, in addition to its officers, have specially selected committees with well defined duties, meeting regularly and dealing intelligently with all matters coming under their jurisdiction. However, good board and committee work can only come through most careful selection of personnel. The membership should be confined to such persons as have the time to devote to the work, and are philanthropically inclined and imbued with a community spirit. Select the personnel with a diversity of interests and talents which can be used to the advantage of the hospital and afford a more ready adaptation of any particular member to the task assigned.

For successful administration the Board must realize that they, as a body, are totally responsible for the entire hospital. They must choose their employees and servants carefully. They must determine all policy, having full knowledge of the matter in hand, and in consultation with the superintendent, the medical staff or others concerned. When determined, it is their duty to delegate the authority for carrying this policy out to the superintendent or chief executive officer. Thus, there must be clear-cut, well defined policy and a definite way to carry it out, with final and complete responsibility vested in the Board for all things.

Efficient hospital administration presupposes a well organized, competent, ethical staff, carefully selected according to an acceptable standard. It is their duty to lay down rules and regulations which provide for the necessary organization, such as officers, working committees and, in addition, sound guidance in all professional matters pertaining to the care of patients and the promoting of the professional efficiency of the hospital. Further, it is their duty to do their work efficiently, record all data carefully, and provide for thorough review or checking up of the work of the hospital, and they

should have some method of appraising each doctor's work. This can best be done by an intelligent study of end-results.

The third group, or the hospital staff, has an important part to play in efficient administration.

The superintendent or chief executive officer must carry out the policy as laid down by the Board of Trustees. There can only be one such person in a well regulated institution.

A complete superintendent will organize his work into three major divisions, namely, medical, nursing and business; each under the direction of a capable officer, as for instance, (1) a medical superintendent for the medical department; (2) a director of nursing for the nursing department; (3) a business manager for the business department. These officers will carefully lay out their respective divisions into departments or units of service, and place each under a competent supervisor or head. These departmental heads in turn will select suitable personnel for the work required.

Thus the organization is complete—the departmental staff responsible to the departmental head; the departmental head answering in turn to the divisional officer or head, who is accountable to the superintendent or chief executive officer representing the governing board in the carrying out of policy and in the running of the hospital.

An efficient hospital administration can only be built up on strong organization as outlined. Organization made up of a number of units as indicated is no stronger than its weakest link. Therefore, it behooves us to see that each unit or department is up to full strength quality.

The superintendent must know when he gets service from each department. He may not know the technique of the department but he must be able to judge the quality of the product turned out. An efficient and responsible organization will be such that the chief executive officer can readily, at any moment, put his finger on the trouble or weakness and immediately know what remedy to apply.

CO-ORDINATION.

The second quality indicating efficient hospital administration is that of good co-ordination.

In a hospital service we have a large number of units, each performing a particular function as part of the whole. There is a marked interdependence among these units or departments. They must therefore be co-ordinated or fitted together to make a proper functioning whole and thus prevent duplication with its consequent wastage of time, energy and money,

or subject the service to omissions of duty of any kind. Without the proper working relations and adjustment between departments, the organization is apt to lose some of its momentum.

CO-OPERATION.

Lack of co-operation within or without the active departments in a hospital is the most destructive agent I know of for efficient administration. Internal discord is ruinous, weakens the effective action of that particular unit and reacts detrimentally upon the whole organization. There must be the best of working and pulling together. There must be the finest spirit of co-operation within each department itself and among all the departments going to make up the entire organization.

Co-operation provides a smooth-working organization detectable even on entering the hospital, permeating the entire institution from the front door to the back, from the basement to the garret, and resulting ultimately in the best care of the patient and the fulfilment of all the functions previously mentioned in this paper. It costs nothing; it pays the biggest dividends and is the best antidote I know of for inefficient service. Unless the entire organization acts in unison, as one harmonious family, one hundred per cent. efficiency cannot be maintained.

A superintendent who knows and practises the art of good administration will readily detect the non-co-operating individual or unit and deal with same expeditiously. No time should be lost in applying the remedy, for the spirit of lack of co-operation tends to be infectious and sometimes spreads rapidly. The best stimulus to good co-operation in any institution is the periodic round table conference of the various heads of departments, as conducted in many hospitals to-day.

SERVICE.

Service is the basis of all worthy enterprise. It is the real principle upon which a hospital should operate. All the personnel, individually and collectively, must focus their entire and best efforts on the patient—the common perspective or objective for all the activities in the hospital. "Service" must ever be the watchword and the activating stimulus throughout at all times.

The crucial test of service rendered is the turning out of a good product. The patient is the product. The question is, has the administration put forth the best effort to provide the patient with a hundred per cent. service from every de-

partment? Has the diagnosis, the treatment, or the convalescence been retarded through lack of good care, proper facilities, competent personnel or anything else?

Service to-day is what counts and upon it only are we justified in our right to exist and expect support. In no other institution in the world is good service so necessary as in the hospital; this is on account of the patient. Service must be the loudest watchword of the hospital, and it must be indelibly written on the hearts, minds and conscience of the superintendent and every member of the trustees, medical staff and hospital personnel, each and all of whom have a real part to play in the care of the patient.

ECONOMY.

Wastage of time, energy or money around a hospital indicates inefficient management. Wise economy that does not lower efficiency is necessary at every turn. An efficient administration will take full cognizance of this important element.

There are five ways in which economy can be effected in hospital work. These are:

1. System and planning of work.
2. Regular and competent inspection of all departments to detect wastage of any kind.
3. Accounting for where every article comes from and where it goes eventually.
4. Budget for all departments worked out on a definite basis of cost of service to be rendered and based on past experiences that are reliable for comparison.
5. Carrying on by the hospital administration of a constant campaign of education among the hospital personnel for economy.

In the third division of the subject matter of this paper let us consider what really constitutes medical, nursing and business efficiency in a hospital. While these are more or less arbitrary divisions, yet they can be used conveniently for the grouping of hospital activities.

An efficient administration of the medical division of the hospital will take into consideration the providing of suitable accommodations, equipment, facilities, organization and procedure as will best afford every patient entering the hospital:

(a) The proper reception and immediate attention on admission, giving the patient a rapid and comfortable psychic adaptation to the new surroundings.

(b) The immediate and thorough study of the case to work out as early, accurate and complete a diagnosis as possible.

(c) The application of the most rational and effective active treatment; and finally

(d) The obtaining of the very best results known to scientific medicine, having the patient pass through the hospital in the shortest and most comfortable manner, ultimately returning to working or producing capacity in as complete and permanent a physical condition as can be obtained, and subsequently keeping the patient under observation for the necessary time through a well organized follow-up system.

The above requirements presuppose responsible medical organization, providing for intensive study, consultations, the liberal utilization of diagnostic and therapeutic departments under competent personnel, and an analysis of all the professional work of the hospital at regular periods to properly appraise it in terms of service and end results in the care of the patient.

The nursing service of every hospital is a matter of great importance. There are several essential features necessary to be carried out in an efficient hospital administration.

An efficient administration of the nursing service anticipates the following:

1. An organized department of nursing under competent direction, with a full complement of assistants and staff required for that particular hospital.
2. Proper living, working and teaching conditions, and in respect to the latter, a well equipped classroom.
3. A well balanced curriculum of study for nurses, theoretical and practical, using the living more than the "artificial or mannikin" type of demonstration for practical procedures and the association of theoretical knowledge.
4. Careful selection of young women measuring up to a standard physically, morally and mentally, and in respect to the latter having a good background of education.

The crucial test of the nursing service is the quality of the practical care rendered the patient, which must be a well directed and carried out service that anticipates the patient's needs, great or small, gives them immediate and efficient attention, making accurate observations, recording them accurately and comprehensively so as to convey intelligent information to the doctor in charge.

Finally, in consideration of the third division of the hospital activities, namely, that of business administration, we must consider the following:

1. A competent, reliable business man who has a wide range of experience and knowledge in regard to purchasing, accounting, banking and business transactions generally.

2. The necessary office space, staff and equipment.

3. Being responsible for the business or physical side of the hospital, he must see that the entire plant is always in good working condition so as not to interfere in any way with the proper and immediate care of the patient.

4. A bookkeeping system showing clearly where every cent comes from and goes to, which also provides an accurate cost-accounting system showing the cost of the different services in the hospital.

5. He must be able to strike off an accurate balance sheet each month showing assets, liabilities, surplus or deficit; all duly audited by authorized agents.

6. Finally, he must see that wastage is kept to a minimum and the hospital is run economically. He must see that this hospital is giving a maximum service at a minimum cost. He must further always regard the care of the patient first in relation to every phase of his work.

It seems to me that in the last eight or ten years I see a new era in the history of hospitals looming upon the horizon. I would designate this the "end-result period." During the past few years there has been evidenced generally a spirit of more intensive study of the patient with follow-up and end-result observations. We have undoubtedly entered the age when there must be more stock-taking and appraising of services rendered in all activities, and particularly is this true in the care of the sick. The profession and the lay people through education have come to realize that the hospital also has a product which must be of high grade quality. I wish we all could become imbued to-day with the feeling that we are in this end-result stage of hospital administration; that on us must be turned the searchlight of truth, which is pictured so well in the words of Rev. C. B. Moulinier, when he said: "Find the facts; filter the facts; focus the facts; fix the facts on the patient, and face the facts fearlessly." We must be honest with ourselves and those entrusted to our care.

It is just to expect a high degree of efficiency of the hospital profession with the improved environment found generally to-day in institutions caring for the sick. The physician, the interne, the nurse, the technician and all other personnel of the hospital can and should do better work than formerly. To live up to the standard of service required to-day we must have some way of appraising results obtained.

Hospital administration, however successful we may regard it to-day, has in a great measure, in many instances, come through a long period of undirected apprenticeship. There has been little or no guidance other than common sense and the natural human qualities by which we survive and progress. It is indeed most interesting and surprising to see how much has been really accomplished.

The type of hospital administrator required to-day for efficient service and in order to carry out the broadest hospital functions, calls for carefully planned and directed training and experience. The practical apprenticeship of past years will not disappear but the long-felt need of better direction of training for hospital administration is coming. A period of broadening, making more thorough and systematic the training of hospital administrators, is appearing, and for this let us be truly thankful. Until we have courses in hospital administration taken generally by administrators, we will not secure as competent service as we want.

To sum up: the measures of administrative efficiency can only be determined from the quality of service rendered and the end-results obtained in the fulfilment of the broadest functions of the hospital, keeping always in mind that the patient in terms of restored physical health must be the all-in-all primary objective. To ascertain this the entire organization must constantly keep three important questions before them:

1. Is the hospital rendering every service it can and should to the patient and the community which it serves?
2. Is the hospital well organized with all the units properly co-ordinated, adjusted to make a smooth working whole, characterized throughout by a true spirit of co-operation, giving a maximum and satisfactory service at a minimum cost?
3. Is the hospital rendering the right kind of service in the medical, nursing and business or physical phases of the hospital?

Positive answers to these questions can only be ascertained when we take stock of ourselves and see exactly what we are accomplishing, or again, the determination of end-results.

CHRONIC CARBON MONOXIDE POISONING*

GILBERT PARKER, M.B., Toronto.

Carbon monoxide has been since ancient times the most wide-spread poison connected with human life and activities. Aristotle mentions coal gas as a cause of death. Livy and

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Valerius Maximus describe wholesale executions performed by imprisoning the victims in the public baths and then starting the fires, and it appears to have been a common method of suicide in Roman days. Avicenna noted it as a poison that weakened the brain. Towards the latter part of 1500, one author very accurately described the symptoms of acute poisoning. About one hundred years later it was described as a common industrial poison, and since then, particularly during the past fifteen years, considerable literature has accumulated on the subject. Very little of this deals with the chronic type, to which not much attention has been paid; particularly with regard to elucidating the cause and method of production of the bizarre group of symptoms with which the condition is associated.

The most important sources of the gas are coal gas and illuminating gas. Blast furnaces produce immense quantities and men working about them are frequently poisoned. Ordinary house furnaces, especially of the warm air variety, are also a common cause of trouble, and many severe cases of chronic poisoning have been directly traced to this source. Braziers burning in confined, badly ventilated places have long been recognized as being very dangerous.

Illuminating gas is dangerous in itself and also through the products of its combustion. Employees at gas works are frequently affected. Leaking mains may cause trouble at some distance from the leak, as the gas can find its way through the ground and appear at a considerable distance. Poisoning from continued inhalation of small quantities escaping from breaks in tubing, and leaking taps or joints, is of common occurrence. A more insidious, although equally dangerous source, is the carbon monoxide formed by the burning of gas in heaters in poorly ventilated bathrooms or basements, as many times no chimney is provided for carrying off the products of combustion. The same danger exists in connection with the practice, so common in the last few years, of people renting the upstairs of a small house, and installing a gas stove without a chimney in one of the rooms to be used as a kitchen.

In recent years another most important source of carbon monoxide has received attention, namely, the exhaust gases from combustion of gasoline. The increasing use of the gasoline engine in a widening diversity of fields has brought with it corresponding problems concerning the influence of exhaust gases upon the health, not only of men in charge of these machines, but on that of the general public as well. In the

exhaust gas from gasoline, carbon monoxide is the only considerable toxic constituent. That even the air of city streets in certain places under certain circumstances may contain a sufficient concentration of carbon monoxide to produce headache, has been proven by collecting samples of the atmosphere in the vicinity of cab stands, where a number of cars had been idling for a time.

Of course the hazard is much greater when exposed inside of a building such as a garage. Investigation has shown that even in well ventilated, modern garages employees frequently suffer from headaches, nausea and emotional disturbances. One man whom I interviewed the other day said that it was common for garage men to have such a disturbed digestion that they would have to go for weeks without eating breakfast. He also said that men are often obliged to give up the job, especially where much block testing is done.

The action of CO upon the human system is now well understood. It is, apart from a single reaction, a physiologically inert, and non toxic substance. This reaction is its combination with hæmoglobin, the oxygen-carrying element of the blood, with which it unites with 140 times greater avidity than does oxygen. Ludine, of the Mayo Clinic, says in a recent article, that CO maintains its hold on the blood corpuscles 300 times longer than oxygen. To whatever extent hæmoglobin is so combined, it is rendered incapable of transporting oxygen from the lungs to the tissues, until the CO is again displaced. There is also, of course, interference with the normal removal of carbon dioxide from the tissues. It is highly probable that all the results of inhalation of carbon monoxide are due directly or indirectly to oxygen deficiency. This is the view held by Haldane. He points out that the symptoms of poisoning are due to an internal asphyxia; and explains that even such pathological sequelæ as fatty degeneration of the heart, vessels and other organs, are due to the impoverishment of the red blood corpuscles. To sustain his point he proves by experiment that animals will live much longer and tolerate a greater quantity of carbon monoxide in an atmosphere of oxygen than of air. It is further stated that carbon monoxide does not furnish a permanent compound with hæmoglobin; but that in the presence of oxygen, or even pure air, the carbon monoxide is rapidly given off, and the oxygen-carrying power of the blood restored.

Lack of oxygen means deranged metabolism, with accumulation in the body of excretory products which act as poisons. These poisons disastrously affect the various tissues, but particularly those of the central nervous system and if the condi-

tion exists for a considerable time, the damage may be permanent. When the gas is inhaled more or less continuously over long periods, serious results may ensue, even if the amount present in the inspired air is very low. McGurn reports a case in which a housewife was exposed to an amount calculated to be about 1/250,000 for three hours daily, over a period of three or four years. She developed very severe peripheral neuritis and tachycardia.

The symptoms of chronic carbon monoxide poisoning are exceedingly diverse, and have not thoroughly been studied. The patient complains of headache, dizziness, nausea and vomiting, with which are associated general weakness, languor and often a slow pulse. These symptoms come on at first after the day's work, and disappear quickly in the fresh air. Later, more marked symptoms appear, chiefly from changes in connection with the nervous system and the blood and blood forming organs. The first complaint is commonly numbness, with burning and tingling in hands and feet, which later on may be followed by lightning pains and an alteration of the tendon reflexes, usually an exaggeration. There is often blurring of vision, and optical illusions and hallucinations have been described, as well as convulsions of an epileptoid character. Despondency and insanity have been seen, and McGurn, referred to before, reports a case simulating multiple sclerosis. Musso, quoted by Edsall, describes a series of five patients, two of whom recovered after nine months. The other three became demented and died with a typical picture of parietic dementia.

Symptoms referable to the blood and blood forming organs have received considerable study. Anæmia frequently appears where exposure to the gas has been prolonged; and may be severe enough to simulate the pernicious type. The first changes, however, to occur in the blood, are an increase in the number of both the red and white blood cells, and an elevation of the hæmoglobin percentage. These changes can be observed within a day or two after exposure begins, and are probably entirely compensatory. A certain percentage of the hæmoglobin having become useless through its combination with carbon monoxide, the blood-forming tissues quickly produce an additional number of red cells to compensate for this loss, and maintain an oxygen carrying capacity approximately equivalent to that of the original blood. The red cell count may reach 11,000,000.

The usual blood findings after compensation is complete, are:

Polycythæmia ranging from 5,500,000 to 10,000,000, with no accompanying changes in the individual cells.

Leucocytosis of from 7,000 to 10,500.

Hæmoglobin percentage between ninety-five per cent. and 125.

Differential counts showing eosinophilia, of from five-and-a-half to eight-and-a-half per cent.

Myelocytes sometimes, as high as three per cent.

These findings agree with the experiments of Nasmith and Graham carried out on guinea pigs at Toronto University in 1906. They found that soon after exposure to the gas had begun, the erythrocytes increased in number and immature forms appeared as in any condition where a necessity for more cells is created. After compensation had occurred the erythroblasts disappeared and except for the elevated count the blood appeared normal.

Following removal of the animal to the air, where full compensation had been attained, the erythrocytes did not show an immediate diminution, but hovered around the compensation point for several weeks; and then sometimes fell to normal quite abruptly. The hæmoglobin on the contrary showed a steady decrease from the beginning.

The diagnosis of chronic carbon monoxide poisoning is often difficult to make and depends largely upon the history of the case supplemented by a knowledge of the protean manifestations of the disease. The difficulty is increased by the fact that the patients are frequently persons whose hygienic circumstances are bad in many ways, and it is hard to determine how large a part CO plays in producing the symptoms. A careful history taking particularly with regard to occupation and home surroundings, in all cases showing unexplainable nervous symptoms, accompanied by anæmia and lassitude, will assist materially in clearing up the diagnosis. Among those more commonly affected are cooks, housewives, laundry workers, pressers, furnace tenders, gas workers, moulders, miners, chemists, and garage workers. When gas poisoning is suspected an examination of the blood for the presence of carbonic oxide by one of the usual methods used for its detection is indicated. By these means the presence of very small quantities of the gas can be demonstrated.

The prognosis depends upon the susceptibility of the individual, on the length of time exposed and the quantity of gas in the air. Severe cases have occurred where the quantity inhaled was very small. Usually where the cause of the trouble is removed prompt and complete recovery from symp-

toms occurs. In some cases, however, they persist indefinitely. This is particularly true of the neuritis.

According to a recent article by Beck and Fort, reports of fatal cases of anæmia in the literature are very rare. They were only able to find two; one of which was from the practice of a Norwegian physician in 1891, and the other, one of their own reported in the article referred to.

Apfelbach, recently, said that it is a question yet to be determined whether the compensatory power of the blood-forming organs in those persons living with a polycythæmia will ever exhaust itself. He was unable to find a greater incidence of pernicious anæmia among blast furnace workers.

The first step in the treatment of sufferers from this form of poisoning is, of course, removal of the patient from the source of the gas. After that if the tissues have not been permanently damaged by long continued oxygen deprivation or by the toxic products of altered metabolism, complete recovery will ensue. The usual tonic treatment for any debilitated state is indicated, especially removal to the fresh, pure air of the country or seaside. When anæmia is marked, the administration of arsenic and blood transfusion are further measures to be adopted.

In conclusion there are a few points that will bear emphasis.

1. Chronic carbon monoxide poisoning is probably much more common than is generally supposed, and is a possibility that should always be considered when confronted by unusual types of chronic illness.

2. It is of a very insidious nature, symptoms are often ill-defined, and sources of poisoning are many and widely different.

3. Carbon monoxide is the only important toxic constituent in the exhaust gas from the gasoline engines; and the great increase in the use of motor vehicles, has created a situation that may become a menace to the health not only of the garage worker, but of the general public as well.

I regret that there is nothing original presented here, but I have gathered together information on the subject from every available source, and hope that it has added something of interest to the evening's discussion.

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Selected Articles



THE DIETITIAN IN RELATION TO HOSPITAL ORGANIZATION

HENRY A. CHRISTIAN, M.D.

Some months ago, in answer to a query as to what I regarded one of the striking changes in hospital wards in the last decade or so, I replied that the almost complete disappearance of emaciation impressed me as a striking difference between the wards of to-day and those I had attended in my earlier days of hospital work. I think it is true that emaciation no longer exists generally as it did when typhoids and diabetics, and nephritics, and gastric ulcer and tuberculosis patients, as well as many others, were markedly under-nourished. Dietitians have had much to do with this. The old adage of practice, "feed a cold and starve a fever," had its death knell in the work of Coleman and Shaffer, and of Du Bois, which taught us that a high caloric diet, instead of exaggerating the fever and its effects, was needed to offset the katabolism caused thereby, and that food absorption and utilization was not reduced in the presence of fever. In this work the dietitian has an important role. The adage might now be changed to "so feed all disease that the needed starvation causes no loss of weight," for, after all, the greatest contribution of the dietitian has been to so arrange diets that the food constituents not utilizable by the body, or not suited to the diseased condition, are replaced by utilizable, or suitable ones, in such a ratio that a total caloric intake is provided sufficient for maintenance of weight, and in such form that the food is so balanced as to be a diet adequate for the human body. After all, it is a form of starvation for the diabetic to greatly reduce protein and for the gouty to exclude purins, only that nowadays replacement of values is so skilfully done that the weight chart need not show this partial starvation until the disease becomes an advanced one.

Another change in hospital practice has come in the advent of the dietitians and the shift in values so that at present, at least in the medical wards, the bulk of the patients tend to be fed from the special diet kitchen and the minority from the general kitchen.

You have asked me to say something of the relation of the dietary department to the whole organization of the hospital. The statement just made gives the keynote. Already in the medical wards in some hospitals the diet kitchen feeds more patients than the general kitchen, and the number on special diets in the surgical and special wards is growing and will grow more. This in itself has called and will continue to call for readjustment in hospital administration. I have a feeling that this change in conditions nowhere has been very satisfactorily met. This is partly because of deficiencies existing in dietitions, partly because of structural defects in hospital buildings and partly because of a sort of massive, concrete structure in the cerebral tissues of hospital superintendents and members of the visiting staff, which has hampered obviously needed changes.

Correspondence

28 Bedford Square, London, W.C. 1.

The Hospital, Medical and Nursing World, Toronto, Canada.

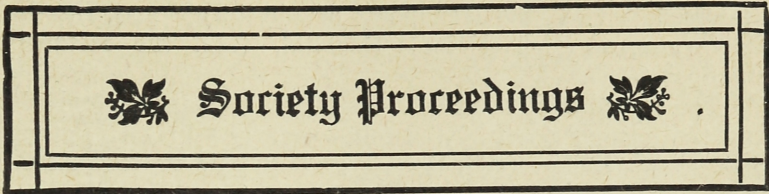
Dear Sirs,—I was very interested in reading your comments on the British Hospitals Association Conference held at Manchester this year, which I had the pleasure of attending.

I agree with you that the American programmes are too long. My own Association hold an annual congress at which two papers only are given. This leaves more time for discussion and after all it is the discussion from which most value is, or should be, obtained. Our programme might be of interest to you, and I have pleasure in enclosing a copy together with the reply form we use.

In April, 1926, our Congress will be enlarged by the introduction of a hospital section containing exhibits by hospital suppliers.

I am, faithfully yours,

I. E. STONE, *Hon. Secretary.*



Society Proceedings

THE AMERICAN DIETETIC ASSOCIATION

The American Dietetic Association held its eighth annual convention in Chicago, Oct. 12-15, 1925. The convention opened on October 12, with Dr. Ruth Wheeler, president, presiding. The topics discussed at the morning session were:

1. Dietary care desired by the surgeon in preparing patients for operation and after operation.
2. Dietary care desired by the obstetrician during pregnancy.

The speakers for these two topics were prominent in each of the fields. A luncheon at noon was diversified with reports from workers in various parts of the United States and Canada: Canada, by Maude A. Perry; New Zealand, Eleanor Wells; China, Pauline Richardson. There was a general round table in the afternoon, at which there was a discussion of The Journal, Placement Bureau, The Constitution, followed by the general business meeting.

The banquet on Monday night was thoroughly dietetic in nature, followed by a splendid programme. The topic for discussion was "Present Achievements and Future Developments in Closely Associated Fields." Dean Anna Goodrich, of New Haven, discussed the Nursing Field, Dr. C. C. Burlingame, of Columbia University and Presbyterian Hospital, New York, the Medical Field, and Dr. Katharine Blunt of the University of Chicago, Normal Nutrition.

Tuesday morning was given over to the section on Administration. The problems relating to the efficient administration of dietary departments were studied in detail. Professor Free-land, of the Massachusetts Institute of Technology, was one of the speakers.

Katharine A. Fisher presided at the noon luncheon. The topics for discussion were; (1) Practical Suggestions from our Exhibitors on Food Standards and Markets; (2) Methods of Judging Equipment.

The afternoon session was devoted to a discussion of Obesity. Dr. A. J. Carlson, of the University of Chicago,

discussed it from the standpoint of physiology and Dr. Chi Chi Wang, of Michael Reese Hospital, from the metabolic standpoint.

The second topic dealt with the methods of handling obesity and the results, given by the following: The Private Patient, Mrs. E. W. Miller Koch, Chicago; The Clinic Patient, Louise Clarke, Presbyterian Hospital, New York City; The Insurance Patient; The College Student, Miss Lydia Roberts, University of Chicago; Obesity Cures, etc.

The Wednesday morning session was conducted by the chairman of the sections on Dieto-therapy, and Social Service. The section on Dieto-therapy undertook during the past year, to review the recent work connected with the metabolism in specific conditions, applying the findings to actual dietaries. The following participated: Martha Koehne, University of Washington; Elizabeth Magers, University of Iowa; Florence Smith, Mayo Clinic, Rochester; and Martha Davis, La Jolla, California.

Dr. Clauser, Barnes Hospital, St. Louis, whose subject was Nephrosis, was the speaker on the dieto-therapy programme.

The section on Education was in charge of Mrs. Breta Luther Griem, as chairman. During the past year she has worked on two problems, a survey of student dietitian courses in hospitals and a study of college courses for students, who are expecting to enter the dietetic field. The results of their work were given on Wednesday afternoon by Miss Florence Otis, Professor of Nutrition, University of Cincinnati; Miss Eva Thallman, Massachusetts General Hospital, and Professor Abby Marlatt, University of Wisconsin.

Dr. R. P. Wilder, Mayo Clinic, Rochester, took up the teaching of dieto-therapy to student nurses.

The session Wednesday night was devoted to the importance of diet in normal and abnormal intestinal conditions.

Hospital Items

NURSES' CLUB ORGANIZED

Meeting on Sept. 17th, at the nurses' residence, Christie Street Hospital, the officers were elected for the Overseas Nurses' Club, which is in process of organization. Mrs.

Edward Robertson was elected president; Miss Gertrude Muldew, vice-president; Mrs. J. J. Fraser, secretary; Mrs. James, corresponding secretary, and Mrs. S. M. Driver, treasurer. The executive committee included: Miss Greenwood, Miss Cameron-Smith, Mrs. Sheen, Miss J. McCallum, Mrs. Ross Jameson, Mrs. McLachlan, Mrs. Scott and Mrs. Bell. Miss E. Campbell, superintendent of the Victorian Order of Nurses, presided. Arrangements were made to hold an organization meeting October 5th in the nurses' residence, Christie Street Hospital.

ELEVEN SCHOLARSHIPS GRANTED BY VICTORIAN ORDER OF NURSES

This year the Board of Governors of the Victorian Order of Nurses for Canada has granted eleven scholarships to graduate nurses to take post-graduate training in public health nursing at Canadian universities. They are Miss Marjorie Baird, Winnipeg; Miss Emma Honeywell, Calgary; Miss Hilda Vohman, Gravenhurst, Ont.; Miss Elsie Fraser, Warren, Ont.; Miss Edna Hughes, Ostrander, Ont.; Miss Bernice Taylor, Ottawa; Miss Jessie M. Lower, Barrie, Ont.; Miss Syretha Squires, Montreal; Miss Mildred Chambers, Montreal; Miss Marguerite Maclean, Truro, N.S.; and Miss Lenta Hall, North Devon, N.S.

NEW PRIVATE GENERAL HOSPITAL IN NEW YORK

The first private general hospital to be created on the West Side, New York City, with radio in every suite, specially designed steel-stainless furniture, a solarium, open air sun-garden and the latest operating and special treatment rooms, will immediately be built on the south side of 76th Street just east of Amsterdam Avenue. The entire building is to be odor and noise-proof and the furnishings and decorations will express an entirely new note in that they will combine the atmosphere of the tasteful, modern home and all that is known regarding sanitary furnishings.

The development was recently financed when S. W. Straus & Co. underwrote an issue of \$250,000 first mortgage six per cent. serial coupon gold bonds of the 170 West 76th Street Realty Co.; headed by Dr. Harold M. Hays, of 23 West 74th Street. Dr. Hays had a wide experience during the World War in base hospital organization. Dr. Hays since the war has conducted a private sanitarium at 205 West 70th Street.

Associated with him in the new development are several other well-known physicians and a group of business men.

"The Park West Medical Building," Dr. Hays states, "is to be erected and operated for the medical men of New York. There are about twenty-five practitioners and specialists of medicine and surgery intimately interested in the project, but the building, its equipment and service are to be at the disposal of the entire profession.

"It will be opened about May 1, 1926. The operating and X-ray rooms, the solarium and open air sun roof have been designed to give patients every exclusive benefit and luxury."

The building will be eight stories, steel frame, absolutely fire and noise proof. There will be sixty suites, with a capacity for seventy-eight patients. Only contagious diseases will be excluded. The property fronts forty feet on the south side of 76th Street with a depth of one hundred and two feet.

Book Review

Everyday Mouth Hygiene. By Joseph Head, M.D., D.D.S., Dentist to the Jefferson Hospital, Philadelphia. Second Edition. Philadelphia and London: The W. B. Saunders Company. Canadian Agents: McAinsh & Co., Limited, Toronto. 1925. Price, \$1.25.

This book illustrates by photos and describes the various phases of cleansing the mouth. It emphasizes the importance of doing this work thoroughly. Mothers and nurses should read, study and memorize all these methods so as to be able to teach the young how to properly carry on the work themselves.

Powerful Antisymphilitic

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THE BLOODLESS PHLEBOTOMIST.

The *Bloodless Phlebotomist* for June is a credit to its publishers, the Denver Chemical Manufacturing Company, New York City. It contains a number of most interesting contributions; one by O. M. Barber, M.D., entitled, "British Medicinal Practice of To-day and Yesterday" (excerpt); Dr. Samuel Johnson's Unprinted Prayer (from the Pierpont Morgan collection); Operation Picture on Egypt's Tombs; "Sport's Injuries," by Frank Romer, M.R.C.S. Doctor, if you do not receive a copy of "The British Empire Number" of the *Bloodless Phlebotomist*, ask for one.

PETROLAGAR—THE MECHANICAL TREATMENT FOR CONSTIPATION.

Deshell Laboratories of Canada, Limited, now are prepared to produce Petrolagar in Canada, for the use of the medical profession of the Dominion. Their laboratories are situated at 245 Carlaw Avenue, Toronto.

Petrolagar has been prepared for the medical profession for the past five years. It is a scientific treatment for constipation and is manufactured in four distinct forms: Plain (containing no medication), with Phenolphthalein (containing $1\frac{1}{2}$ grains of phenolphthalein to the ounce), with Alkaline (containing milk of magnesia), and Unsweetened (containing no sugar and indicated in diabetic cases).

Petrolagar is the original mineral oil and agar emulsion. It contains 65 per cent. mineral oil, 10 per cent. prepared agar and $1\frac{1}{2}$ per cent. anhydrous agar. No fermentive gums, such as acacia, are used. Agar-agar alone is employed as the emulsifying agent.

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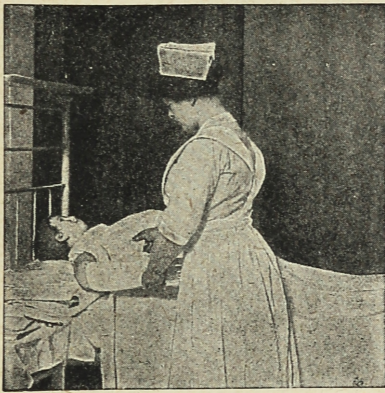
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The CHASE HOSPITAL DOLL and *The CHASE HOSPITAL BABY* because of their inherent durability and because they permit such great flexibility and wide latitude in the demonstrations and practice of medical, surgical, and hygienic principles, are in daily use all over the world in Hospitals, Nurses' Training Schools, Home Nursing Classes, Baby Clinics, Mothers' Classes, and by Visiting Nurses and Baby-Welfare Workers. They are standard and necessary equipment.

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HOSPITAL LIGHTING.

Perhaps more than any other class of lighting, that of hospitals requires the most careful treatment. Modern science shows that the activities in the hospital are more dependent on good lighting than anything else—lighting that incorporates high intensity and finest quality, soft, white light, free from glare, protecting the eyes of patients and workers. Extreme sanitation, safety and accuracy are requisite features of hospital work and every attention should be given to things that assist the work of doctors and nurses, and help bring about the quick recovery of the patient. Sanitation is the first thought in any hospital, and no room, corridor, closet or kitchen can be kept clean unless it is well lighted. Cleanliness should be an outstanding characteristic of the lighting equipment as well, and this should be of such a form and so constructed as to not easily collect dust. Fixtures without sharp corners, crevices or set screws are easiest to clean and keep clean. Uniformity and even distribution of light, free from bright spots and pronounced shadows, producing a cheerful, pleasing result is important, not only in the wards, but in reception rooms and lobbies, where friends and relatives wait, sometimes under depressing circumstances. The importance of ward lighting cannot be overestimated where every comfort of the patient is desired and where a lighting unit giving a soft, white light and arranged for local illumination near the beds in such a way that the patients' eyes are protected from strain, gives the best results. The Tallman Brass & Metal Limited, Hamilton, Ontario, large manufacturers of lighting fixtures, have given special consideration to hospital lighting and will freely send to those interested, catalogues, bulletins and full information concerning their patented, brascolite, raylite, algite and vitro-lite fittings recommended for this purpose. These fixtures are all a combination of white glass and white porcelain enamelled metal work, harmonizing perfectly with furnishings and other fittings and insuring absolute sanitation and cleanliness with the utmost lighting efficiency. The marvellous daylight quality of the light produced—its pure, clear, even distribution, soft warm light, without glare, secured by diffusion and reflection, make these units the most suitable and serviceable lighting for modern hospital purposes.

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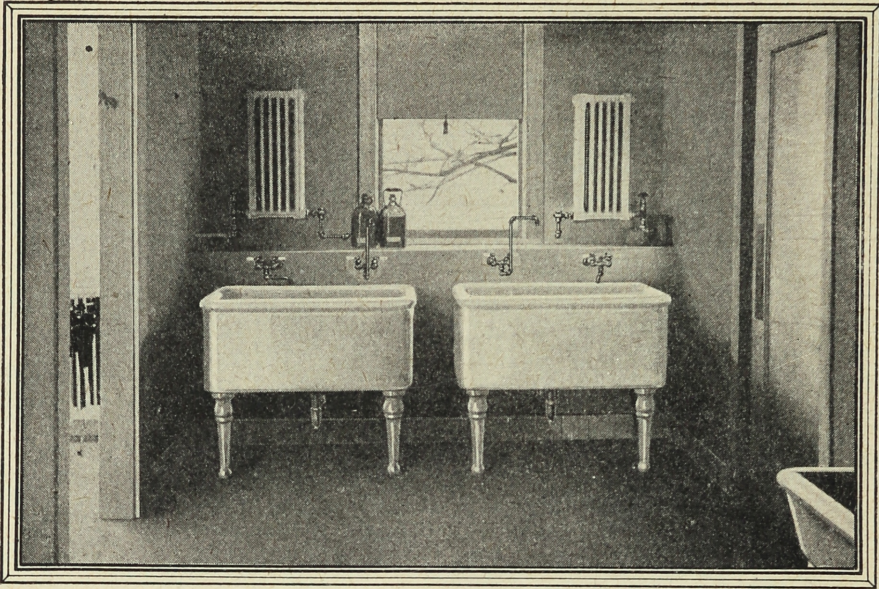
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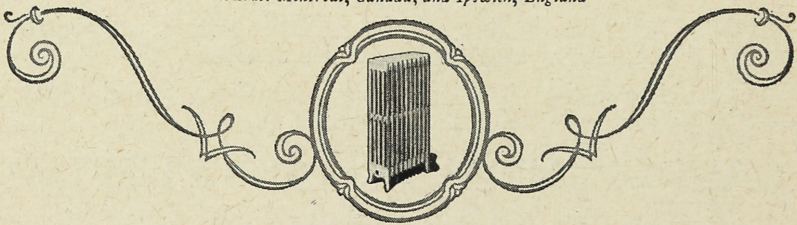
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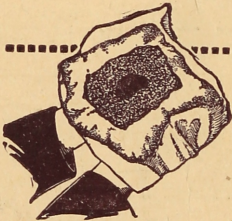
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