

classification of the strongly interacting particles known as the Eightfold Way, is no surprise. Gell-Mann's classification of the strongly interacting particles first appeared in a famous Caltech report of 1961. It represented a crucial advance in the understanding of elementary particles, freeing physicists from the jungle of data that had been accumulating during the previous decade on strong interactions. It also paved the way for the celebrated quark theory, which set out to describe nuclear particles in terms of three fundamental quarks, each with a charge a fraction of that of the proton (or electron). Gell-Mann apparently still likes to think of the quarks as having essentially mathematical reality, although here he is in more controversial waters. Gell-Mann's Eightfold Way theory appeared at almost exactly the same time as an independent and very similar theory by Y. Ne'emann.

Gell-Mann's first major triumph was in 1953, when with K. Nishijima he put forward the concept of strangeness as a way of explaining the unusual behaviour of the neutral K meson and other particles. The puzzle about K mesons was that they were copiously produced in certain nuclear interactions, from which it was inferred that they interacted with matter by means of the strong interaction, and yet they lived for a period some 10^{12} times longer than would be expected for such particles. Gell-Mann and Nishijima managed to extricate theoretical physics from this paradox by proposing a formula for relating charge, baryon number, isotopic spin and the then new quantum number of strangeness. This is variously taken as a prediction or definition of strangeness.

The prediction of the Ω^- particle by Gell-Mann in 1962 was perhaps his most characteristic achievement. It is said that at an international high energy conference at Geneva he described a calculation which led him to believe that there should be such a particle as an Ω^- . The significance of his remark was not immediately grasped, but the Ω^- was duly found in an experiment two years later.

Gell-Mann was also the pioneer of another field known as Current Algebras. In 1960 he put forward the basic ideas on the algebra of fields which were to set the pattern of research in this subject for the following decade, and it is still too early to evaluate just how important the subject will turn out to be.

Gell-Mann entered Yale University at the age of 15 in 1944. After graduating in 1948, he took his PhD at the Massachusetts Institute of Technology in 1951. After a year at the Institute for Advanced Research and three years at the University of Chicago, he went to the California Institute of Technology. To those attending the *Nature* centenary celebrations last week, it was particularly unfortunate that he should have been prevented by illness from taking his place in the programme.

QUEEN'S SPEECH

Front Seat for Fuel and Power

THE fourth session of this Parliament began on October 28 with the traditional Queen's Speech, and this outline of the government's programme for the session before an election naturally contained few measures likely to provoke controversy in the ranks of the Labour Party.

It also seems that the Conservatives are in agreement with many of the proposals, and indeed Mr Edward Heath prefaced his attack on the speech with the statement that "there are some worthy bills that we are delighted to see". The most controversial of the twenty-seven proposals outlined in the speech is probably that to introduce a bill to force local education authorities to submit plans for comprehensive education, but this was no surprise; Miss Alice Bacon had already promised such a bill at the Labour Party conference last month and the Conservative Party had already attacked the proposal at its own conference.

Proposals for the fuel and power industries have also provoked some rather bitter remarks from the opposition benches. It is intended to reorganize the electricity supply and gas industries and to enable the Gas Council to search for, refine and market petroleum. This last phrase has caused particular concern among Conservatives, who view it as increasing nationalization in a field which is being run very efficiently by private enterprise. For example, Mr Patrick McNair-Wilson thought it dangerous to risk taxpayers' money in an enterprise as risky as oil prospecting, and believed the proposal to be "a gross interference with the commercial life of this country". The coal industry was looked on with some favour in the Queen's speech, and although Mr Harold Wilson pointed out that a further policy of pit closures is inevitable, he said that the government would introduce a measure "to continue into the 1970s the programme of transitional help which the industry has been able to receive".

The best piece of news which the coal industry has had for a long time, however, is the announcement that the government has approved plans for four power stations to be built in the early 1970s at a total cost of £400 million, and that these will include the second coal fired station at Drax in Yorkshire. The other stations will be at Heysham in Lancashire and at Sizewell in Suffolk, both nuclear AGRs, and an oil fired station on the Isle of Grain. Mr Harold Lever, the Paymaster General, who announced these plans, said that the building of the Drax B station indicates that the government has "a clear determination to achieve a prosperous, viable and modernized coal industry with a long and firm future ahead of it". Another proposal that will be welcomed, at least by the Select Committee on Science and Technology, is that the government intends to establish the nuclear fuel business of the UK Atomic Energy Authority as a separate government-controlled company. This was recommended by the Select Committee in its reports both in 1967 and in 1969 and was regarded by them as essential for the smooth running of the nuclear industry at home and for the export drive in nuclear reactors.

Other proposals outlined in the Queen's speech included an undertaking that the government will maintain its application to join the Common Market; that they will introduce legislation to rationalize the work of the Monopolies Commission and the National Board for Prices and Incomes, and to combine them in a new body; and that they will make fresh proposals about the future of the Health Service. Otherwise, very little new policy was outlined and it seems that the coming session is likely to be a dour lead up to the General Election, with both sides concerned to preserve their electoral images.