which believes it is in good shape for the battle is the British Non-Ferrous Metals Research Association, which this week is celebrating its first fifty years.

Set up in Birmingham by the Department of Scientific and Industrial Research, the research association is now fast outgrowing its present site near Euston Station, London. Last year's income was £700,000, almost double what it was five years previously in 1965, and it supports a staff of 195. Most of the increase has come from contracts and for projects supported by small groups of members, such as work which the association is doing on continuous casting and on hydrostatic extrusion. By contrast the income from membership subscriptions has risen less than dramatically, last year being still slightly less than twice what it was in 1961.

This seems to be because the British Non-Ferrous Metals Research Association has by now collected all the members it can in Britain. Turning from this saturated market, the research association has recently been looking abroad for members and at present about a quarter of the income is attributable to overseas contributions. This is an area of support which the director of the association, Dr A. J. Kennedy, clearly intends to foster.

Dr Kennedy sees the future of the association as lying more in large scale projects, each financed by only a few of the members. In particular, the interests of the research association have tended to move toward the engineering aspects of metallurgical plants. But the intention is to stay at the Euston site while looking for a place to carry on the large-scale work. The continuous casting experiments are located at Widnes and the hydrostatic extrusion at Enfield, for example.

CONSERVATION

Rape of Armenia

by our Soviet Correspondent

THE importance of conservation and particularly of land conservation was grasped relatively late by the Soviet Union, largely because of its vast expanses and great natural resources. Consequently, from time to time, conditions in individual republics and regions can reach and pass the danger level without, apparently, attracting the immediate attention they merit.

A case in point is a recent disturbing report from Armenia (*Pravda*, May 14, 1970). Here, it would seem, the widespread programme of irrigation and soil improvement has lost much of its impact because of erosion, particularly in the mountain regions. The figures for these regions are disturbing; the estimated annual loss to collective and state farms is 40–80 per cent of the harvest as well as 12 million tonnes of productive soil. More than 90,000 hectares of virgin forest have been felled (presumably during the whole period of Soviet rule), and recent reafforestation schemes have so far replaced only 3,000 hectares. Anti-erosion measures are far behind schedule; over the last two years, only a third of the new anti-erosion irrigation schemes have been completed and less than half of the planned terracing of steep slopes. Likewise, schemes to turn over non-arable land to stock-rearing and to bring waste land under hay crops have fallen

far short of target. Although long-term grass cultivation has been recommended as a highly effective anti-erosion measure, the area of land under grass still continues to fall rapidly. More and more irrigation schemes are being introduced (the best means of soil conservation—particularly in the geological conditions of Armenia), but are not being used to their full capacity—the case is cited of one particular installation, designed to serve 12,000 hectares which, in fact, is irrigating only some 7,000 hectares. Finally, since some of the best agricultural land in the republic, including market gardens, vineyards and well-irrigated arable land, lies close to urban centres of population, the expansion of these centres outwards is causing another type of “erosion”. The new developments at Erevan are particularly cited in this respect.

Some two years ago the Presidium of the Supreme Soviet of Armenia passed a special resolution by which all land suitable for agricultural purposes and at present used otherwise or not in use should be restored to agriculture. This, the latest report notes, has only “slightly” been implemented, and recultivation has been carried out only in “insignificant areas”.

The closing paragraphs of the report are illuminating. No one, it stresses, can legally be called to account for soil erosion and land loss despite the effect on the material wealth of the republic. The concept of responsibility is fundamental to the thought of the Soviet planners; should plans fail to be carried out in their entirety, somebody is found, at some level of administration, to have been responsible, whether culpably or through negligence. The disclaiming of responsibility implied in the report is evidence both of the late entry of the concept of conservation into Soviet planning and also of the even later impact of the idea into the consciousness of the average citizen, whom for fifty years the publicists have exhorted to further and further efforts of construction. Now that the emphasis is shifting, a whole new method of approach seems necessary.

POWER SUPPLY

Cool Cables Getting Hotter

A NATIONAL grid based on superconducting cables carrying direct current may sound like a pipe dream today, but the Central Electricity Research Laboratory is confidently predicting that, given ten—perhaps fifteen—years, the expected rise in power demand will strengthen the economic argument for such cables. The attention being lavished on the technical problems of superconducting cabling was evident at the CERL's open days which were held last week at Leatherhead in Surrey.

Research on superconducting transmission systems may seem foolish in view of what happened to the magnetohydrodynamic research project a few years ago. But there are some important differences. Superconductivity is, after all, a rapidly developing technology. Demand for power is continuing to double every ten years, and the case for superconducting cables grows with each additional megawatt that has to be channelled down a transmission line. At the present rate of expansion a simple extrapolation suggests that cables carrying up to 10,000 MW will be needed by the end of the decade, and superconducting