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The Official Organ of the Provincial Hospital Associations



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THE HOSPITAL, MEDICAL AND NURSING WORLD

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Sept., 1924

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AND NURSING WORLD

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THE HOSPITAL, MEDICAL

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Sept., 1921



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Sept., 1924





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Sept., 1924



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the largest steam plant have demonstrated, during the last ten years, the efficiency, cleanliness and economy of burning oil with properly designed installations and equipment.

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AND NURSING WORLD

Sept., 1924



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Sept., 1924

ELECTION to the

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of

PHYSICIANS and SURGEONS of ONTARIO

The Quadrennial Elections of the College, to select representatives to the Council of the College, will be held this Fall.

Voting Papers must be in the hands of the appointed Returning Officers by the hour of two o'clock in the afternoon of Wednesday, November 12, 1924.

Nomination Papers must be in the hands of the appointed Returning Officers by the hour of two o'clock in the afternoon of Wednesday, October 22, 1924.

Any member of the College presenting himself for election to the Council of the College of Physicians and Surgeons of Ontario for the Territorial Division in which he resides, must receive a nomination of at least twenty registered practitioners resident in such Division.



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By means of the chemical tests we determine the purity of Mercurosal, and from that might be judged its relative

from that might be judged its relative freedom from toxicity; nevertheless the physiologic toxicity test is invariably performed as an added precaution.

*Disodiumhydroxymercurisalicyloxyacetate. Contains about 43.5% of mercury in organic combination. Relatively non-toxic and non-irritating. Adapted for intravenous and intramuscular administration in the treatment of syphilis.

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Sept., 1924



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AND NURSING WORLD



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THE HOSPITAL, MEDICAL AND NURSING WORLD

TORONTO, CANADA

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

VOL. XXVI TORONTO, SEPTEMBER, 1924 No. 3

Editorial

The Religious Aspects of Hospitals

The query arises whether the above caption is allowable—whether, indeed, the hospitals of to-day have any religious aspect in the old-time sense of the term.

Time has been, for centuries from the primitive civilization to within memory of the present generation, when sickness has been regarded as a direct visitation, either of evil spirits or of the good God for punitive purposes. Note the arguments of Job and his friends, the penitential psalms, the service for the sick in modern Church rituals. "Did this man sin or his parents that he should be born blind?" has expressed for ages the attitude of the peoples toward disease.

For this reason the Church sponsored the first form of hospitals in the monasteries with monks as healers. Later came the voluntary hospitals for the poor. The many "Hotels Dieu" still existent evidence the original linking of religion with the housing and treatment of disease. During the past quarter-century science has done a tremendous work in educating the people regarding the origin of disease. Many of its worst forms have been shewn to be of commonplace origin and preventive by practical measures. It is no longer looked upon as a mysterious or supernatural visitation, but as something to be dealt with along practical lines.

As a consequence religion and disease are not the twin brothers of yore. Hospitals are no longer conducted on lines of sentiment, but of up-to-date efficiency. The work of the praying band and the chaplain is largely replaced by that more efficient body, the hospital social service corps, whose work, if well done, is after all religion-in-action.

This does not mean that the services of a chaplain from a religious point of view are not desirable; for the friendless and desolate, for the unknown and unrecognized, for the patient *in extremis* and the last sad rites, his service is essential.

Yet it remains that the religious aspect of today's hospitals has changed materially with to-day's changing values.

The Toronto General Hospital

The report of the superintendent of this premier institution has been issued. Its motto is: "For the common good;" its text: "To heal all manner of sickness and all manner of disease." These legends are appropriate and consonant with a board upon the membership of which one notes the names of Revs. Canon Cody, Dr. Bruce Macdonald and Sir Robert Falconer. The superintendent's reports shew an excess of operating expenses over receipts of \$31,000, \$21,000 of this is found in items for salaries and wages, \$9,965 is a direct charge against the diabetic clinic. The discovery of insulin and the very close association of this hospital with the early treatment of diabetes with insulin, brought a great number of the city's indigent to the clinic for treatment; and as fully half the treatment depends on diet, enlargement of the diet-kitchen and the employment of more dietitians was imperative.

Salaries and wages for 1923 amounted to \$380,277.64!

This new hospital is already beginning to shew signs of wear and tear. There were 11,436 requisitions to the engineer for jobs ranging from a new washer to a drain pipe. Eleven hundred calls were made to the carpenter for repair of locks, clocks, windows and 500 pieces of broken furniture. Scores of rooms were repainted and two plasterers kept constantly busy on outside work alone.

Another change in the accounting system involved an extra expense of \$3,500 per year, and precluded (unfortunately) a detailed financial comparison of 1922 with 1923.

Nearly 11,000 patients were treated in 1923 surgical, 4,653; medical, 2,883; eye, ear, nose and throat, 1,943; obstetrics, 1,439. About 54 per cent. were Canadian; 21 per cent. English; 6 per cent. Scotch. Over 55,000 treatments were given in the out-door clinic.

Apart from the tremendous expense item, and the work in the diabetic clinic, the most striking of the other items is that of the pre-natal clinic, wherein it is stated that 1,482 expectant mothers reported periodically. Among these patients there were but 2.8 per cent. of still births and 1.9 per cent. of premature births. Among women admitted for delivery who had not enjoyed the advantages of a pre-natal clinic there were 19.7 per cent. still births and 13.3 per cent. premature births!

The training school continues doing fine work. The excellent young women trained in this hospital are in great demand for responsible nursing posts all over North America. Some 955 were applied for, but only 95 could comply.

Regular classes in dietetics are given for patients who have been in the hospital and discharged.

The X-ray department cost \$43,500. No serious abdominal operation may be performed without referring the patient to the X-ray department for confirmation of diagnosis.

The report emphasizes the work in pathology and bacteriology, particularly that of the quick section service.

Under Mrs. Wallace Barrett the library committee has distributed 15,000 books and 6,000 magazines to in-patients. Many patients have as a result of this acquired the reading habit.

Hospital Drives and Doctors

There were two drives for money for hospitals in a Canadian city lately—unfortunately, within a month of each other. In these the medical staff took a very active part both in contributing and canvassing. A few years ago a third hospital in this same city put on a similar big campaign in which the

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doctors were not asked to contribute nor did they do any canvassing. Which acted the more wisely the third or the first two? Our opinion is that the third did.

Doctors do a great deal of general work among the poor, both outside of hospitals and in them, for which they get no pay. For in caring for the sick poor in the hospitals their quid pro quo is experience and prestige. Does this suitably remunerate them for their services? We have never heard them say, but presume they think it does, otherwise they would not be so keen to get on, and remain on, hospital staffs. We do not think they get an adequate return. But, for argument's sake, let us admit they do. Then, as a rule, they should not be expected to put their hands in their pockets to assist in hospital construction or maintenance. Of course, there may be an occasional wealthy doctor on a hospital staff. If he feels inclined to contribute of his surplus in this way, well and good; but we think the rank and file of the staff should not contribute to hospital funds. They cannot afford it: there are too many other more pressing calls for their money.

Again, remembering that "gifts blind the eyes," can trustee boards discipline, degrade, or dismiss these contributing doctors—as they will have to do, sooner or later—with the same freedom which would be possible were they, the trustees, not under certain obligation to these men? We say "No."

In our view the doctors' contributions should neither be expected or accepted.

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Sept., 1924

"Nitor in Adversum"

This, if we remember well, was, and is (now properly) the motto of Wilhelm the wicked. It might well be the motto of every superintendent of a large hospital. What with a possible captious trustee, a crusty member of the visiting staff, a wayward interne, an autocratic superintendent of nurses, a dissatisfied patient or complaining relative, an increasing deficit, a laundry doing unsatisfactory work, an unfireproof building, or a score of other sources of worry, is it any wonder the superintendent truly feels he is striving against adverse circumstances?

How meet the struggle? The good man (or woman) will call to his help the Higher Powers. He must remember to be "strong and of a good courage." To appropriate this advice he ought to be one with a single eye—of fixed purpose, sincere and true, of good judgment, kindliness and tact and with the saving sense of humor.

On the physical side he ought to be in good health and keep so. He must have plenty of sleep, sufficient pleasant exercise (or play); time for quietude and leisurely thought, and social contact with his friends; enough of the proper food partaken of slowly; and a *hobby*.

This interchange between work and diversion vocation and avocation—will do much to make him enjoy life, though strenuous.

If possible, he should not carry his hospital cares to his home, his club or his holiday trip. That this may be the case he should feel well qualified for his work; should do his best, and leave the rest. Happy is the superintendent who can do this.

The Hospital, Medical, and Nursing World

(Continuing the Hospital World) Toronto. Canada

The official organ of The Provincial Hospital Associations

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EIGHT FACTORS IN PURCHASE OF FOOD

SISTER MARY AGATHA, MERCY HOSPITAL, CHICAGO.

The statement of Alvin Macaulay, president of the Packard Motor Company, in his sermonette on "Reputation:" "The man who builds and the man who buys are both beneficiaries of a good reputation," truly applies to hospitals. For who, more than they, build up the sick on food selected by a buyer who must have always in mind the reputation of the hospital?

In recognition of the great importance of food to health, and its prominence in the cost of living, food values are now taught as part of the work in domestic science or home economics in practically all schools of repute.

Buying carefully, conscientiously, thoughtfully, and economically involves the following:

(1) The patients. (2) The quality and quantity of food to be purchased. (3) How to buy. (4) When to buy. (5) From whom to buy. (6) Records of transactions. (7) Storage and care. (8) Preparation.

THE FOUR WHEELS OF THE HOSPITAL.

Patients are defined by Webster as "persons under medical or surgical treatment." They should be looked upon as members of God's suffering humanity and treated accordingly, receiving first consideration from every viewpoint, the least not being the buying of the means to build them up and restore to them heaven's greatest of all temporal blessings health.

The hospital, as a composite unit built around the patient, must necessarily include the sisters, doctors, interns, nurses and help. They, too, must receive their respective consideration.

In buying for the patient, only the very best quality and most nutritious food should be on the list. In foods—more than in any other commodity—the very best is always the least expensive. Experience has taught most of us that in purchasing the best there is less time and labor required in its preparation and less waste to be disposed of.

It stands to reason that the food for the patient must be of a different nature from that for anyone else. Therefore, the individual patient must receive individual attention. The patient in a weakened condition, probably just recovering

Sept., 1924 AND NURSING WORLD

from a serious operation, surely cannot and should not have the same kind of a tray that a convalescing patient receives. A stomach case cannot dispose of the same kind nor quantity of food served a fractured arm case. (All information pertaining to food for the individual patient is obtained from the floor supervisor on forms printed for this purpose).

As the sisters are more closely confined—having fewer opportunities to be away from the hospital and procure a change of food, etc.—and are in almost constant association with the patient, they are more exposed to disease, and unless they are fortified with a goodly amount of physical strength (possible only with good food) they will not have the required power of resistance and thus will become unable to do the work which the Lord and they intended when they became hospital sisters.

Interns come to the hospital after years of study and nerve strain and need not only good and nourishing food, but special attention to help make their critical years in the hospital the better and the happier. This is materially assisted by giving them steak when they want steak, and pie when they want pie.

Nurses, having just finished their high school work, and coming from homes of refinement and culture where their diet was carefully considered, should be given more than an ordinary amount of thought when their food is selected. As well as being nutritious, it must be attractive.

Because help is such a necessary factor in every hospital it is quite essential that they be well fed with good, wholesome food. Unless this unit is satisfied, not much can be accomplished. The help can make or mar a hospital.

In giving these four wheels of the hospital (sisters, doctors, nurses and help), their well deserved consideration, better service and greater care are assured the patient.

FACTORS IN BUYING.

The quantity of the food to be purchased depends, of course, upon the number to be fed, local conditions (such as store room, refrigerator and kitchen facilities), whether or not the market of supplies is equipped to render special service, and the market quotations. The prudent buyer will not store up perishable supplies in a greater quantity than for one or two days' consumption. Buying on competitive bids is really the only practical and business-like way. When the man from whom you buy knows that five or six others are being given the same opportunity to procure your business by supplying the best goods at the lowest figure possible, he, too, will sharpen his pencil and quote you as low as he really can.

If you do not use this method, try it for a while and you will be amazed at the results. In comparing figures I have found an actual difference of \$27 between the highest and lowest bidder on a \$125 purchase of fruit and vegetables.

Knowledge of just what is the best quality is necessary to standardize the article purchased. For instance, the standard for the best quality in lettuce is that it be regular in shape, firm, have a hard head, and no signs of decay. Avoid lettuce that is soft and has loose, coarse leaves. (The exclusive use of Iceberg lettuce has proved a good investment.)

In buying canned goods, it is always best to see samples and compare brands, counting and comparing the actual number of servings contained in the various cans. Buy on quality, not on price alone.

SELECTION OF MEATS.

In selecting meats here is a wide scope for the buyer to exercise good judgment, which comes only with a knowledge of the correct standard of quality. Quality in beef, for instance, is indicated by smoothness, grain, and color of the meat. The buying of meats is such an extensive subject that a whole paper may be written on it alone without telling half the story obtained by experience and observation. It almost goes without saying that it is most advantageous to buy meat by the carcass and have it trimmed and cut to order. All dealers will gladly do this for you.

When to buy is one of the most difficult problems of the work. You must be familiar with all the details of your stock on hand, amount of consumption, prospective crops, market conditions, and the effect of the scarcity or abundance of one commodity upon another. For instance, the scarcity of raisins and black figs during their season of popularity when certain recipes make them an actual necessity.

This information can be obtained only by reading everything you can procure in the way of newspapers, magazines, and advertisements, and by interviewing salesmen. Without this knowledge it is impossible to buy advantageously to the hospital.

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It usually pays to buy "futures," and early buying is advisable for the reason that in the event of a "short pack," prices go up and those who buy late pay the higher prices, whereas early buying insures protection against these natural advances. The possible causes for advance in "futures" are frosts or other weather conditions which reduce crops; labor trouble, tin shortage, heavy demands, transportation difficulties, etc.

BUY FROM FIRMS OF CHARACTER.

The majority of buyers will agree with me, I think, when I quote: "It is always better to pay a little more money in order to do business with men of character. The other fellow will get you sooner or later." The large wholesale grocer's and packer's stock is always moving, and, therefore, they have the best assortment and freshest goods to supply.

As these wholesale houses employ only experienced salesmen it behooves the economic buyer to see and cultivate them. Specializing as they do in their line of work they become authorities on market conditions, the comparative values of various grades, prospective crops, advantageous contracts, etc., and can render valuable assistance when the anxious buyer is in doubt. My experience has been, it pays to see the salesmen.

Information pertaining to the supplies and amount to be purchased is obtained from records of the store room man, who keeps an account of inventory on hand first of month, receipts and distribution of current month, as well as copy of the menu. When supplies are received they should be examined, checked, and weighed (when bought by the pound, such as meats and vegetables), and then entered in the receiving book which provides for the following information: (1) Date; (2) from whom received; (3) description; (4) quantity; (5) for what purpose intended.

All supplies should be distributed only on signed requisitions.

EFFICIENT STORE ROOM NECESSARY.

An efficient store room keeper can make himself a necessary asset to the hospital. Upon him depends the honest checking in of supplies and their placing and arranging to facilitate the distribution of the old stock previous to the distribution of the supplies more recently purchased. Hearty ce-operation on the part of those employed in the store room is a complement to economic buying. Without economy in distribution, economy in buying is useless.

Preparation of the food which has involved so much thought, labor, and expense in its buying, should be entrusted only to competent cooks under the direction of an experienced and well paid chef, or, under ideal conditions, a steward for what doth it profit a hospital if the buyer selects all the best goods in the whole world and they be spoiled in the cooking? Preparation of the food demands the previous arrangement of a well-balanced and attractive menu. In arranging this menu the following must be considered:

(1) For whom the food is to be prepared; (2) the number to be served; (3) the food which is in season; (4) selection and arrangement for each day of the week; (5) the market prices and cost.

As the one most familiar with the stock, prices, market conditions, and storage capacity, the buyer, assisted by the dietitian and chef, should control the arranging of the menu, which, in turn, should be submitted to the superintendent for approval.

As buying for some one else is always a responsibility, the buyer for a hospital must make it a personal matter, keeping in mind that to buy advantageously, correct standard of quality and price standpoint should be the watchword.

Ability to buy is a God-given gift, but it can be acquired and developed by experience and study.—*Hospital Management*.

THE COMPARATIVE MERITS OF FUEL OIL AND COAL AS A FUEL*

George McL. Waldie, M.D., Superintendent, Fair Oaks Lodge Sanatorium, Wadena, Minnesota.

In presenting this discussion of the relative merits of coal and oil as a fuel, there are several points which should be clearly understood:

(1) The opinions here expressed are based on a relatively short experience with oil as a fuel; (2) the writer does not pose as an oil expert, but is basing his statements on his experience as a hospital superintendent; (3) it is appreciated that every heating plant presents certain peculiarities which

*Read before the Minnesota Sanatorium Association, Wadena, Minnesota, July 21st, 1923.

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tend to make it an individual problem when the ideal fuel is under consideration.

With these points admitted we shall take up what we believe to be one of the most important innovations demanding the consideration of careful and conscientious hospital administrators in this section of the country.

Let us first enumerate the objections to oil as a fuel as we have heard them expressed since becoming interested in this subject. The most concrete and definite statement which we have come across is that of the trustees of the Worcester, Massachusetts, Hospital, as expressed by Dr. Charles A. Drew at the May meeting of the New England Hospital Association. Doctor Drew stated that his trustees had decided against the use of oil as a fuel for the following reasons:

(1) Supply of coal is known—oil is not known. Of the estimated available supply forty per cent. has already been used; (2) coal contract gets coal. The typical oil contract has many unusual provisions; (3) coal is sold on a reasonable profit basis, while the price of oil is fixed in relation to the price of coal; (4) storage of oil is difficult; (5) fireman can stoke with coal to prevent smoke and heat loss; (6) odors from oil burners are objectionable because of sulphur in oil; (7) coal has practically no fire hazard, while oil is very hazardous; (8) coal equipment has been on the market for many years and is satisfactory; oil burners are still in the experimental stage.

These objections were voiced several years ago when Doctor Drew first suggested oil as a fuel, and for this reason many of the points raised by his trustees have failed to materialize as legitimate reasons against the use of oil. We have all heard of the shortage of oil, but new fields are being worked and there is little evidence at this time of any immediate shortage. The writer raised this particular objection to Doctor Prosser of the Dunwoody Institute, where there is an equipment similar to that which we have subsequently installed at Fair Oaks Lodge Sanatorium. Doctor Prosser replied by stating that even the most pessimistic would grant an adequate supply for the next ten years and that he anticipated saving a sufficient sum within two or three years to pay for his installation; if after ten years it should be found impractical to secure oil there would then be a new situation to meet, and it is the duty of institutional directors to meet such new situations frequently.

Before going further with this discussion of the various objections which are raised against oil, it would be well to emphasize the type of oil which we are using. It is known as fuel oil and consists roughly of crude oil from which has been extracted gasoline and kerosene. It is thus evident that we are burning what might be termed a by-product in the manufacture of gasoline. The supply of this by-product is dependent on the demand for gasoline, and its use interferes in no way with the distribution of gasoline.

It is difficult for us to appreciate the merit of the next reason which is advanced by the Worcester Hospital trustees against oil: "Coal contract gets coal. The typical oil contract has many unusual provisions." Our experience would suggest the reverse. Our coal contracts of the past have brought to us some coal, some dirt, and much slate. The percentage of uninflammable matter has been variable, but it was a rare instance which brought to us a high grade of fuel. Our oil purchases have been on a much more satisfactory basis. We use an oil of a definite specific gravity and we receive it as specified. There is no foreign material in our car of oil with the exception of a small quantity of matter which we remove when passing the oil through screens. The percentage of uninflammable material is negligible.

Objection three, that "Coal is sold on a reasonable profit basis while the price of oil is fixed in relation to the price of coal," will find few supporters as far as the first part of the statement is concerned. However, it is not theoretically true at the present time that the price of coal determines the price of oil. The type of oil which we are using has a greater number of heat units per dollar than coal, although it is our opinion that we may shortly look for the fulfilment of this point and that the price of oil will be raised to conform with the price of coal. This we cannot grant as an objection because oil possesses sufficient merit over coal as a fuel to warrant its use if it costs no more than coal.

The objection, "Storage of oil is difficult," is not readily understood. It would appear that the storage of oil is more simple than that of coal unless the coal is to be left lying outside without protection, and such a custom would not be easily defended.

Objection five is that "fireman can stoke coal so as to prevent smoke and heat loss." This may be true theoretically, but it certainly has not worked out practically. How many of you

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superintendents are satisfied that the fireman can stoke with coal so as to prevent smoke?

"Odors from oil burners are objectionable because of the sulphur in oil" is the sixth objection. Occasionally, we have noticed a slight odor from the burning of oil, but this has always been due to imperfect combustion and can instantly be corrected by adjusting the burner. As a factor in influencing the installing of an oil burner this is negligible.

The seventh objection is, "Coal has practically no fire hazard, while oil is very hazardous." We believe the converse of this statement would be more nearly true. The oil which we are burning is uninflammable under ordinary conditions. Burning waste can even be thrown into a bucket of fuel oil without ignition. It is only after it has been properly mixed with air that fuel oil becomes highly inflammable. In our institution there is little question that our fire hazard has been reduced by the change—certainly it has not been increased, and our insurance rate has not been altered. In our opinion we are entitled to a reduction in insurance rate, but thus far it has not been granted.

The eighth objection is that "coal equipment has been on the market for many years and is satisfactory, while oil burners are still in the experimental stage." This, in our judgment, should be amended to read: "coal equipment has been on the market for many years and has never been entirely satisfactory, while oil burners have long since passed the experimental stage and are now giving general satisfaction." A recent trip through eastern Canada and California was a revelation regarding oil burning. Many inquiries were made regarding the use of oil as a fuel, and everywhere there was expressed nothing but satisfaction. Locomotives are fired with oil, and coast steamers, oil burners, and the majority of heating plants operate on oil along the Pacific Coast. The type of oil generally used is fuel oil of a gravity similar to that which we have been using.

Another objection to oil burners which is frequently raised is the noise of operation. This idea has developed, we believe, from observation of the older types of burners which depended on steam for power. There is no question about their being noisy. The type we are using is electrically driven and the characteristic sound is the steady hum of an electric motor. This has not proven objectionable. Therefore, it would appear to us that the objections commonly set forth against the introduction of oil as a fuel are without merit, and that oil possesses many advantages over coal. However, we have not described our views on the three points of greatest interest to superintendents and sanatorium commissioners: why do you want to use oil rather than coal, how much did your installation cost you, and is it economical to operate?

Our problem at Wadena was peculiar. We had been operating for more than five years with but one boiler, and a duplicate boiler was badly needed. The only available room for this second boiler was our fuel room, already too small for adequate storage. Furthermore, our boiler room was in the basement of the sanatorium and we had a chimney which was far too low for the economical consumption of coal. Because of the soot and smoke nuisance which had been existent, we felt it necessary to add to our chimney and to consider some coal burning system which would consume coal with the least possible amount of smoke and soot. In addition it was necessary to build a new fuel room to substitute for the one which we contemplated giving over to the second boiler.

While considering this improvement our architects suggested an investigation into the merits of oil burners, which were then becoming popular in the Twin Cities. We found on investigation that we could completely install an oil burning system at a lower price than the contemplated coal burning system. In addition we would have no cause to mar the physical features of the building by erection of a tall chimncy, and we would have ridded ourselves absolutely and permanently of the smoke and soot nuisance. This all appeared very attractive to us and after thorough investigation we decided upon the oil burning system which we have subsequently installed.

The equipment includes, in addition to the burners, of which there is one for each boiler, the necessary pump to circulate the oil, a twenty-thousand gallon oil storage tank which is buried outside of the building, and apparatus for the handling and transportation of oil from the tank car to the storage tank. Our storage facilities are at present entirely inadequate. We should have been provided with a second storage tank of equal capacity. This would permit us to put in a year's supply of oil during the summer months when the oil flows easily, and would not subject us to the inconvenience and expense of handling tank cars of oil during the cold weather.

As we have previously stated, we are burning fuel oil, and not distillate nor any other high grade of oil. Our product is a by-product of refining and should not be confused with the oil generally used in household burners. One of the physical properties of this fuel oil is its stiffening in consistency at comparatively high temperatures. When there is the slightest chill in the air the oil ceases to be fluid and takes on the consistency of axle grease. This is the reason for emphasizing the wisdom of providing sufficient storage facilities for the handling of oil only during warm weather.

The factors influencing our choice of oil burning equipment rather than coal, were as follows:

(1) The initial cost of installing an oil burning system was less than that of installing a similarly complete coal burning system; (2) we would forever be freed of our coal soot and would not be subjected to the disagreeable features attending the burning of coal; (3) we could deliver additional fuel to the sanatorium without the flying dust and the grime which were always, present when we were receiving coal: (4) our boiler room could be cleaned and kept clean, and we would not track coal dust through our building after every visit to the boiler room, nor would the engineer leave a trail of grime behind him when called upon to do repair work in the buildings; (5) because of the mechanical operation of the burners the engineer would be released for other work and would not be confined to the boiler room so constantly. In larger plants this means the reduction of boiler room force for there is no need to employ so many firemen when using oil; (6) we felt there would be an appreciable saving by the use of oil as a fuel; (7) there is no residue with the burning of oil, and, therefore, there would be a saving of labor for the removal and disposal of ash.

Our experience with oil is too brief to permit positive statements regarding the economy of operation, and it will be necessary to express opinions rather than to recite figures. On a fuel value basis it is estimated that for practical purposes 127 gallons of fuel oil will produce as many heat units as one ton of soft coal. We have been purchasing fuel oil at an average cost of 6.6 cents per gallon laid down at Wadena. Of this amount about 2.3 cents have been the cost of the oil itself, and 4.3 cents the freight to Wadena. Delivery to the sanatorium from the railroad siding has averaged .9 cents, making the actual cost of fuel oil 7.5 cents per gallon laid down in our storage tank. On the basis of 127 gallons to the ton of coal, this would compare with \$9.52 soft coal laid down in the bunkers.

It had previously been our custom to reduce our smoke and soot nuisance to a minimum by the use of Pocohontas coal, and the average cost of this grade of fuel during 1921 was \$13.56 laid down in our cellar. There is considerable difference of opinion regarding the economy of using this grade of fuel, but it seems to be the weight of opinion that cheaper fuel will not produce any more heat units per dollar than this more expensive type. Very careful investigations in institutions which check their fuel consumption with CO_2 tests bear out this opinion.

It would be unfair to leave this comparison of costs without some explanation of the different factors affecting oil and coal. First, when one buys a ton of coal there is much material that cannot be burned—including the stone and dirt purchased and the ash which passes through unconsumed. With oil one has practically no waste. Further, with oil there is no unconsumed carbon escaping through the chimney, and with coal there is much smoke. This black smoke found on burning coal means a failure to utilize some of the fuel which has been weighed and paid for.

Furthermore, there is the factor of flexibility of operation when oil is used, which does not figure in the use of coal. There is no banking of fires and there is no need to carry a constant fire during those periods when the demand for steam is not heavy. During the more moderate part of the winter our burners are shut off late at night and it is a matter of only a few minutes before a head of steam is secured in the morning. During the summer we have our burners shut off the greater part of the time, and recent figures show us to be using about thirty gallons of oil per day. At a cost of 7.5 cents per gallon this gives us a fuel cost of \$2.25 per day, although during previous years we had been burning about one-half ton of coal daily at a cost of five or six dollars.

During 1921 our total cost was \$3,830.39. It is my belief that our 1923 fuel cost will be not more than \$2,600. This estimate is based on our consumption during the first
six months of the year with a liberal estimate of our fuel consumptive during the latter part of the year.

Our initial installation was such that the first few months of operation with oil would suggest no appreciable difference in the cost of burning oil or coal, but the contracting engineers have made several very radical changes and our oil consumption has been reduced immensely. In addition, it requires some experience to operate an oil burner to the best advantage, just as it requires experience to fire economically with coal. We are getting this experience and we now feel confident that oil will prove more economical than coal.

To summarize: (1) Oil presents many advantages over coal as a fuel; (2) oil burns clean and without the production of ash, soot, or smoke; (3) oil can be handled without the disagreeable features of coal; (4) oil can be burned with less labor than coal; (5) oil burning is more flexible than coal burning; (6) oil is no more expensive than coal, and in all probability will prove more economical.—Hospital Progress.

RADIO-ING THE HEART BEAT

One of the problems of medical teaching has been the development of some method whereby large numbers of students could listen to the heart-beat, or other sounds within the chest of a patient, at the same time.

Such a device has now been perfected and is in use in the clinic of Dr. Richard Cabot in the Massachusetts General Hospital. The apparatus is described by Dr. C. J. Gamble and D. E. Replogle of Philadelphia.

The essential part is an electrical amplifier designed for three successive magnifications of the current changes produced in a sensitive transmitter. For this purpose three element vacuum tubes such as are used in the ordinary radio receiving set are employed. In addition it has been necessary to devise special wiring which would transmit all sounds free from distortion. A special form of transmitter had to be developed, and this was enclosed in a brass case to prevent the intrusion of extraneous sounds.

In distributing the sounds to be heard an individual receiver is provided for each student who may plug in directly at his desk. Obviously the new method opens up great possibilities for medical teaching. Heart or lung sounds may be transmitted for considerable distances and the examiner may speak directly into the device and thus convey his comments on the conditions observed.

Thus far it has been impossible to use the loud speaker because more delicate sounds are lost. Undoubtedly at the present rate of improvement in radio apparatus further developments in this line may be confidently anticipated.— Hygeia.

SHOULD GENERAL HOSPITALS ESTABLISH DEPARTMENTS FOR PHYSIOTHERAPY ?*

By John Harvey Kellogg, M.D., Superintendent, Battle Creek Sanitarium, Battle Creek,

MICH.

A department devoted to physiotherapy may not be needed by every hospital, but every hospital needs physiotherapy. Every hospital does not need a dining-room, but every hospital needs food for its patients and a dietitian or nurses and physicians trained in the principles of nutrition and scientific feeding. So every hospital needs physiotherapy and a physiotherapeutist.

Within the last half century a most remarkable evolution, one may even say revolution, has occurred in methods of dealing with the sick. The marvellous light thrown upon life processes, normal and pathological, by the revelations of physiology, bacteriology, and physiological chemistry, and the exposures of the fallacies of old therapeutic notions and the inertness or inadequacy of the great majority of drugs made by experimental pharmacology, and clinical observation checked up by modern instruments of precision, have so completely transformed the practice of medicine that the war of the "pathies" ceased years ago for lack of anything of interest to war about. Everybody knows, nowadays, that sick people are not cured by either big pills or little pills, but by the vis medicatrix naturae. As Dietl, a famous disciple of the great Rokitanski, declared, "Nature creates and maintains, therefore, she must be able to heal." And, as the late Dr. Winternitz, the father of scientific hydrotherapy, insisted, *Read at the evening session, Tuesday, October 30, of the twenty-fifth annual meeting of the American Hospital Association, held at Mil-waukee.

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"It is the blood that heals." The ancients knew this, and recognized that "The blood is the life;" but the great cloud of ignorance and superstition which submerged the world during the "Dark Ages" obscured this vitally important truth which modern physiology has brought out again and made to shine with greater lustre than ever. We have a very few specific drugs which cure by destroying parasites of some sort; but, with very few exceptions, the agents which are really potent in combating diseases are those which modify the blood or the blood supply, and these agents are almost wholly those which belong to the domain of physiotherapy, which includes all therapeutic measures other than drugs and psychic influences.

The modern general hospital is supposed to be a place where the sick may receive the benefit of every curative method and resource recognized by scientific medicine, and there seems to be no good reason why the modern general hospital should not realize this ideal in its equipment and the personnel of its staff of physicians and nurses.

If the question of expense is raised, the objection is easily answered by the fact that for a very efficient application of physiotherapy very little expensive or special equipment is actually required. The great essentials of physiotherapy, in addition to diet, are air and water, at different temperatures, light and exercise, active and passive. These most potent of all means of modifying metabolism and nutrition may be applied in a thoroughly efficient manner and with most satisfactory results without the use of very expensive or elaborate apparatus. The most important part of a physiotherapeutic equipment is a thorough, theoretical knowledge of physiotherapy. With this, great results may be attained with little or no special equipment; without it, the most elaborate equipment is useless. Not so very long ago, I happened to visit a large hospital which possessed a most elaborate and up-todate physiotherapeutic outfit. The hydriatic equipment was particularly elaborate and expensive. On being introduced to the head nurse, I was at once beset with questions about hydrotherapy. Said the nurse, "Do tell us how to use hydrotherapy. The doctors send us down patients every day with a prescription for hydrotherapy, but they don't tell us what to do." The doctors were not to be greatly blamed, for does not the learned Osler say many times over in his great work on practice, "If the measures above indicated fail, try hydro-

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therapy." The teaching of physiotherapy in our medical schools is still so inadequate and inefficient that the student has no opportunity to become sufficiently familiar with the technic to be able to make an intelligible prescription. Although now recognized as the chief part of therapeutics, it receives the least attention. Very often the teachers are themselves little familiar with the subject. The late Professor Brieger, the eminent German chemist, who held his place on the faculty of the imperial medical school of Berlin as professor of physiotherapy, told me that when he got his appointment he went to Kneipp's Water Cure for three weeks to learn hydrotherapy. This neglect of physiological therapeutics by our medical schools is without doubt responsible for the existence of osteopathy, so-called chiropractic, and a dozen other medical cults.

Water, as a means of producing thermic impressions and thereby influencing the vasomotor nerves and centres, is the most potent as well as the most versatile of all curative agents. By its proper use, even with such simple means as a wet rag, it is possible to control almost at will the blood circulation of any vital organ, and thereby to produce therapeutic effects quite surprising to those who are not familiar with the results obtainable with this wonderful agent when skilfully applied.

A room or series of rooms fitted up with expensive appliances makes a fine showing in a hospital, and produces a great impression upon visitors and may be made of real and great service; but the thing really needed in the general hospital is such an intimate acquaintance with the resources of physiotherapy as will in large measure eliminate the use of hypnotic drugs to produce sleep, of medicines and mineral waters to stimulate delinquent colons, and even of drugs for relief of pain.

When I was a student at old Bellevue fifty years ago, I one day heard two of the internes discussing the treatment of delirium tremens, cases of which were very numerous at Bellevue in those days of cheap whiskey. The regulation treatment was confinement in a cell and opium and chloral in massive doses. One of the internes said, "I often find 'em dead in the morning." "Yes," said the other, "I slip one every now and then, but that's the only way to keep them quiet." A year or two later, when I encountered my first case of acute alcoholic mania, I wrapped the patient in a wet sheet to keep him in bed and discovered that the neutral pack not only kept him still, but sent him off to sleep.

In discussing a paper which I read some years ago before a very active medical society, the superintendent of a large state hospital for the insane, the late Doctor Edwards. stated that in recently comparing their present use of chloral and other hypnotic drugs with their practice twenty years before, they had found that with 2,000 patients they were now using less of such drugs in a year than they formerly used with 600 patients every week. He added, "If a patient has insomnia, we just put a wet rag on somewhere and he goes right off to sleep." The effective use of water to produce sleep is not quite so easy as that, but the neutral bath and allied measures are so remarkably efficient in producing sleep that the use of sleep-producing drugs is rapidly becoming obsolete in the leading hospitals for the insane in this country as well as in France and in other European countries where they have been long employed.

ANALGESIC EFFECTS OF HEAT.

The analgesic effects of heat are among the most remarkable of all therapeutic effects. Heat kills pain. Just how, nobody knows, as no one has yet explained the action of opium or of other pain-relieving drugs. Of course, heat is not a complete substitute for opiates, but it will relieve at least nine-tenths of all the pains for relief of which opiates are commonly given, and has the great advantage of being wholly free from the numerous dangers and disadvantages of opiates. Every hospital should be supplied with conveniences for quickly preparing fomentations, with thermophores and electric photophores, as well as hot-water bags and other efficient means of applying heat. These simple and inexpensive appliances are far more important than an elaborately appointed department filled with expensive apparatus.

Nevertheless, the physiotherapy department with specially trained persons in charge is just as essential for the complete equipment of a modern hospital as is an operating room, an examining room or a laboratory. In such a department should be found appliances for the efficient use of hydrotherapy, thermotherapy, phototherapy, mechano-therapy, electricity, corrective gymnastics, automatic exercise and indoor and outdoor gymnasiums. For many years I have made a close study of appliances adapted to physiotherapy and have tested every new apparatus that has become known to me and have selected out of a great number of more or less useful appliances those which have proven to be of real service. Chief among these I may mention the following, all of which are in use at the Battle Creek Sanitarium, most of them having been in practical use for many years.

HYDRIATIC APPARATUS.

The douche is useful, but by no means the most essential part of a hydrotherapy outfit, although so much emphasis has been given to douche apparatus in recent years that in the minds of many it seems to be regarded as the one thing needful for a complete equipment. Many of the newer hospitals are supplied with expensive douche appliances which are used scarcely more often than are the fire extinguishers. The fact is the douche is an appliance that requires more skill in its use and is less frequently called for in a general hospital than a large number of other much simpler and far less expensive appliances, such as sitz, leg, arm and foot baths, and full bath tubs adapted to the neutral bath. The simple shower and spray bath with a good thermostat will satisfactorily supply the needs of the ordinary hospital. The first douche apparatus ever used in a hospital consisted of a box with a perforated bottom which was supported over the patient while water was poured in. This mother of douches, used in a hospital in Edinburgh 200 years ago, though crude, was most efficient in combating fever.

So long as the idea prevails that an expensive douche apparatus is a whole hydrotherapeutic outfit, hydrotherapy will make little progress in hospital practice. The douche is exceedingly useful in certain classes of hospitals, particularly institutions for the insane and those that are especially devoted to nervous diseases and non-surgical or gastro-intestinal disorders. The investment required need not be great. A simple appliance which may be attached to a wall slab will accomplish everything that can be done with the most elaborate and expensive apparatus.

PHOTOTHERAPY AND AEROTHERAPY.

Light supplies not only heat, but other forms of radiant energy which are highly potent and vital stimulants. When light rays fall upon the skin the chemical rays act upon the superficial layers producing, when very intense or long continued, an erythema. The luminous rays, however, penetrate deeper. As they penetrate an opaque substance, like human flesh, they meet with resistance and are converted into the longer, infra-red or heat rays which penetrate still farther. The electric light is more than a complete substitute for sunlight for the reason that in passing through the upper atmosphere the shorter ultra-violet rays and the longer infra-red rays are almost entirely absorbed by oxygen, which is thereby converted into ozone.

The electric light in its various forms must be regarded as a very essential part of every hospital. By the use of this artificial light, all the benefits of sunshine may be obtained and at times and seasons when sunlight is not available.

A beam of light contains all the different forms of heat rays, luminous and non-luminous, from infra-red to the top of the gamut. This is clearly shown by the spectrum. However, it is to be remembered that when luminous rays enter the body, they are quickly converted into infra-red, so that all these rays in practical use become infra-red whether luminous or non-luminous.

Every general hospital should be liberally equipped with sun porches or an outdoor gymnasium for the warm season and sunrooms for use in cold weather. I have made use of the sun-bath extensively for more than forty years, and have found it invaluable not only as a general vital stimulant, but as a means of promoting the healing of indolent wounds.

It is doubtless true, as Rollier has observed, that all the benefits of sun-bathing are not to be attributed to the actinic rays or to the effects of light, but are in part, due to the thermic effects produced by contact with cool air. He finds, for example, that sun-baths are more efficient in the early part of the day, when the air is cool, than in the middle of the day, when the air has become heated. In the use of sun-baths in the outdoor gymnasium, I have, for many years, made use of the cool shower bath as a means of combating the depresing effects of excessive heat during hot weather. By alternating exposure to the sun's rays with short, cool baths, most powerful tonic effects may be produced.

Our long, cold season, nearly half a year, and the large proportion of cloudy days, greatly lessens the value of sunlight in practical therapeutics; but fortunately, all of the advantages of sunlight may be obtained by an efficient use of the electric light. For local effects, the photophore, in which the use of the incandescent lamp is a source of light and heat, and the arc light is most useful and efficient. Every hospital should be supplied with a number of these appliances which are now available in forms adapted to all sorts of medical and surgical cases in which the application of heat or light is desirable.

To obtain the general effects of light when sunlight is not available is a somewhat more difficult problem. By combining are lights with Cooper-Hewitt tubes and the quartz light, all of the effects of sunlight may be readily secured. In a cabinet which, for convenience, we will call "the sunlight bath," there are six are lights, two Cooper-Hewitt tubes, and one quartz lamp. By this combination, the effects of the most intense sunlight are obtainable. In fact it is even possible to produce in ten minutes a slight degree of erythema, if this is desirable.

ELECTROTHERAPY.

While less useful than light as a therapeutic means, electrotherapy is nevertheless, a most important feature of a physiotherapeutic hospital outfit. Unfortunately, electrotherapy has always been more or less in disrepute. This highly useful agent has been discredited by the extravagant claims made for it by socalled electrotherapeutists and by the attempt to make it a panacea, whereas its useful application is really limited to certain classes of patients. It is true that electricity is useful as a general tonic, but for this purpose cold water, cold air and sunshine are so much more potent and practical that its value is overshadowed.

The most important use of electricity in connection with a hospital, outside of its diagnostic uses, is as a means of passive exercise. Two purposes are served; first: the development of weak or paralyzed muscles; and second: stimulation of tissue change, or metabolism. There is a great demand for the use of electricity for both of these purposes in hospital practice. Improved muscular development is required not only in cases of paralysis, but in a great number of cases in which the muscles are weak because of disuse through sedentary life, bad posture, etc.

As a means of increasing metabolic activity, suitable applications of electricity may be advantageously made in a very large number of hospital cases. We are, I believe, prone to forget that the confinement of a patient in bed produces

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nutritive disturbances which ought to be combated by suitable measures. Modern metabolism studies are also showing that there is a very considerable number of persons whose metabolic rate is below normal and requires stimulation. For all these cases, electricity is a most valuable resource. The best form of electrical current for this purpose is the sinusoidal. I had the good fortune to discover the value of this current as a mode of passive exercise nearly forty years ago. I was carrying on a series of experiments with electrical currents from all available sources and happened upon a form of current which produced vigorous and painless muscular contractions. I saw at once the value of this current for automatically reducing muscular exercise and have made extensive use of it ever since. A few years later, D'Arsonval, of Paris, in experimenting with high frequency currents, discovered a form of current which produced painless extractions and which, on investigation, I found to be identical in form with the current of which I had made use. The current is known as the sinusoidal current because of its form. Its painlessness is due to the fact that in the faradic current the change of direction occurs at the point of highest intensity.

The most efficient forms of the sinusoidal current for influencing metabolism are the sinusoidal bath, by which the metabolic rate may be easily doubled without the slightest discomfort to the patient, and the automatic exercise chair, by which the metabolic rate may be increased to any degree desired—from 100 per cent. to 600 or 800 per cent.

Another electrical appliance of proven value is the diathermy, or thermo-penetration apparatus, a high tension apparatus which supplies the current which is practically identical with the so-called wireless current, but of much lower tension. In the passage of this current through the body, the electrical energy is converted into heat and thus by this means heat may be applied to any internal viscus with the same exactness as that with which heat may be applied by other means to the surface of the body. This agent is found exceedingly useful in making heat applications to deep-seated organs such as the lungs or heart and large nerve trunks and certain joints, and produces highly valuable results.

No general hospital should be regarded as properly equipped without these useful electrical appliances.

MECHANOTHERAPY.

Mechanotherapy, like electrotherapy, has been greatly discredited by the excessive claims made for it in the attempt of the partisans of this method to accomplish by mechanical means results which are much more efficiently obtained by hydrotherapy or electrotherapy. After careful study of all the various forms of apparatus which have been produced in this country and in Europe for use in mechanotherapy, and after an experience of more than forty years with this line of therapeutics, I am thoroughly confirmed in the opinion that certain results may be accomplished more efficiently by suitable mechanical appliances than by any other means and that at least a few of these appliances might be advantageously added to the equipment of the average general hospital.

Perhaps the most useful of these appliances are means for applying a kneading movement to various parts. By means of a simple device, the oscillo-manipulator, kneading movements may be applied to any part of the body and the movements may be graduated from the most gentle applications to the most vigorous and thorough-going. Applications of this sort are highly valuable for patients subjected to long confinement to bed as the result of traumatisms or after serious operations, in cases of paralysis and in the wasting of muscles which results from chronic joint disease. Mechanical kneading is also most useful in connection with the rest cure, in convalescing cases and in all cases in which it is desirable to promote local or general nutrition. Mechanical massage, as well as manual, has the advantage that it promotes anabolism, or constructive metabolism, without materially increasing catabolism, or destructive change. Exercise promotes constructive metabolism, but at the same time enormously increases destructive metabolism. Hence, in cases in which it is desirable to promote tissue-building and an increase of fat and blood, passive exercise and massage render invaluable service. The average patient cannot afford to pay for the services of a trained manipu-This opens a wide field for the mechanical manipulator. lator, which is in practical use for securing the general systemic effects of massage fully as thorough-going and efficient as is manual massage. Mechanical massage has the advantage that it may be applied by the patient himself or by an ordinary attendant and thus may be utilized in a great number of cases which might not be able to afford the expense of manual massage.

A large hospital should provide a variety of mechanical appliances for administering passive movements for the mobilization of the joints and appliances for promoting exercise, such as pulley weights, the riding horse, the stationary bicycle, rowing machines, etc. For the efficient use of exercise as a therapeutic measure, a suitable means should be provided for obtaining accurate information regarding the patient's muscular system. A thoroughly scientific method requires the testing of the strength of each of the larger groups of muscles and comparison of the results with normal standards. This is best done by making a graph, which will show at a glance the defective groups of muscles and the degree of deficiency in strength. This method, which has been in use at the Battle Creek Sanitarium for nearly forty years, was adopted many years ago by the government military schools at Annapolis and West Point. Every cadet who enters Annapolis is examined by this method and required to bring up the strength of all the weak muscles to the 100 per cent. line before he is allowed to spend any time watching the ball games and other competitive sports.

Attention must be given also to posture. This applies to bed patients as well as ambulant cases. The study of the outlines of the body are often highly suggestive of deeplyseated morbid conditions to which attention should be given. For example, a round back and a protruding abdomen always indicate a low-standing diaphragm. Since the pericardium is attached to the diaphragm, when the diaphragm is dragged down, the heart is dragged down with it, and with every heart-beat the heart muscle is compelled to do, in addition to its normal work, a large amount of unnecessary and unnatural work in lifting the diaphragm and the heavy viscera which are attached to its under surface. These patients with flat chests, round backs and prominent bellies, have no endurance when they are on their feet and quickly get out of breath when they undertake exercise of any sort because of the extra work required of the heart. These patients are also very likely to suffer from the strain upon the sacro-iliac and intervertebral articulations, especially of the lumbar region, which is the natural consequence of a position in sitting or lying which puts these joints under undue strains. These strains often give rise to severe backache, the cause of which is frequently not suspected. Hospital patients often suffer greatly from this cause. Such patients may be almost instantly relieved by simply propping up the hollow of the back with sandbags or cushions. The backs of seats and rolling chairs provided for convalescing patients in hospitals as well as the seats in ordinary use in homes, churches and theatres and elsewhere, almost invariably ignore the natural requirements of the contour of the body and affording no support for the lower part of the back, compel the feeble patient to crumple up in order to secure the support which his lack of strength requires.

The shadowgraph affords a convenient means for the study of the outlines of the body, and is an aid to diagnosis, and is especially useful as a means of demonstrating to the patient himself the necessity for observing correct posture in sitting and lying as well as in exercise and work.

The time allowed this paper is too brief to admit anything more than a very cursory review of the subject. As a matter of fact, from the writer's standpoint, physiotherapy is by far the greater part of therapy, hence methods and appliances for employing the various physical agents by which the body functions may be influenced should constitute the major part of the hospital equipment and organization. I see no reason why the general hospital should not provide its patients with the same advantages which are afforded by the up-to-date sanitarium.

PROPHYLACTIC PHYSIOTHERAPY PARAMOUNT.

In conclusion of this very incomplete paper, I will call attention to what may be termed prophylactic physiotherapy, which I consider as important as any, if not the most important of all. This consists in the systematic education of the patient while under treatment in right habits of living. The majority of patients who visit the general hospital are brought there directly or indirectly as the result of wrong habits of life. Most chronic ailments are the result of errors in eating, neglect of exercise and other infractions of the rules of health which, if continued, will bring the patient back or take him to some other hospital, and will ultimately prematurely end his life. While the medical and surgical care of the patient must, of course, be the first and principal aim of the hospital, the proper education of the patient during the period of his hospitalization, so that he may be so far as possible insured against the necessity of again seeking hospital care,

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should be made a regular part of the work. In general, patients are eager to learn what they may do to prevent a return of their troubles, and the patient's programme usually gives him ample time for receiving such instruction as may be of incalculable value to him. The opportunity is one which should not be neglected. Every general hospital ought to have associated with its physiotherapy department a health director capable of instructing patients in an entertaining and convincing way, so that when the sick man leaves the hospital he may carry home with him not only a body which has been improved by the treatment which he has received, but through the teaching and training which have been given him, a new set of habits through which he may not only maintain the improvement made, but may for a long time afterwards continue to improve in bodily fitness and efficiency. The hospital has a wonderful opportunity for service as an educational factor which should not be neglected. The social welfare service connected with some large hospitals is a beginning in this line which should be developed and expanded until health education and training are everywhere recognized as an essential feature of hospital organization and administration .---The Modern Hospital.

DIETETIC ITEMS OF INTEREST

The Quebec Dietetic Association met at Macdonald College, May 14th, 1924. Dr. Lynde, Professor of Physics at this school, spoke on "Electricity and its Uses in the Home." By demonstration as well as lecture he illustrated the principles underlying the production of power and heat for electrical appliances. An enthusiastic appreciation was expressed by all members. After the lecture the Association was entertained by Miss B. M. Philp and staff in the Practice House of the Household Science Department. Not even the pouring rain was sufficient to cloud the meeting.

Toledo food conveyors are now being used throughout the public wards of the Montreal General Hospital and the food service is second to none in the United States or Canada. Unfortunately the heavy duty on such equipment, although it cannot be obtained in Canada, has delayed its installation in many other places.

Miss Jean Crawford, who has been employed as Social Service Dietitian for the Montreal Diet Dispensary since

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March, 1923, has been forced to resign on account of ill health. Miss Crawford who is a graduate of Macdonald College, and had taken a pupil dietitian course at the Montreal General Hospital, has done splendid work in this field of dietetics.

Miss Ruth Park will relieve for the summer holidays at the Montreal General Hospital. Miss Park is a graduate of Toronto University, and received her pupil dietitian course at the Montreal General Hospital. In 1922 Miss Park conducted the dietary part of Dr. Banting's insulin clinic at the Toronto General Hospital.

In order to obtain important data the following questionnaire has been sent every member of the American Dietetic Association. Replies are coming in from hospitals all over Canada and the United States:

FOOD SERVICE IN HOSPITALS.

Name of hospital-

Location-

General, public or private— . Number of beds in hospital— Average number of patients— Number of dietitians in hospital: Dietitian in charge of department— Are pupil dietitians trained ?— Number of pupil dietitians— Kitchens in hospital; how many—

(1) Public ?--

(2) Private?-

(3) Diet kitchen ?---

(4) Metabolism kitchen ?---

(5) Other kitchens?—

Location of kitchens-

Number of cooks employed-

Number of people employed in each kitchen, exclusive of cooks—

Hours of employment for cooks-

Hours of employment for other kitchen employees-

Wages received by cooks or chefs-

Wages paid other kitchen workers-

How is food sent to floors or wards ?--

What interval elapses between time food leaves kitchen and its service ?---

Who serves foods for patients ?---

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Is residue of trays observed ?-By whom ?---What becomes of garbage ?----Are supplies sent to floors or wards from kitchen only ?----Are supplies also sent from stores daily ?-How many people are employed in stores and meat shop ?---Who buys foods ?-Are any foods bought by contract ?--What foods are bought by contract ?----Are foods bought wholesale, at restaurant prices, or on open Has the hospital its own bakery ?----How many bakers employed ?-How many baker's helpers employed ?----What salaries do bakers receive ?----Have you a night baker ?----What hours does he work ?-What salary does he receive ?----Food service for others than patients-How many dining-rooms in hospital ?---(1) Nurses ?--(4) Clerical staff?-(2) Doctors ?-(5) Employees, men ?-(3) Guest ?— (6) Employees, maids ?-(7) Others ?---Who has charge of these ?----Have you waitress service or cafeteria ?----How many meals served daily in each dining room ?--1. 2. 3. 4. 5. 6. How many people employed in each dining room and serving pantry ?--1. 2. 3. 4. , 5. 6. 7. What salary does head waitress receive ?----What do other waitresses receive? ----What does other dining-room help receive ?----What are hours of employment in dining-rooms ?-1. 2. 3. 4. 5. 6. 7. Do you use meal ticket service in any dining-room ?-Is there a meal charge in any dining-room ?---How much per meal ?-

News Item

The American Dietetic Association will hold its seventh Annual Convention at the New Ocean House, at Swampscott, Massachusetts, on October 13, 14, 15, and 16th. A splendid programme is being planned. Every phase of dietetics will receive recognition and discussion. Problems of administration, education, dieto-therapy, and social service will receive special attention. Ample time is being allowed for round table discussions. Men and women prominent in their professions have consented to speak to the Association on topics of interest to all members. Further information may be received by writing to the Executive Secretary, Miss Anna Boller, Box 71, Riverside, Illinois.

Book Reviews

Blood Pressure: Cause, Effect, and Remedy. By Lewellys

F. Barker, M.D., and Norman B. Cole, M.D. Toronto:

F. D. Goodchild & Co.

This book is meant for the laity and is written in a simple, untechnical language so that the wayfaring man or woman will readily grasp its meaning. Nowadays, such "stepping down" of scientific knowledge is a popular and praiseworthy procedure. It enables the ordinary man or woman to make pertinent and intelligent enquiries of their physician. The general practitioner also, will find it worth his while to read this volume. It deals with normal B.P., the factors in its maintenance, the causes which vary it, its varieties, its relations to arterio-sclerosis, the heart, kidney and brain, and what to do if it is too high or too low. All of us who know "Lew," will know how lu-(no pun) cid, and well written it is.

Ethical Principles for the Character of a Nurse, by James M. Brogan, S.J., President of Gonzaga University, 1913-1920. (third impression.) The Bruce Publishing Company, Milwaukee, Wis. Price, \$1.35.

This book should have a wide appeal. It will be used much in Catholic hospitals where so much stress is laid on matters spiritual. Father Moulinier, the great apostle of Hospital

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Standardization, says in a foreword that this is the first treatise he has found on the psychology of character. The book is interestingly written, and timely.

The Normal Child: Its Care and Feeding. By Alan Brown, M.B., Physician-in-chief to the Hospital for Sick Children, Toronto; Associate Professor of Medicine in charge of Pediatrics, University of Toronto. Toronto: F. D. Goodchild & Co. Price, \$1.50.

Discusses the nursery and nursemaid; the new-born baby; clothing of infants and older children; bathing; teething and care of the teeth; exercise; the cry; sleep; airing; growth; feeding-breast and mixed; wet-nursing; weaning; artificial feeding; stools; special milk preparation; proprietary foods; feeding after the first year. Food groups are discussed and recipes aplenty given. A chapter is devoted to diet in illness; another to travelling with a baby. Sleep, rest, exercise and play during later childhood are discussed. Discipline and education occupy one chapter, and habits of infants and children another. The final chapter is devoted to the common ailments of children. While this book is meant for "the mother, the nurse and the student of the normal child," it will repay many doctors and fathers and teachers to read it.

Dosage and Solutions, by C. E. Garnsey, Washington Sanitarium and Hospital Training School for Nurses Washington, D.C. Philadelphia and London: The W. B. Saunders Company. Canadian agents: The J. F. Hartz Co. Limited, Toronto. Price, cloth, \$1.25 net.

The author emphasizes a few major points-more valuable to a nurse than an effort to cram in a lot of confusing details. Every procedure is explained very simply-only one rule being given-a wise thing.

Medicine for Nurses and Other Public Health Workers, by George Howard Hoxie, M.D., F.A.C.B. Illustrated. Philadelphia and London: The W. B. Saunders Company. Canadian agents: The J. F. Hartz Co. Ltd., Toronto.

The re-writing of the author's former book: "A Manual of Medicine for Nurses," has amply repaid the labor involved, and is a praiseworthy effort to conform to the requirements of standardized teaching of nurses. It contains up-to-date material and the emphasis placed on preventive work makes it valuable for those engaged in, or seeking to enter, the fields of public health work. This book would be improved by additional illustrations.

A Manual of Nursing Procedures, by E. Priscilla Reid, R.N.;
Mabel E. Hoffmann, R.N.; Hazel L. Jennings, R.N.; and Lillian A. Read, R.N. Illustrated. Philadelphia and London: The W. B. Saunders Company. Canadian agents: The J. F. Hartz Co. Limited, Toronto. Price, \$1.75 net.

This book should be valuable for teaching purposes, and as a ready reference for either a student-nurse, or the graduate in private practice. The order and arrangement, as well as the entire make-up of the book is excellent. The information is readily available, and that given is concise with brief but clear explanations of all subject matter, so that the most junior nurse may grasp the meaning without difficulty. It is unusually well illustrated and seems to strike a happy medium between the ordinary text-book on nursing procedure, and those which may be called pocket editions.

Food for the Diabetic. What to Eat and How to Calculate it with Common Household Measures, by Mary Pascoe Huddleson, Consulting Dietitian. With an introduction by Nellis Barnes Foster, M.D., Assistant Professor of Medicine at Cornell University Medical School, and Associate Physician, New York Hospital. The Macmillan Company, Toronto and New York, 1923. Price \$1.50.

The increased interest in problems of metabolism and dietetics stimulated by the study of diabetes and especially since the introduction of the Allen treatment, and the use of insulin, has made it necessary for practitioners to have a practical knowledge of feeding by calories, food values, and the selection of a properly balanced diet to meet the basal requirements. This little book of 75 pages will be helpful to those wishing a simple and reliable introduction to the subject. The chapter on Diabetic Recipes will prove of much assistance in preparing an attractive diet.

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DOMINION BATTLESHIP LINOLEUM

As requirements become more finely developed it is necessary to pay greater attention to the selection of hospital flooring. "Dominion Battleship Linoleum" is one of the most durable floor coverings known. For hospitals, sanatoria and such buildings, where severe tests require floors of first quality, it is highly desirable and most satisfactory in service. It eliminates strain because of the soft, resilient walking surface it affords; it promotes comfort because of this restful treading surface; it ensures permanence and becomes a seamless, creviceless floor when properly laid with waterproof cement. Its construction makes it distinctly germicidal—an important consideration in a building housing the sick.

The grades in which "Dominion Battleship Linoleum" are made permit of its selection for every type of building, depending upon the requirements. Grade "AAA" is six millimetres thick, grade "AA" 4.50 millimetres, and grade "A" 3.60 millimetres. Length of rolls, twenty-five yards in each grade. Two other grades are available as Plain Linoleum, "B" three millimetres thick, and "D" 2.05 millimetres. In addition to being made in two-yard widths, "A" and "D" grades are to be had four yards wide.

Four shades are available: plain brown, green, terra cotta and grey. Various grades are available to suit every requirement, ranging from the British Admiralty standard six millimetres (one-quarter inches) to a lighter grade of about two millimetres. To obtain satisfactory results the manufacturers recommend the engaging of expert laying service. This is supplied by many floor-covering merchants, who, for a nominal charge, lay this covering according to detailed specifications, thereby ensuring permanent, satisfactory results.

CATARACT EXTRACTIONS PERFORMED BY PROF. JOSEF MELLER OF VIENNA, 1919-1921.

Two hundred and forty-nine cataract extraction operations performed by Professor Meller are analyzed by Hans Barkan, San Francisco (*Journal A.M.A.*, Dec. 22, 1923). Whenever possible, the method of Hess (performed previous to Hess by Chandler of Boston, and Pfluger of Bern) was used. The technic of operation is described and the results are presented in a series of tables.

INSULIN IN DIABETIC COMA, COMPLICATING PREGNANCY.

William S. Reveno, Detroit (*Journal A.M.A.*, Dec. 22, 1923), reports a case of diabetes in which a well advanced pregnancy had to be reckoned with along with the coma. Recovery followed on the use of insulin. However, parturition marked the turning point in the progress of this case to a successful termination.

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"Canada's Most Famous Dessert"



Institutional Size makes one gallon This is the Big Brother of the well known Jell-O package. The big box holds a larger quantity of the same Jell-O that all good housekeepers use and all families enjoy. Hotels, restaurants, hospitals, schools, camps and institutions will find it convenient and economical to use this Institutional Size, to serve their patrons with Jell-O - - "Canada's Most Famous Dessert."



Domestic Size makes one pint

JELL-O



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THE FOOD VALUE OF GELATINE.

The gelatine used in the preparation of Jell-O has the golden color and the clean texture of cornneal. It is as pure and clean a product as the choicest chops or steaks that ever came out of a modern packing house. It is produced under the same perfected sanitary conditions, in workrooms that are kept as clean as kitchens. The stock is kept sweet throughout its preparation.

Gelatine, like the other principal ingredients of Jell-O, has marked food values. It is known in dieteties as a "protein saver," which means, in substance, that it substitutes effectively for proteins. It has long been in general use in both jellies and soups. In his book on the chemistry and technology of gelatine, Dr. Robert Herman Bogue declares that there is no question of the value of gelatine in the dietary. He states: "Gelatine is a true food, a preserver of nitrogen, is easily digested, and is readily burned in the production of energy." He cites an experiment that "makes it appear certain that gelatine is capable of functioning as a protective colloid, in conjunction with lactalbumin, in preventing coagulation of milk during digestion."

C. Herter, in his book on "Infantilism from Chronic Intestinal Infection," finds the addition of gelatine to the milk in cases of serious malnutrition to be highly beneficial and to result in a much greater absorption of the milk fed.

Dr. Gouraud, a noted French authority, formerly chief of the laboratory of the Medical Faculty of Paris, states in his notable work, "What Shall I Eat? A Manual of Rational Feeding": "Gelatine is a most useful agent for the human economy, and, we think, ordinarily too much neglected. It possesses very valuable properties. Being totally absorbed by the intestines, it exercises a marked influence on the economy of metabolism. Gelatinous foods are particularly recommended to those who get easily overheated, or who must build up their systems, emaciated, convalescent, or jaded persons."

PAPER HOSPITAL SUPPLIES

The Stone & Forsyth Co. of Boston Mass., U.S.A., who manufacture Paper Specialties and Paper Hospital Supplies, have just put on the market a new Sputum Cup Refill which will be appreciated by all sanatoriums and hospitals. It is not only made of waterproof paper, but it has a double coating of waterproofing instead of paraffin. A coating of paraffin very often streaks and causes leaky cups. The improved coated cup will stand up indefinitely and is guaranteed not to leak. The Stone & Forsyth Co. are also headquarters for Wood Tongue Depressors, Paper Napkins, Towels, Drinking Cups, and all Paper Supplies for hospitals and sanatoriums. Samples and prices will be furnished on request or through local supply houses.

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CRANE'S NEW "FIFTH AVENUE" COMBINATION FIXTURE FOR HOSPITALS SHOWN AS A REGULAR CLOSET AND AS A BEDPAN CLEANSING HOPPER

SETTING NEW STANDARDS OF CONVENIENCE

Saving steps for nurses, this double-use fixture serves all the time in a patient's private room. During observation and convalescence it is a regular closet. Simply removing the seat converts it into a convenient clinic sink. The bowl is extra large. Lugs are provided to hold a bedpan in place while it is being

cleansed by the auxiliary jet. Designed for the great new Fifth Avenue Hospital in New York, this dependable Crane fixture answers the demands for economy of space so important in every hospital. It is only one of many Crane fixtures that are setting new standards of convenience and economy.



A very unusual case where City Dairy Certified Milk more than justified its reputation was recently reported to us by the head of a family who obtained a supply for a delicate baby just before leaving for Victoria, B.C. last summer.

The milk was the baby's only article of diet for five whole days. The milk kept in perfect condition all the way—the last day's being as good as the first.

The baby not only stood the journey, but thrived heartily on the milk.

LEFT SUPERIOR CERVICAL SYMPATHECTOMY UNDER LOCAL ANESTHESIA IN ANGINA PECTORIS.

In the case reported on by Jay Harvey Bacon, Peoria, Ill. (Journal A.M.A., Dec. 22, 1923), there has been effected a complete relief from all severe symptoms. The results have justified the means used in this case, and Bacon regards the operation as a justifiable procedure in those severe cases of angina pectoris that do not respond to rest and diet and the administration of nitrites. The incision over the anterior border of the sternocleidomastoid muscle gives a quick easy approach, and it may be safely attempted under local anesthesia when the condition of the patient will not justify the use of a general anesthesia.

MODERN AIDS TO CATARACT EXTRACTIONS.

Paralyzing the orbicularis by the injection of procain before operating, in the opinion of George S. Derby, Boston (Journal A.M.A., Dec. 22, 1923), constitutes one of the greatest advances in the technic of cataract extraction that has been developed in recent times. He analyzes the last 100 cases of cataract extraction done in his service. Seventy-two of these were done by himself. The results indicate that one can operate by this method in the ordinary case of cataract extraction with much greater security, while in the difficult case the chances of ultimate success are much greater. Dislocated lenses may be removed with a nominal loss of viereous, or with none at all.

AN EXPERIMENTAL STUDY OF MULTIPLE SCLEROSIS.

The alleged spirochetal origin of disseminated sclerosis was studied by Joseph Collins and Hideyo Noguchi, New York (*Journal A.M.A.*, Dec. 22, 1923), in eight cases. The negative results obtained indicate that the demonstration of *Spirocheta argentinesis* and the experimental reproduction of multiple sclerosis in guinea-pigs and rabbits are difficult.

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The CHASE HOSPITAL DOLL is over five feet tall, made of finely woven stockinet. Is durable, waterproof and sanitary. It has copper reservoir which has three tubes leading into it, corresponding in location and size to the urethral, vaginal and rectal passages.

Superintendents now using the adult size, as illustrated above, will be glad to know that we make several small models corresponding to a two-month, fourmonth, one-year and four-year-old baby.

Things That Others Teach

More things can be taught by **The** CHASE HOSPITAL DOLL and **The** CHASE HOSPITAL BABY than by the use of the human subject. Their physical formation many appurtenances are such, that the hospitals throughout this country and abroad who use them, find that they need put no restriction upon demonstration and practice. With **The** CHASE HOSPITAL DOLL and **The** CHASE HOSPITAL BABY, the theory of teaching is converted into the practical knowledge and manual dexterity obtainable only by actual work.

Among the things being taught daily throughout the world by the use of these manikins in Hospitals, Nurses' Training Schools, Home Nursing Classes, Baby Clinics, Mothers' Classes and by Visiting Nurses and Baby-Welfare Workers are the proper application of all kinds of bandages, trusses, binders, slings, fracture appliances, packs. The internal water-tight reservoir permits the giving of instruction in douching, administering enemata, catheterization, and the application of dressings, and the examination and probing of the ear and nose cavities. They are used to demonstrate positions, how to prepare the patient for operations and to care for the patient in etherization. They permit instruction in bathing, bed-making, and the feeding of the patient.

Let us send you our latest catalogue which will tell you how **The** CHASE HOSPITAL DOLL and **The** CHASE HOSPITAL BABY are made and exactly how you can use them.

The CHASE HOSPITAL DOLL M. J. CHASE 24 Park Place PAWTUCKET, R.I.



SAY "PHILLIPS" to your druggist, or you may not get the original Milk of Magnesia prescribed by physicians for 50 years. <u>Refuse imitations of genuine</u> "Phillips"

Each large 50-cent bottle contains full directions and uses.



This is the genuine Antiphlogistine Over 100,000 physicians prescribe it continually

What it is. Antiphlogistine is the most scientific, sanitary poultice known. It is composed of chemically pure glycerine, compounds of iodin (representing a small percentage of elementary iodin) minute quantities of boric and salicylic acids and the oils of peppermint, gaultheria, and eucalyptus, in a silicate of aluminum base.

Indications. Antiphlogistine is indicated in all conditions in which inflammation and congestion are present, from a furuncle to pneumonia. It offers the best known method for the prolonged application of moist heat. By the physical property of Osmosis and its ability to stimulate the cutaneous reflexes, Antiphlogistine assists in maintaining the blood and lymph circulation in the affected part, and hastens the elimination of toxins.

Its Action is graphically explained in the charts at the bottom of this advertisement.

The genuine Antiphlogistine may be relied upon in the treatment of any condition in which inflammation and congestion play a part.

The genuine Antiphlogistine, as scientifically compounded for 30 years by the Denver Chemical Manufacturing Company is the world's most widely used ethical proprietary preparation.

Let us send you literature covering all conditions in which Antiphlogistine is indicated.

The Denver Chemical Mfg. Company New York, U. S. A. Laboratories: London, Sydney, Berlin, Paris, Buenos Aires, Barcelona, Montreal, Mexico City







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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