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of the University, whose claims alike on the State and on private beneficence are now more fully acknowledged than ever before. The funds thus made available, however, are far from adequate to the opportunities which exist for a wise extension in various directions of the activities of the institution. The teaching staff, as Professor David remarked, although few in number, are efficient. But there is, as he added, room for considerable additions. History and English, he pointed out, are too much for one professor; and in the teaching of modern languages, not excepting German, there is scope for a further advance. The endowment of a Chair of Anatomy, which might be named after the late Sir Edward Stirling, is also much to be desired. Again larger provision should be made for research work, and post-graduate courses might with great advantage be established. Unless the studies pursued in a University are carried beyond the text-books into the sphere of original investigation, the true ideal of the University as the centre and focus of the intellectual life of the State cannot be completely attained; nor is it able to give all the service of which it is capable in promoting, not merely the cause of learning, but the material interests of the community. In a young country like South Australia the application of scientific methods to all branches of industry and production is a highly important factor in economic progress. The University, by the research work of its professors and students, should be taking a large share in this development.

With emphasis it may be affirmed that never in its history was the University of Adelaide more alive to its opportunities for public service, or more strongly imbued with the spirit of progress, than it is to-day. The growth of its useful activities knows no limit except that imposed by financial considerations. Lord Haldane, in a speech at Liverpool a few weeks ago, submitted a strong plea for carrying the higher education given by universities beyond the academic walls to the great masses of democracy. Something of this kind is now being successfully attempted in Adelaide by means of the lectures periodically delivered by University professors on various topics of general interest. Engaged in this excellent branch of University extension work are men who in any part of the world would be regarded as authorities on the subjects with which they deal. The Adelaide University has from time to time yielded to older and wealthier seats of learning distinguished scholars who have gained a world-wide fame, and it could give others to-day if it were not jealously striving to keep them for its own advantage. Such men are carrying the appeal of the University far and wide, and making the institution to which they belong a real and powerful force in shaping the life and thought of the people. It is precisely work of this kind that Lord Haldane advocates for the education of the democracy. Broad and liberal culture is the true antidote to the so-called "class consciousness" which seeks to divide society into warring factions. Some of this culture is imparted to the young students within the University walls, and they become, when they leave, its missionaries; but there is a need also for the extra-mural work which, in Lord Haldane's words, will extend to the democracy that "inspired power of knowledge which belongs only to knowledge in its very highest form." He does not want to flood the universities by taking the masses into them—that would destroy quality in exalting quantity. The alternative is that "the universities must come to democracy;" and the more there is this "fairer distribution of education" the purer and clearer will be the social atmosphere and the higher the probability of that broad outlook which, enabling all classes to see their common interests, will tend to industrial tranquillity and patriotic co-operation.

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FOOD AND HEALTH.

PHYSICAL BASIS OF LIFE.

An audience which filled the Prince of Wales Theatre, Adelaide University, attended the second lecture on "The Physiology of Everyday Life," by Professor T. Brailsford Robertson on Tuesday evening. The phase of the subject dealt with was "Growth: External Factors." Amongst those present were Lady Weigall, with a party from Government House, and the Vice-Chancellor of the University (Professor Mitchell).

Professor Robertson dealt in interesting fashion with the physical basis of life and the manufacture of protoplasm. He pointed out that in all the materials which exhibited life there was a mixture of substances. Protoplasm contained, amongst other things, the constituents of nitrogenous elements knows as proteins. These proteins were built up of a compilation of simpler matter which might be compared to the materials used in a building, such as stone, bricks, wood, steel, cement, &c. That was, they were simple units, and they were called amino-acids. It had been found that human beings could not make these for themselves, at least they could not make more than one out of the entire number of 19. They were made by the plants, and man appropriated them, either directly from vegetables or indirectly through animals eaten as food. Animals appropriated them and built them into the proteins characteristic of their various kinds of protoplasm. Some proteins contained all the different kinds of amino-acids; others contained only some of them. The latter was especially true of vegetable proteins. If human beings tried to subsist on a diet containing only some of the amino-acids they would resemble a builder who should endeavor to construct an edifice which required several kinds of material, but who had only stone or bricks. The buildings made by plants had to be taken to pieces in order that the amino-acids might be used, and much better building materials if they utilised different forms of food in diet. Variety in diet was desirable.

The penalty for undue monotony in food was illustrated by the condition of the people in such countries as Spain, Italy, and the southern parts of the United States, where diet consisted chiefly of maize. The proteins in maize did not contain all the amino-acids necessary to build up the human type of protoplasm. Those who tried to live on maize and no other food were liable to contract disease known as pellagra, which had its origin in starvation, and one of its symptoms was a rough skin. The serious disorder of the skin was accompanied by many other symptoms. It was a very painful disease. A large proportion of those who developed it and were not treated for it died from its effects. There was no remedy but increasing the variety of food. Eggs, milk, and meat were particularly desirable when the symptoms appeared.

There were a number of other food substances which might be regarded as accessory to amino-acids. These were known as vitamines. They were like the amino-acids in one respect—they were necessary to health, and they, too, must be made for men by plants, bacteria, or yeast. A person lacking any one of these would be likely to develop one or other forms of the diseases known as deficiency. Beri beri was one of these diseases. It was responsible for more deaths during the Russo-Japanese war than were all the instruments of battle. This disease was very prevalent in the Orient. The absence from food of a certain substance found in the husks of grain and in fresh meat and milk would cause it. This substance was soluble in water. The introduction of modern methods of milling was responsible for eliminating from grain this element. The substance was found in animal fat, but not in vegetable oils. It was particularly abundant in butter. In plants it sometimes occurred in green leaves. Its absence from diet was believed to be connected with the origin of rickets. The absence of the anti-scorbutic accessory would occasion scurvy. The lecturer referred to the development of the British maritime power, which had continued notwithstanding the prevalence of conditions which induced that disease. There was no ground for mysticism in regard to these substances. Their properties and chemical behaviour were well known, and although at present scientists were unable to identify any one of them with any hitherto familiar chemical compound their chemical properties were well understood. Probably in the near future they might look for their complete identification and possibly they would be able to make them synthetically. The whole of the present knowledge concerning vitamines was only about ten years old, and a good deal still remained to be investigated in respect to them.

Professor Robertson illustrated his lecture with charts, and lantern views were shown, revealing the effect on animals, such as rats and monkeys, of diets deficient in one or other of the amino-acids, or vitamines. A series of views showed the stunted growth of a group of children in Central Europe, as the result of the lack of animal fats during the period of the war. They were suffering from rickets and presented a pathetic spectacle. Rats suffering from eye and other diseases were screened, and the lecturer explained that many of the maladies were cured by the simple process of adding to their diet the substance whose lack had induced their unhealthy condition. The effect of suitable food on growth was illustrated in similar manner.

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NECESSARIES IN DIET.

VALUE OF MEAT, EGGS, AND MILK.

The physical basis of life, the manufacture of protoplasm, the need for a sufficient and a variety of diet, and a recognition of some of the diseases which are the result of a lack of certain amino acids and vitamines in food, formed the principal features of the lecture delivered by Professor T. Brailsford Robertson at the Prince of Wales Theatre, the University, on Tuesday evening. It was the second lecture of a series of three on "The physiology of every-day life," and was listened to with as much interest and by as large an attendance as was the initial one. Lady Weigall and a party from Government House were again present, and among the audience were the Vice-Chancellor (Professor Mitchell) and Professor Henderson. The lecturer paid particular attention to the necessities for variety in our diet, so that the amino acids and vitamines, so necessary to the system, should be obtained, and by a series of slides exemplified the terrible effects upon the individual that followed a deficiency in such necessities. It was of interest to learn that in meat—from animals that subsisted on green food—milk, butter, and eggs most of the essentials for a healthy diet were provided, and it was the absence of such from the diet of the people in Central Europe during the war blockade that had caused, he said, the great loss of life and mal-formation there, especially among the children.

—Value of Animo Acids.—

In all individuals which exhibited life, said the professor, there was a mixtture of substances which contained, among other things, the constituents of nitrogenous elements, known as proteins. These were built up of simple matter, and contained a number of simple units which were called animo acids. It appeared that the human being could not make any of them for himself; they were made for him by the plants; the animals appropriated them, and built them up into the proteins characteristic of their various kinds of protoplasms. Humans appropriated them either through the plants or animals, and built them up into their own protoplasms. Some proteins contained all the various kinds of animo acids, of which there were 19 found in different protoplasms. Some contained them all, a great many, especially vegetable proteins, contained only some of them. If a man tried to subsist on a diet which contained only some of the animo acids, he would be in a position of one who tried to erect a building, requiring a number of different materials, but who had only stone or brick to use in it. As it was necessary to take to pieces the building already made by plants in order to use the animo acids, it followed that peopel would get much better building materials if they dieted from different forms of food. That explained the need for variety in diet. The penalty for undue monotony in food was illustrated by the condition of the people in such countries as Spain, Italy, and the southern parts of the United States, where diet consisted chiefly of maize. The proteins in maize did not contain all the animo acids necessary to build up the type of protoplasms, so that people who tried to live on maize and no other form of food were liable to contract a disease known as pellagra, which had its origin in starvation, and one of the symptoms of which was a a rough skin, as the name implied. The disease caused a serious disorder of the skin, accompanied by numerous other symptoms. It was a very painful ailment, and a large proportion of those who developed it, and were not treated for it, died from its effects. There was no remedy but increasing the variety of food, with the addition especially of eggs, milk, and meat.

—"Deficiency" Diseases.—

There were a number of other substances continued the lecturer, which might be regarded as accessory and were known as Vitamines. They were like the amino acids in that they were necessary to the maintenance of health. They also must be made for men by the plant, bacteria, or yeast. Lacking them a person would develop one or other of the diseases known as "deficiency," such as for instance Beri-Beri, which was responsible for more deaths during the Russia-Japanese war than were the instruments of battle. This disease was very prevalent in the Orient, and was due to the lack of substances soluble in water, and present in the husks of grain, in fresh meat, and in milk. The introduction of modern methods of milling was responsible for eliminating from grain this element. The substance was found in animal fat, but not in vegetable oils. It was particularly abundant in butter, and in plants it occurred in green leaves. Its absence from diet was believed to be connected with the origin of rickets. The absence of the anti-scorbutic accessory caused scurvy. Professor Robertson went on to speak of the development of the British maritime power which had continued, notwithstanding the prevalence of conditions which induced that disease. There was no ground, he said, for mysticism regarding these substances. Their properties and chemical behaviour were well known, and although at present scientists were unable to identify any one of them with any hitherto familiar chemical compound, their chemical properties were well understood, and no doubt before long, their complete identification would be established and, possibly, synthetized artificially. The whole of the present knowledge concerning vitamines was little over 10 years old, and they could not expect knowledge in this new field of discovery to be completed yet.

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Messrs. Anthoney, Hill, and Hudd were on Thursday elected by ballot to represent the House of Assembly on the council of the Adelaide University.

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CHAMBER MUSIC RECITAL.

The eighth concert of the season in connection with the Elder Conservatorium attracted a large audience to the Elder Hall on Monday night, when a chamber music recital was given. Schumann's string quartet in A major, Op. 41, No. 3, was the opening number, given in masterly style by Mr. Gerald Walenn (first violin), Miss Nora Kyffin Thomas (second violin), Miss Sylvia Whitington, A.M.U.A. (viola), and Mr. Harold Parsons, Mus. Bac. ('cello). Complete harmony prevailed among the instrumentalists, and there was no undue prominence on the part of any, although each had a distinctive share in the development of the different movements.

Cesar Franck's quartet in F minor for pianoforte and strings was especially enjoyable, and much of its success was due to the very fine pianoforte work of Miss Maude Puddy, Mus. Bac.

The vocalist of the evening was Miss Ada Wordie, A.M.U.A., whose fresh, sweet soprano was heard to great advantage in Schumann's "The Almond Tree," "Tears of Joy," and "The Green Hat." The "Old English Blackbird Song," by Hook, modernised by Corder, was delightfully sung, and Miss Wordie received an ovation.