ing to conventional treatment. After five to seven weeks Cotzias *et al.* determined the optimum dose that gave maximum benefit with minimal side effects (some patients could tolerate eight grams per day) and maintained the patients on this regime for up to two years. All patients showed some improvement, which was rated as modest in four of them, moderate in four, marked in ten and dramatic in ten. The double blind trial conducted by Calne *et al.* (*Lancet*, i, 744; 1969) was concerned only with postencephalitic cases of Parkinson's disease (the Cotzias trial included idiopathic and possibly arteriosclerotic cases as well). Calne *et al.* gave their twenty treated patients one gram per day, increasing the dose every third day if the increase was tolerated, but the maximum dose of L-dopa given was very much less than doses given by Cotzias *et al.* Patients were kept on the drug for forty-seven days and then given placebo tablets. Seven out of the twenty improved substantially, three moderately, five showed no useful response and five gave up the drug because of side effects. Although they were less enthusiastic than Cotzias *et al.*, Calne *et al.* felt that their results established that L-dopa was a useful treatment for Parkinson's disease.

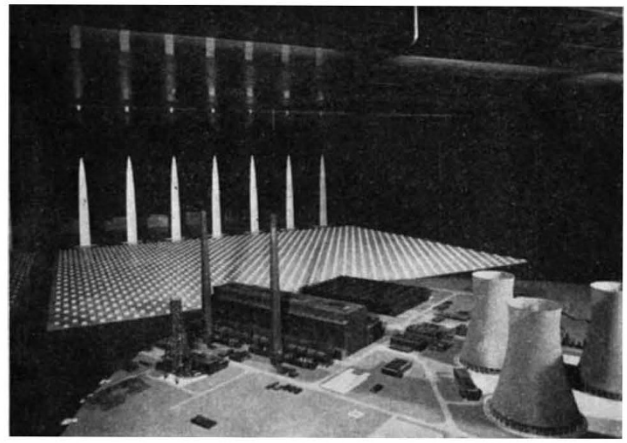
Braham *et al.* (*Brit. Med. J.*, **2**, 552; 1969) have found recently that absorption of phenylalanine and tyrosine seems to be altered in patients with Parkinson's disease. After a large oral dose of phenylalanine or tyrosine, the concentration of the two compounds in the blood one hour after the loading dose was significantly lower in the patients than in two control groups. The blood phenylalanine remained significantly lower in the Parkinsonian patients two hours after administration of phenylalanine. This is probably a sign of generalized malabsorption, for xylose tolerance tests carried out on some of the Parkinsonian patients indicated that the absorption of this sugar was also reduced. But the more interesting result was that after administration of phenylalanine the amount of tyrosine in the blood was not significantly different in the Parkinsonian patients from that in the controls, although there was significantly less phenylalanine in the blood of the patients. This fits the current concept of a deficiency in tyrosine hydroxylase activity in these patients, and a consequent reduction in the rate at which tyrosine disappears from the blood. Their results are, of course, open to other interpretations, but these latest results are strong evidence for the alteration of tyrosine metabolism as a possible cause for the symptoms of Parkinson's disease.

ELECTRICITY RESEARCH

A Diverse Programme

DR L. ROTHERHAM, member for research of the Central Electricity Generating Board, was keen to remove the spectre of the MHD programme when the CEGB research laboratories at Leatherhead, Surrey, were on show on June 18. The most cheerful feature of the work at CERL is the balance between the twin objectives of supplying the increased demand for electricity in the decades ahead and of encouraging innovation. This balance is particularly difficult to find because much of the work at CERL is bound to be of a long-term nature, but the decision to stop the MHD programme has generated its own share of heat.

Two of the principal projects in progress at CERL



Scale model of West Burton power station in a low speed wind tunnel.

are an on-line computerized control system to coordinate the working of the CEGB's 230 power stations and a series of experiments to find the best ultra-high voltage transmission system. There is also work on the biological effects of discharging warm water from power stations into rivers and, following the Ferrybridge disaster in 1965, a group has been using a wind tunnel and model cooling towers to investigate the stresses built up during heavy gales. One of the more speculative projects involves the design of a superconducting cable, and although the required cooling makes the cost prohibitive at present, Dr J. S. Forrest, director of CERL, thinks it likely that a cable will be in limited operation before long.

The computerized control system is intended for introduction within a few years. It will enable a central control engineer to carry out a number of coordinating functions, such as readjusting the load in the most economical way in the event of a failure at one station or locating the cause of a failure. A specialist from CERL is visiting the Soviet Union to find out about the control systems used there, which are something of a mystery at the moment.

CERL is engaged in a collaborative research programme with its opposite numbers in France and Italy, EDE and ENEL, to study the design of a 765 kV transmission line. The present grid system in Britain operates at 400 kV, but with demand doubling about every ten years the transmission voltage has to be increased by a similar amount about every twenty years, and the CEGB foresees the introduction of new cables some time after 1980. The initial use will probably be to link some very large new power station to the existing grid. The facilities at Leatherhead are being extended to allow for research into the megavolt and higher regions as well, at a cost of about £250,000.

The study of the stresses on model cooling towers has shown that the resonance response of structures is a major cause of failure. Several ingenious experiments using wind tunnels have been carried out; the appropriate turbulence is created by elliptic wedges, which generate vortices, and shear effects are simulated by a rough material. The results of these experiments have been substantiated by measurements on the 375 foot cooling tower at West Burton. The "high chimney" policy to reduce pollution is adding new momentum to the research effort on wind loading.