

## OUR PRIZE COMPETITION.

### WHAT ARE THE PRINCIPAL CAUSES OF RICKETS? HOW MAY THEY BE COMBATED?

We have pleasure in awarding the prize this week to Miss Jean M. Jepson, 22, Philbeach Gardens, Earl's Court, S.W. 5.

#### PRIZE PAPER.

Rickets, a constitutional disease of early life, is essentially one of metabolism. It is found chiefly among the ill-fed children of the poor. Although it is said to have its origin in some instances in intra-uterine life, it seldom makes itself manifest until several months after birth.

*Causes.*—It has been proved that the disease is due to faulty feeding and faulty assimilation, deficiency of fat and protein, combined with, to a less extent, an excess of carbohydrates and absence of what are known as vitamins, those accessory substances which are included in the diet of man and animals to prevent the development of "deficiency diseases."

Defective hygiene, overcrowding and want of sunlight all help to assist its progress. Syphilis and rickets often co-exist, the former being a great predisposing cause to the latter, though they are quite distinct diseases. In France it has been widely held that rickets owes its origin to syphilis.

Some debilitating influence upon the mother during pregnancy or lactation may be the cause of malnutrition in the infant; too prolonged nursing should be avoided. The poor lacteal secretion not only tends to produce rickets in the nursing, but the weakening effect upon the mother is calculated to engender the disease in any succeeding children; however, there is no better means of preventing rickets than by natural feeding by a healthy mother with abundant milk.

Rickets is rare in climates warmer than our own, e.g., India, due perhaps to the cheapness of oily and fatty foods, the more general use of milk, or the small expenditure of fat on heat production. It is not known to exist in the islands of the Outer Hebrides, although hygiene is here sadly neglected, where children are first breast-fed and then live on a diet of milk, eggs and fishes' roes.

Prophylactic treatment includes strict attention to the rules of feeding in mother and child, the latter's well-being does not depend on the quantity or quality of the food given so much as its power to be assimilated. The improvement of rickety children under oil, especially

cod liver oil helps to prove that the disease is due to fat starvation.

On account of deficient mother's milk, artificial feeding should be undertaken, good fresh cow's milk forming the basis, the lime it contains is essential to ossification and cannot be substituted. Milk should not be boiled for longer than one minute, as after that period the vitamins are destroyed.

In artificial feeding, to lay down any one system is impossible, modifications being required in almost every case, but suffice it to say that milk should be the only diet in the first year, and the chief element in the next. Older children may soon have potato with gravy or minced meat, also fish and fresh fruit and oranges. Various kinds of patent foods composed of starch and sugar should be avoided, nothing indigestible, or that cannot be well masticated should be given. Starchy foods should always be well cooked by prolonged baking or boiling. Giving of starch in excess, or before it is capable of being digested, interferes with absorption and assimilation, so even if a moderate amount of fat is included it may fail to be absorbed.

Other means of combating the disease are: abundance of fresh air and sunlight, cleanliness, warm clothing, attention to general hygiene, and regularity in all the functions of the child.

Although uncommon, cases have been recorded of what is called "late rickets," extensive softening of one or more bones occurring about puberty; this form, however, appears to be closely allied to osteomalacia. The causes appear similar to those of the early form, girls suffering especially, due, perhaps, to hæmorrhages or anæmia. Some cases on record, when the bones were attacked, include a girl dying from phthisis, and another suffering from exophthalmic goitre.

#### HONOURABLE MENTION.

The following competitors receive honourable mention:—Mrs. Farthing, Miss Henrietta Ballard, Miss M. Zeigler, Miss B. James.

#### PAPER MONEY.

Those who handle paper money which has been long in use, realise that it is not only repulsive but dangerous. This is confirmed by a microbiologist at the Pasteur Institute, Paris, who examined a one franc note under the microscope and found some 80,000,000 bacilli like star fish, lobsters, centipedes, shrimps, and grinning hobgoblins—the microbes, amongst other diseases, of tuberculosis, plague, beri-beri, and tetanus.

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