

chancellors and the AUT have already rejected most of the measures canvassed by the Labour government, and Mrs Thatcher must therefore look very closely at alternative suggestions, such as introduction of a two-year degree course. The alternative is to cut back on the number of places and to restrict entry to higher education during the 1970s.

Nobel Prizes

Peace Award for Agriculturist

THE 1970 Nobel Prize for Peace, worth more than £32,000, has been awarded to Dr Norman Borlaug, geneticist and director of the Mexican International Maize and Wheat Improvement Centre (IMWIC). Although the announcement came as something of a surprise, Dr Borlaug's contribution towards easing the world's food problem makes him eminently worthy of the honour. This contribution can be measured by the number of developing countries which in recent years have greatly improved their wheat yields using the seed stocks pioneered by Dr Borlaug and his research team.

Norman Ernest Borlaug was born in Cresco, Iowa, in 1914, and received a PhD in plant pathology from the University of Minnesota in 1942. He joined the Rockefeller Foundation in 1944 and was assigned as geneticist to an agricultural project which the foundation was carrying out in collaboration with the Mexican Government. Envisaged originally as a scheme to help Mexican agriculture, IMWIC has since become well known for the practical aid it gives to stimulate cereal production in countries struggling to break out of the vicious circle of hunger and poverty.

Dr Borlaug is best known for his work on the development of dwarf wheats—high-yielding crop plants into which have been bred dwarfing genes from the Japanese 'Norin' varieties. These hybrid plants are very much shorter than normal wheat, which means that the wheat-stalk can support a heavier head of grain without collapsing.

But this is only half of the picture. Dr Borlaug had the foresight to understand that developing superior types of cereal seed was not enough. It was essential that the seed should be brought to the attention of the governments of needy countries, grown using adequate irrigation and fertilizer, and the crop skilfully harvested and distributed. He tackled the problem in two ways: by constant travelling to advise and persuade governments and industries to provide the necessary funds and facilities, and by training, in Mexico, young agricultural graduates from many of the countries which could put the newly developed seed to best use. The benefit of Dr Borlaug's vision has been felt already in India, where wheat yield has more than doubled in three years.

Two Physicists honoured

THE news that Professor Hannes Alfvén of the University of California, San Diego, has been awarded a joint share in the physics prize will come as a pleasant surprise to astronomers, who have long felt the need for such recognition of astronomy. Although the award is for physics, and not specifically for astronomy, Alfvén's work on plasma physics and magnetohydrodynamics has been used chiefly in astronomy rather than any other field. Born in Sweden in 1908, Alfvén has held many official posts in Swedish government

councils and academic societies; he is a Fellow of the Royal Astronomical Society, and was awarded a Gold Medal by them in 1967 for "his fundamental work on cosmical electrodynamics".

Whilst it has been a feature of Alfvén's career that many of his ideas are considered somewhat eccentric, there have usually been elements of great value within his elaborate theories, so that piece by piece he has built up an impressive list of positive contributions to astronomy. His work is fundamental to the concept of "frozen" lines of magnetic force being held inside a plasma, a phenomena of great importance to any understanding of the processes occurring in the magnetosphere, the atmospheres of stars, and interstellar matter.

With the Nobel honours in physics falling in the past three years to nuclear or high energy physicists it comes as no surprise that Professor Louis Neel, a solid state physicist, has been selected to share this year's award. Although Professor Neel is perhaps most widely known for his pioneering work on the theory of anti-ferromagnetism he became involved in a very broad range of problems throughout many aspects of magnetism.

Born in Lyon in 1904, Professor Neel spent the early part of his scientific life at the University of Strasbourg, where he published two of his celebrated papers explaining the basis of antiferromagnetism.

In 1954 he became director of the Institut polytechnique. Three years later he took charge of the Centre d'Etudes Nucléaires at Grenoble, and has devoted considerable effort within the last decade to building up the large campus at the University.

It was just after the war that he published his theory of ferrimagnetism, a type of magnetism which has assumed growing importance in recent years because of the electrical properties that seem to be associated with it. Neel showed how the magnetic structure of a ferrimagnetic material, was related to, but essentially different from, that in antiferromagnets. During the immediate post-war period he also carried fundamental work on the properties of small magnetic particles, which pointed the way towards the development of modern magnetic materials. His other accomplishments include a study of the domain structure of ferromagnetic materials and work on the theory of coercivity in ferromagnets.

Biochemist for Chemistry Prize

PROFESSOR LUIS F. LELOIR receives the chemistry prize for the light which his research shed on carbohydrate metabolism, in particular the synthesis of glycogen. In the 1950s he demonstrated that the elongation of the α -1 \rightarrow 4-glucan chain proceeded by a stepwise transfer of the glucose moiety from uridine diphosphate glucose to the non-reducing end of the polysaccharide. The wider relevance of nucleoside diphosphate sugars soon became apparent and this discovery complemented the enzymological work on phosphorylase for which C. F. and G. T. Cori and B. A. Houssay were awarded the Nobel prize for physiology and medicine in 1947. Although well known internationally, Leloir has worked almost exclusively in his own country, in a villa on the outskirts of Buenos Aires, and in far from ideal conditions. His meagre funds were to a large extent from his own resources and from a benefactor after whom his laboratory, the Fundación Campomar, is named.