and he also produced thyroid enlargement by the subcutaneous injection of rat feces. These experiments are quoted from Julius Bauer.³

We may interpret these quotations that intestinal abnormalities, though long recognized as a consequence of hyperthyroidism, may also be a cause, even if we limit ourselves to the conception that a live microbic agent is necessary to bring about this effect.

I wish to report three cases in which a chronic colitis of ten, eighteen and twenty years' standing had preceded the symptoms of hyperthyroidism. Two of these patients had been in Carlsbad for the relief of their colitis and one had been operated on, a partial thyroidectomy having been performed with only very transient relief of the symptoms. Naturally it would be desirable if we could find a method of determining when and how a colitis or enteritis is the cause and when it is the result of hyperthyroidism. Unfortunately, we are still lacking biologic and chemical tests for ascertaining the relation of these two states. I had personally hoped for such a test from the research of Dr. Reid Hunt, working in the Department of Pharmacology of the United States Public Health Department, but Dr. Hunt's acetoneitril reaction has not proven of diagnostic help. I quote his own words from a letter to me:

I do not think that the acetoneitril reaction has at present any value for purposes of diagnosis; it does not seem to be constantly obtained even in marked cases of hyperthyroidism. I hope, however, it contains the germ of a method which may be developed into one of use.

Perhaps as important a conclusion as any can be deduced from the fact that treatment directed to the intestine is more efficacious than treatment by thyroidin, antithyroidin, or by Beebe's antithyroid serum, and in these specific cases even more effective than operation on the thyroid. When the original causative process is in the intestine, particularly in the colon, there is no treatment like lavage of the colon with irrigations of 1 per cent. solutions of ichthyol. As much as 1 liter may be used in persons having a large colon and half a liter in persons with a small colon. I have also found that the *Bacillus bulgaricus* in pure liquid cultures administered for a long time reduces the tremor, as well as the headaches and insomnia.

I hope to furnish a more complete report when the cases which I still have under observation are more carefully studied. Treatments of various kinds had been administered in all three of my cases. One patient had gone through a rest-cure of ten weeks with electric, dietetic and medicinal applications. Another had been in a sanatorium for two months and had taken bromid of quinin and ergot for six weeks, with varying effects. Both of these had taken antithyroidin, but never were free from headaches, insomnia, tremors and tachycardia except when at perfect rest. Whenever they resumed their duties their symptoms returned. I kept them in bed three weeks, also, but on a meat free diet and colon irrigation and symptoms gradually abated. One patient at the date of this writing has been free from headaches, tremors, and insomnia for six months, though at times he still experiences tachycardia if he exerts himself in warm weather. A second patient has had no tachycardia that she knows of for a year, sleeps well and appears normal, excepting an occasional attack of diarrhea, which has been traceable to errors of diet. The third patient is still under observation, but is progress-

ing so satisfactorily that, although he is a busy physician, he has had only one attack of tachycardia in nine months while attending to his professional and scientific work.

		Average Pulse
Case 1.	Before treatment	120
	Last six months.....	78
Case 2.	Before treatment	106
	After one year.....	80
Case 3.	Before treatment	100
	Last four months.....	74

I still advise continuance of cool needle-spray douches, strict diet, twelve hours' rest a day and one colon irrigation every six to ten days in these patients. One patient, however, has not resumed irrigation of the colon for five months and has remained sufficiently well to attend to his work. When we remember how unpromising purely internal and physical treatment of the thyreoses has been, these results of this special therapy are sufficiently favorable to warrant a continuance of it in the special types of thyreoses in which it appears indicated.

Further studies will be made to throw light on the ideas held by McCarrison, von Noorden and Sasaki, namely, to determine whether a specific microbic inhabitant of the colon is either directly or indirectly the cause of this special type of thyreoses. The chemical and bacteriologic character in all of the evacuations of these cases—I mean the study of the feces—will be reported in a future communication. But I may premise my future report by stating that no specific bacterium or protozoon has been discovered by us that enabled us to reproduce successfully the Basedowoid symptoms and signs experimentally on animals.

Read and Charles Streets.

EFFICIENCY IN NURSING *

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This title is intended to describe the much-neglected field of the economic side of ward nursing, especially in the larger hospitals. Recent magazines are filled with articles discussing "efficiency" in laying bricks or handling tools, and "get-together" principles are the order of the day, but one looks in vain for any serious discussion of the importance of efficiency in the nurse's routine or any "getting together" between the architect who plans the clothes closets, pantries and other ward accessories and the nurses who have to walk endless miles between them in the course of their routine work. Mr. Taylor has shown us how many unnecessary motions the bricklayer makes—how often he bends his back and moves his arms to lay a single brick. Does any one know how many unnecessary steps the ward nurse takes or how often she bends her back or lifts heavy weights? What we do know is how tired and worn she gets when the service is heavy, and how many hospitals, from various causes, have inadequate nursing service, whereas a little intelligent direction would save enough energy in the aggregate to amount to the services of several additional nurses.

Having for some time had opportunity to observe these problems in several large hospitals, both municipal

3. Bauer, Julius: Fortschritte in der Klinik der Schilddrüsenerkrankungen, Med. Klin., 1913, No. 5, p. 146.

* Read in the Section on Hospitals of the American Medical Association, at the Sixty-Fourth Annual Session held at Minneapolis, June, 1913.

and privately endowed institutions, I finally began to gather statistics. In stating them I shall purposely omit names, in order to avoid the implication of any personal reflection. As I have been unable to find reference to any such facts elsewhere, they will be given in some detail.

I first tried having the nurses wear pedometers in several hospitals. In one I found that the day nurse walked seven and one-half miles a day, in others an average of five and one-half miles. This, in addition to all the stooping and lifting the nurse has to do, besides carrying heavy weights, involves an excessive expenditure of foot pounds of energy. In one hospital in which the wards are so long that the furthest bed is 120 feet distant from the ward kitchen tables, it was the custom to carry the food trays separately to and from each bed three times a day. When all patients were bedridden, as often happened in the twenty-six beds, it was a matter of simple addition to show that some one, usually a nurse, had to walk two miles per ward each day merely to serve meals! The very heavy wooden trays were found to weigh 8 pounds each, and when loaded with heavy ward crockery and with food and drink each tray weighed 15 pounds. Some one, therefore, in each ward had to haul a considerable weight two miles. An additional consideration was the minor factor of so much parading up and down a ward where quiet should be an essential in the treatment of the very ill. I suggested obtaining wheel trucks adapted to carry a dozen or more trays at a trip. I was met with the objection that "the food would reach the patients cold." At this I was surprised, as such trucks are in use in some places, although many large hospitals are without them, partly, no doubt, because no one ever suggested to the architect that he provide space for them when not in use. Experimentally, therefore, I took a common wheel stretcher, placed eight trays on it and, watch in hand, compared the time of delivery with the serving of a like number of trips individually. The entire time consumed in serving eight patients and returning to the kitchen was only two minutes with the truck and ten minutes without. This disposed of the cold-food theory. The distance traveled was 74 feet as compared with 240 feet. Since that time trucks have been used and the comment which reached me from a ward maid, who in this case assisted in the meal service, was: "Bless the man that invented thim thrucks—sure the corns is all gone off me hands since." The wooden trays had absurdly high backs, so I had two pounds of wood sawed off from each tray.

The bed screens weighed 31 pounds, and three were required to surround a bed. In accordance with the deep-rooted objection common to many training-school superintendents to accumulating anything in the wards intended to promote the true comfort of the patients, these screens were stacked in the hall when not in use. If a man in the furthest bed had to use a bed-pan, some one had to haul a weight of 93 pounds to and from him and then, of course, carry the bed-pan to and fro, thus walking in all about 480 feet. After some insistence I succeeded in having some of the screens left at the distant end of the ward, where they would be reasonably at hand when needed.

In the books on physiology and therapeutics it is taught that water is a good diuretic and promotes activity of secretions, lessening constipation, and some of the more thoughtful of us advise patients to drink it between meals! How many hospitals have drinking water at hand in the wards? In one hospital I found

that a few water-coolers in use in July and August were all stowed away by the nurses for the winter in a store-room in the attic because the Powers that Be thought that they encumbered the ward and, besides, the poor thirsty patients sometimes spilled a little water on the floor! Of course a thirsty man may call a nurse to bring him a glass of water when she is not too busy, but if she has to walk a block or two to get it, she is not likely to do it very often. To show that this is no exaggeration, I went into a tuberculosis ward where the faucet and the pantry and the patients were all in widely separated localities. Here the tumbler had to be taken to the faucet for disinfection and then replaced on a very remote pantry shelf. I asked a nurse to make believe a patient was thirsty and get him a drink. I followed her around, pacing the distance traveled, and she walked 364 feet. At this institution the trustees finally ordered water-coolers in each ward and an individual tumbler to be kept accessible for each patient. It is noteworthy that such suggestions never come from the training-schools.

There is usually a single table at one end of a long ward to which the nurse periodically carries the bedside note-blanks to be written up several times a day. How many feet of useless tramping would be saved by having a second table in the center or opposite end of the ward! The patients' bedside tables are all placed on the same side of the bed, regardless of the fact that one may have hemiplegia and be unable to reach the table with the unparalyzed arm.

There is a very good municipal lodging-house for tramps in New York City. In most large hospitals the medical wards are precisely like the dormitories of this lodging-house. There is a bed, a small table, and a more or less (usually more) uncomfortable chair for each person; nothing else is kept in the ward or within easy access to make a patient *comfortable* in bed. There are no cranes at the head of the bed for a heavy patient, or a stiff-jointed one to pull himself up by, or for a heavy, fat patient to lift himself easily on to a bed-pan. Inquiry usually shows that if there are any in the hospital "they are over on the surgical side." The nurses (or rather their principals), do not like them because they detract from the symmetry of the ward. There may be a few back-rests, but the best kind, which collapse when not in use and are permanently fixed to the head of the bed, are seldom found. In one hospital I discovered that portable rests were stored in a remote closet so far away that the nurses seldom had time to get them. I insisted on having them hung on hooks behind the beds. When I left the rests did also! Often a convalescent is able to sit up only long enough to eat a meal, which he does in comfort with a back-rest, but what nurse has time at the meal hour to walk a block and bring in a heavy rest to be used only a few minutes and then take it back? How much simpler to set the dinner tray flat on the patient's stomach and let him try to eat lying flat and getting more and more tired from the weight (for not all trays have legs and, when they do, they are usually too short)! If one's appetite is poor, discomfort while eating certainly does not improve it.

How many medical wards have cradles to take the weight of the bed-clothing off from swollen, rheumatic leg-joints? Ask the nurse, who says she "has heard of one in the building but it must be over on the surgical side." Her rule is to strap the bed-clothes so tight over the feet that they cannot slip, and the patient, in consequence, enjoys a more or less painful talipes equino-

valgus. I produced a decided sensation in one hospital. A 300-pound woman with nephritis, incontinence, bed-sores and high tension came into my wards. When lying on her back she was 28 inches across at the hips and she lay on a 32-inch-wide bed. She could not turn without landing on the floor. She needed to be turned for enemas, to have her sores dressed, and to be cleaned after incontinence. She needed hot packs. In this hospital of 1,000 beds there was not *one* for an unusually obese patient or an unusually tall one. I sent in a requisition for a 48-inch bed. A hurry call went to a department store, and the bed arrived, but was so low that the nurses were breaking their own backs in trying to relieve the patient. So we propped it up on shock blocks and the patient was finally able to turn herself without risk of breaking her bones by landing on the floor. This apparently simple innovation was regarded as so remarkable that nurses came from neighboring wards to see it!

Such an arrangement as a foot-rest to keep a patient from slipping to the foot of the bed, or to brace against while sitting in bed, is so serious a departure from training-school routine orders as to the "looks" of the bed, that, although I have ventured to hint of it, I have lacked the moral courage to insist on it!

There are many patients who cannot use bed-pans with satisfactory results. The very obese, for example, cannot. Yet very few wards are supplied with the convenient portable commodes which are mounted on casters; and when they are I find the nurses, for some reason, very reluctant to use them, although their use requires no more work and no more screens than that of bed-pans.

There are many patients who are old, feeble, or mentally dull, or mildly delirious, who in turning in the narrow hospital bed may land on the floor, unless protected. All they need is a couple of boards at the sides of the bed, fastened by tying them through holes bored in the ends. But the nurses find it easier to fasten draw-sheets over them. This method restricts freedom of motion and irritates, and I have occasionally seen a victim so tightly fastened by a sheet drawn across the chest as to have serious impairment of breathing. I do not, of course, refer to the actively delirious who attempt to get out of bed unless restrained.

All these appliances require a little thought for their use, and my experience is that unless they are kept within convenient reach they are never used, yet they add enormously to the comfort and welfare of the patient in bed. The architect usually has never thought of them and makes no provision for space in which to keep them when not in use.

There are many other details concerning efficiency, as, for instance, lack of system in the method of distributing the various things for the morning toilet, distributing medicines, etc. There should be more ward tables than are generally found. They save many steps and promote efficiency of service. The visitor has nowhere temporarily to lay a hat or heavy coat, unless he puts it on the patient's bed or on the floor. Convalescent patients need access to a table on which to lay a book or a checkerboard, if they are ever permitted anything to divert their minds from their own or their neighbor's ailments.

I do not think these suggestions unreasonable, nor do these appliances for the comfort of patients necessarily detract from the appearance of neatness of a ward, yet the modern training-school attitude is so increasingly

pedagogic and so decreasingly humanitarian that I am unable to recall a single suggestion originating with the officers of a school designed to promote the comfort of patients in bed, and I know of more than one school in which nurses are reprimanded for following their natural impulse to favor the individual. I have sometimes doubled a pillow temporarily to ease the position of a dyspneic patient, the nurse telling me she did not dare to do it herself. I admit that in general the window-shades should be kept on the same level, but if a patient has conjunctivitis, photophobia and a severe headache from facing a glare of light, and the nurse dares to pull down the shade opposite, she is liable to severe reprimand. Yet in private practice, if she refused to regard the comfort of the patient in such matters, she would quickly be superseded. Lectures on bacteriology, urinalysis, voice culture and the functions of the ductless glands loom large in the up-to-date training-school curriculum, but the gentle art of making the ward patient *comfortable* in bed, is not only unpracticed but actively discouraged in many instances.

To return to the problems of nursing efficiency. Physicians themselves are often lacking in its consideration. On "rounds" nurses are kept waiting while learned bedside discussions are held over polymorphonucleosis or complement deviations, when the service is heavy, and they ought to be serving a glass of water or easing an aching limb. The doctor's routine often calls for the recording of pulse, temperature and respiration data every three hours of every patient in the ward, although perhaps not half of them require it more than two or three times a day, and some few may not require it at all. This is notably the case on the surgical side. Now three minutes per patient to take these observations, including disinfection of thermometers and writing down the three records, is a minimum time allowance if any approach to accuracy is to be expected. In a ward of twenty-five patients, four observations a day at three minutes each, requires 300 minutes or five hours. But no nurse spends this time over such work and it would require her to neglect urgent matters if she did. Is it not better to order fewer records and have them reasonably accurate?

One great difficulty in relation to the doctor's efficiency arises from the almost purely American custom of rotating services. Whatever may be the merits of this question, which cannot be discussed in this paper, every service should have its administrative director, that is, one physician or surgeon who is continuously responsible for securing uniformity and continuity in the matters under discussion. If back-rests and cranes and food-trucks and commodes and foot-rests and leg-cradles and similar appliances are admittedly useful adjuncts to treatment and comfort of patients, they should not be brought into requisition for two or three months while Dr. Jones is on duty and then hustled into oblivion the moment Dr. Smith succeeds him, who is not regarded by the school authorities as a simple-minded crank, always trying to make patients comfortable instead of giving them an excess of pills and potions.

I have heard certain extremists among those seeking to regulate the training of nurses advocate an eight-hour system of ward work, although I have heard no definite statements as to where the additional funds were to come from, which such a system would entail, or how the additional housing required could be obtained. Nor have I heard any facts presented as to the health of

women as affected by their hospital course of training. Such facts, indeed, I find are not easily obtainable from training-school records. In one large hospital, however, where the work is so arduous that the health statistics of the nurses may be regarded as showing the extreme to which their energies may be taxed, I obtained the following data:

Total number of nurses in the school—119.
(All of these nurses were ill for at least one day.)
Total number of working days in 1912—41,650.
Total days of illness—583.
Percentage of days of illness—1.5.

Among the illnesses were eight cases of scarlet fever, seven of diphtheria, three of measles, one of typhoid fever and three of German measles, which collectively account for 433 days of the 583. As these infections were not, strictly speaking, due to overwork, it is fair to deduct the nineteen nurses having acute infections from the total of 119. This leaves 100 nurses with only 150 days of illness, or an average of 1.5 days of illness per nurse for the entire year. If thus appears that the average is extremely low, and compares very favorably with similar statistics of any large group of young working women, as, for example, factory employees, although the working hours of the nurse were between ten and twelve, as compared with the eight or nine of the factory employee.

In conclusion, I would make an earnest plea for the study of greater efficiency in nursing in order to conserve the nursing force which we have in any hospital, and for the greater use of common-sense appliances for promoting the comfort of patients in bed.

If the nursing system of to-day is being overweighted with theory and pedagogy to the detriment of more legitimate practical and humanitarian aims, which unquestionably is true, physicians have no one to blame for it but themselves, through their lack of cooperation and increasing tendency to permit training-schools to be managed by extraneous influences, manipulate their own curriculums and arrogate the responsibilities which are primarily the function of the doctor.

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THE TRAINED NURSE OF THE FUTURE*

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With the ever-extending specialization of modern society, certain social groups take on the character of human commodities. They do not produce, but they conserve values. To these groups, the profession of nursing women belongs.

These human commodities are created, in the course of social development, by the need for personal service as between man and man and by the demand that this personal service, in degree of the exigency of human need, shall be of expert quality. Some particular agency of social service is frequently employed for the immediate supply of such expert assistance. In the case of the trained nurse, the hospital has served as her creative agent. Not unnaturally, the agent of creation becomes or attempts to become the maker and the molder of the

thing created; and not infrequently it comes to regard the creature it has incubated as its own particular perquisite, and designed specifically for its own use. This proprietary relation, the hospital, as the foster-mother of nurses, with the exercise of something of the maternal instinct and with more of the exercise of the instinct of self-perpetuation, has endeavored to assume.

But somehow or other in the unfolding of the biologic plan, the human creature tends to get away from his creator, to say nothing of his inevitable assertion of his independence of the parental agent of his creation. And what is true, as a matter of biologic development of the individual, is true of the group. No social condition of the group can be ultimately fixed, no economic principle of its service can be permanently established, in the fixation or the determination of which the welfare of the group and of all the parties in interest in the life of the group has not been fully and fairly considered.

In the segregation of this group of human commodities which constitutes the profession of nursing, there are four parties in interest: first, the public that it serves; second, the hospital system that it serves; third, the medical profession whose essential handmaid it is, and fourth, the group of nursing women itself. Since the greater includes the less, it would seem that the problem might be reduced to simpler terms; to two factors, indeed, society and the nurse. But in a society so highly specialized as our own, interrelational group interests arise and, therefore, in the present instance, it is essentially a four-factored equation with which we are forced to deal. Perhaps no other group of human commodities has to sustain so many relationships in its service as does that of the trained nurse. At the present juncture, each one of these relational factors is seeking to exercise a dominant influence in the development of this human commodity group. Social welfare societies, hospital associations, medical associations and nurses' federations are all busy with the question of the graduate nurse.

So vital and yet so unseen is the force of the social movements which express themselves from time to time in what we term public sentiment, that they are hard, indeed, to reckon with. In America, public sentiment is a force which finds expression slowly. It has taken the public a long time to learn the values of the trained nurse as a social commodity, as the agent of an important social service; a tardiness to be traced to the fact that nursing is only a differentiation of domestic duty. But there are many evidences that the public is beginning, not only to appreciate, but to utilize, in many different directions, the services of the nursing profession, and that this type of human commodity is a definite answer to a very definite social demand.

The most actively dominant of all the parties in interest in the development of this social group has been the modern hospital, and hitherto there has been adequate reason for its influence. It has been the sole agent of the production of the trained nurse; it has created and controlled the opportunities of training. The product of its early efforts represented new and real social values, as contrasted with the nurse of earlier days who, like Topsy, was a social orphan and "just growed."

The profession of medicine, which has been simply the co-employee, with the nursing group, of the hospital of the past, has exercised but an advisory influence over the birth and training of the nurse. It has been the habitual critic of her development, and very pertinently so, because the physician is ultimately the only competent judge of the fitness of the nurse and the chief sufferer, held responsible to her employer, the patient, for her

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