

reproduced; the characteristic strains of lesser songsters like the chaffinch and willow-wren are faithfully recorded; and the calls of cuckoo and dove—even the non-vocal drumming of the spotted woodpecker—lend pleasing variety. The quality is incomparably superior to that of previous records obtained from captive birds of a few species. These records will certainly give much pleasure and useful instruction: they may also provide valuable opportunities for analytical study of bird music. No doubt more will be made, for different kinds of birds, now that the example has been set. It is clear, too, that there are other subjects to which this interesting innovation of the 'sound book' may in future be applied.

#### Advances in Radium Therapy Technique

TELERADIUM therapy progresses in Great Britain, and more than one big unit is now established, for, apart from those centralized under the control of the Radium Beam Therapy Research, there is a 4 gm. unit at Westminster Hospital's Radium Annexe, where physicists and engineers have combined in devising an efficient form of distant electrical control. The radium container is suspended from a rotating beam bolted to a steel girder. This container weighs about 70 lb., and the transfer of the radium in it after application to the patients, to a massive safe for purposes of custody, is carried out electrically. There is no actual handling of the radium by any of the staff, the operator being 14 ft. from the patient's couch. Another interesting feature of the container used is that it carries a collar of platinum in order to reduce scattering of emergent rays to a minimum. These technical developments in the construction of big units of radium are very welcome, because the ordinary methods of protection for the personnel which are quite efficacious in the case of X-rays are inapplicable with penetrating gamma radiation.

#### The New Fulham Electrical Power Station

THE new power station at Fulham on the banks of the Thames was opened formally on September 26. It occupies an area of 15 acres and has a river frontage of 1,300 feet. It is an extension of the existing plant of the Metropolitan Borough of Fulham, but the disparity between its size and the demand required for the borough shows that the new station is an undertaking to serve the Grid. Two sets of 60,000 kilowatts each were installed this year and a third set is now being added. The boiler house is at right angles to the river and the turbine room is parallel to the river. Two white reinforced concrete chimneys three hundred feet high are already built, and when the station is completed there will be four of them. Three colliers have been ordered, each of them capable of carrying 2,300 tons of coal, and the jetty has three travelling cranes each capable of handling 175 tons an hour. The cranes pass the coal to weighing machines, whence it is fed to the furnaces on two belt conveyors which run at 300 feet per minute. Using only two cranes enables a collier to be unloaded in 6½ hours. When complete and working at approximately half its maximum power, the station will consume roughly 2,000 tons of coal per day.

The final fleet of colliers will consist of six boats capable of sea voyages and of passing under the seventeen bridges up the River Thames to Fulham. The new station has a dignified appearance and in conjunction with the Battersea power station on the opposite bank of the Thames will enable the Central Electricity Board to balance the London load.

THERE has been considerable opposition to the location of 'super' stations in urban areas, mainly on the ground that their chimneys emit grit and noxious vapours. But the gas washing plants at Fulham are so efficient that this objection has little weight. Each boiler is provided with sulphur extraction plant in the form of two separate units each provided with a separate induced draught fan. The sulphur extraction plant employs grid packing irrigated by a liquor containing suitable alkali so as to maintain intimate contact between the boiler gas and the washing liquor. The liquor system is known as the Howden non-effluent system. The washing medium is constantly recirculated and purged in order to keep the concentration of solid at the best value. The solids extracted are dealt with by a separate and external settlement plant. The amount of liquor recirculated through a complete washer for one boiler unit is 13,000 gallons per minute. Each complete plant is capable of handling 105,000 cubic feet of gas per minute, and the extraction efficiency for sulphur and grit is 98 per cent if the coal have a maximum sulphur content of 1.7 per cent.

#### The Electricity Grid

MR. H. HOBSON, in a paper read to the recent World Power Conference at Washington, pointed out some of the advantages that have accrued to Great Britain from the electricity grid. The present trend of the national output of electric supply makes it clear that, before the end of the first ten years of its operation, the system will have effected great economies without cost to the country. In the last three years alone, fuel costs per unit have been reduced 15 per cent and thermal efficiencies have risen more than 12 per cent. In 1925 the reserve generating plant was about 2 million kilowatts, against an aggregate maximum demand of less than 3 million. Last year the reserve showed no increase although the aggregate maximum demand was greater than 6 million. There is one point that is being seriously considered by the Air Raid Precautions Department of the Home Office. There is no doubt that the grid with all its associated superstations will be much more vulnerable to aircraft action in war than the old regime with its independent power stations and few overhead lines. Anti-aircraft forces would doubtless be a help, but permanent protection by camouflage or otherwise would be very difficult. Unless a super-power station were taken absolutely by surprise, palliative measures could be devised to prevent damage to the stations linked with it.

#### Estimates of Future U.S. Power Supplies

SOME conclusions from the reports given at the third World Power Conference as to how long