

milk, often become rickety in spite of the greatest care being taken to give them the milk pure and in suitable quantities. It was a common experience to find the younger children in a family become rickety while the older ones were healthy, even though all had been brought up alike, the rickets being due, apparently to the mother's health having suffered through excessive child-bearing, and, in consequence, the younger children were born weakly, and prone to dyspeptic derangements, and unable to digest the curd of cow's milk as strong and healthy infants usually do. It was one of the commonest experiences of practice to find, that weakly children vomited fresh cow's milk, and were in consequence fed on condensed milk or some of the patent foods, the rickets which followed in such cases being due to the weak digestive powers of the child quite as much as to the quality of the food which it had taken. Premature infants and those weakly from other causes were extremely likely, if they lived, to become rickety, if, unfortunately, they had to be brought up on the bottle. Cow's milk was, after all, a poor substitute for the milk of the mother. The enlargement of the spleen to which Dr. Cheadle had referred as sometimes accompanying rickets was, in his experience, due rather to the cachexia often present than to syphilis.

Mr. Edmund Owen, on being called upon by the President, remarked that much harm was done by the almost careless manner in which the medical man was apt to recommend the administration of "condensed milk," for the child who was not flourishing at the breast, or upon cow's milk. In his experience the worst cases of rickets were those of children who were being brought up on artificial food. Fresh cow's milk and water was the second best food for rickety children: the worst was that which was most widely advertised. As regarded the administration of cod-liver oil, it was generally resorted to in excess. Half a teaspoonful two or three times a day was far too large a dose for a child; it gave rise to sickness and diarrhoea; minute doses were of the greatest therapeutic value. But in hot weather, even small doses could not always be taken. Then the oil should be administered as an inunction. This had the double advantage, that it involved the regular washing of the child.

Dr. Finlayson said he had not intended to take

part in this discussion; he did not know of anything different from what was well enough recognized. It occurred to him, however, that some remarks of a local character might have interest. It used to be recognized that rickets were singularly rare, not only in Glasgow but in Scotland generally, so that, say thirty years ago, this disease was far from common in Glasgow, but he was sorry to say the same could not be said now. How then could the change be accounted for? He believed it was due to the enormous growth of the population, and especially of the female factory population. This had acted injuriously in several ways. There had been a great difficulty in obtaining milk for children, not only because the cost of it had been absolutely increased, but especially because the much cheaper butter-milk, which was formerly carted into town in enormous quantity from adjoining farms, had now become scarce, because of the greatly increased population using up the new milk from the farms, without the trouble of churning being required. Hence, the use of oatmeal, which required milk, had fallen off very much, and the children had been deprived to a great extent both of oatmeal and milk. Another explanation of the prevalence of rickets in Glasgow was to be sought in the growth of the city, making it more and more difficult for the mothers of the poor to send them out into the open air, so that they were cooped up in the flats of large tenements. These causes, he thought, had a very potent influence in leading to an increase of rickets in Glasgow, much more than the change to the soft Loch Katrine water introduced about that time.

Mr. E. L. Freer was pleased to find great prominence given to the hygienic and diatetic causes of rickets from a large experience of rachitic condition. He was inclined to pay less attention to the family histories, especially so far as syphilis was concerned, unless there were other signs present, than to the conditions under which the child had been living. He had met with numbers of cases where the breast milk had been given solely, and where the mother had been also in good health, but by far the greatest factor, in his opinion, was improper feeding. In those children where the digestive powers were so imperfect he had had the best results from treating the milk with Benger's *iq. pancreaticus* first, and afterwards giving Benger's food; by this means the milk had been con-