

- (iv) testing oscillators with a high-frequency output exceeding 10 watts.

It does not apply to the normal type of violet-ray equipment, to X-ray apparatus, infra-red and ultra-violet ray apparatus, medical shocking coils, or to wave meters and low-powered testing oscillators as used by radio dealers.

### AMERICA COUNTS NURSES.

A special census of nurses is being taken in America so that this essential service can be rapidly organised in case of emergency. When the population census was taken, anyone was recorded as a nurse who considered herself entitled to this professional label. Various associations interested in the matter protested that this enumeration would be of no value unless it was ascertained whether the person was a graduate, registered, practical, or student nurse, but the Census Bureau refused to make any distinctions.

Since then the development of the international situation has induced the associations to take their own census. The idea was initiated by the New York State Nurses' Association, which has already sent out its questionnaires. The count in the other 47 States will be undertaken by similar local associations under the direction of the Nursing Council for National Defence.

Apart from the possibility of war, there will be a greatly increased demand for nursing as a result of conscription. The Red Cross Nursing Service is responsible for the Army and Navy's reserve nurses, and in case of need the surgeon-general of either force calls on the Red Cross. During the World War, this institution supplied 23,000 nurses. At the moment the five nursing services of the Federal Government employ 7,000 registered nurses.

It is estimated that one nurse is required for every 250 soldiers. In any army there may be 5 per cent. sick at any given time (more, of course, during actual hostilities), and one nurse is required for every ten patients. On the basis of an army of 1,500,000 men a nursing staff of 7,500 would be required by the army authorities alone.

The present census of nurses, though more or less unofficial, is regarded as so important that the American Red Cross has made a grant of £1,000 towards the expenses of taking it.

From an analysis of returns, it is hoped to discover how many nurses can be spared from their present positions for assignment elsewhere. As a supplementary project it is planned to provide intensive refresher courses for retired nurses and others who may wish to bring their knowledge up to date.

W. F.

### THE STATE REGISTERS OF NURSES.

The State Registers of Nurses compiled and published by the General Nursing Councils for England and Wales and Scotland are our invaluable records of trained nurses in Great Britain, containing upwards of 100,000 names.

From these lists alone we can calculate the number of women and men *qualified* to nurse the sick. In emergency such as war, the services of thousands of women can be called upon, with some little knowledge of the elements of nursing, and are useful aids if content to serve in subordinate capacities under professional direction.

A census which includes as "Nurses" women who are not registered would be of very little use as a guide to efficiency.

We note the American plan is to define four standards, and thus produce a really valuable record.

### SOME SUBSTITUTES FOR MEAT.

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#### MILK.

Milk is usually placed in the category of foods which can take the place of meat, and it is right that it should be on account of the protein and fat which it contains. It has been spoken of as "the perfect food," because it contains every one of the different constituents of food required by man, even to the vitamins. It is only in a somewhat superficial sense that it can be described as "perfect"; it is so, in so far as infants are concerned, but, in the case of adults and older people, it has too great bulk, for the amount of nourishment which it contains, to be at all suitable as the sole article of diet and to completely take the place of meat. To get a sufficient amount of nourishment from milk for a person doing an ordinary amount of work it would be necessary to take eight pints of milk per day, *i.e.*, a tumblerful of milk every hour except during those usually allocated to sleep. Yet this is no reason to minimise its value as a source of nourishment, and the fact that it is easy to digest and very completely absorbed adds greatly to its value. Neither is there reason to regard it merely as a beverage, as so many people do; it enters into the composition of many foods placed on our tables and, as an adjunct at meals to other foods, it supplies considerable additional nourishment. Its value in this respect has been demonstrated in the case of school children when, as a test, additional milk has been given to certain groups and the children comprising these groups have shown increase both in height and weight beyond the members of other groups who have not received such additional food.

Milk is held by some people to be an expensive food, but it is not actually so when considered from all points of view. It contains the best types of protein and fat and both in a form to cause them to be easily made use of by the body. In England good milk is expected to contain at least 3 per cent. of protein and 4 per cent. of fat (the legal minimum being  $3\frac{1}{2}$  per cent.) with 12 per cent. of total solids and 88 per cent. of water.

The chief protein in milk is caseinogen, which gives to milk its white colour. This protein is very digestible because it is held in a state of almost perfect solution by the phosphate of lime which intermingles with it. Milk is generally regarded as a fluid food, as a beverage, but it is only so before it enters the stomach; when it reaches that it tends to clot, owing to the action of certain constituents of the gastric juice. In some cases, a tough curd is formed owing either to the poor quality of the digestive process or to some other cause. This makes the milk difficult to digest and absorb, and causes discomfort and even illness. Protein is also present in the form of lactalbumin, but this is in much smaller quantity than is the caseinogen.

Carbohydrate exists in milk in the form of lactose or milk sugar. It is more of a food than ordinary sugar, more easily digested and the fact that it is not sweet renders it more palatable.

Fat, as already stated, is present in milk to the extent of  $3\frac{1}{2}$  to 4 per cent. In no form is fat found in a more digestible form than in milk. It has been calculated that in a drop of milk the size of a pin head there are 1,500,000 separate little globules of fat, and it is easy to realise that fat so finely segregated must be very easily acted upon and digested—and also that its absorption must be very complete. When milk stands the globules of fat rise to the surface and cream is formed. About 10 per cent. of the fat remains in the milk, and a considerably smaller proportion if a separator is used. The housewife generally

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