a certain number of the individual members of the stock. The investigator has worked with patience and carefulness; his most feasible practical suggestion is the permanent custodial care of the feeble-minded Jukes.

(4) In a clear and courageous essay Adelyne More points out the advantages of a deliberate reduction of the birth-rate. Only thus can women secure independence; it is the chief way of reducing infantile mortality; it is the only way by which struggling parents can attain economic security; it forms part of the prophylaxis against venereal disease; and it is the most effective way of ensuring the cessation of war. "An undue fecundity promotes international pugnacity of precisely the kind which was operative in bringing about the present war." In a slashing preface—admirable in its exposure of our Anglo-Saxon false shame—Mr. Arnold Bennett deals, somewhat too cavalierly, we think, with the hygienic, religious, political, and industrial arguments against the use of contraceptives. He does not consider the ethical difficulties—perhaps transitional, but already real enough—involved in being able at will to evade the natural consequences of sexual intercourse, nor the social difficulties involved in the unequal birth-rate in different sections of the community, and in the likelihood that birth-control would tend to be adopted most among thrifty, far-sighted, controlled, and "individuated" types, of whom a progressive nation wishes more, not fewer. J. A. T.

ENGINEERING EXPERIMENT STATIONS.

A MEMORANDUM prepared for the Governor and the General Assembly of the State of Illinois, concerning the work of the College of Engineering and the Engineering Experiment Station of the University of Illinois, has lately reached us. It is partly a statement of the work of the college, which gives degrees to more than 200 engineering students annually, with photographs of some of the large engineering works executed under the direction of its graduates, and partly an appeal for a large extension of its buildings. It is pointed out that the growth of a State in population, wealth, and influence depends chiefly on its success in the development of engineering industries.

It is known that the "State universities" of the United States have engineering laboratories more largely staffed and more completely equipped than those in this country, and that they carry on research work very directly associated with industrial needs. Lately there has been a movement to develop these as "experiment stations." In the case of the Illinois University the control is vested in the heads of departments of the college; the ordinary equipment of the laboratory is used, but there are nine investigators devoted to research work and fourteen research fellows who give half-time to research. All results are published and 106 bulletins have been issued.

In a short account of the more important researches carried on, it is stated that Prof. Talbot's tests of reinforced concrete have supplied information on which standard practice has been based. They are well known in this country. In the case of iron alloys, researches have been made with an electric furnace permitting melting *in vacuo*. These, it is claimed, have led to the production of iron alloys having magnetic properties far superior to anything hitherto known—for example, specimens with a permeability seven or eight times higher than any other alloy. A new law bearing on steam-engine practice has been discovered by Mr. Clayton, connecting the form of the indicator expansion curve with the quality of steam in the cylinder. This makes it possible to predict the economic performance of an engine from the evidence of the indicator diagram. Prof. Goodenough has deduced values of the constants for steam which, it is stated, give the means of calculating steam tables of far greater accuracy than any hitherto published. Prof. Parr has devised a new low-temperature process of carbonisation of the non-coking Illinois coal of great importance, with the advantage that valuable by-products are recovered.

The building programme put forward will involve an expenditure of nearly 1,000,000*l*., exclusive of land and equipment. In the last two years the expenditure of the college has been 152,000*l*., and the budget for the next two years is 300,000*l*. Some account is given of the Massachusetts Institute of Technology, now incorporated with Harvard University, which has purchased land and erected buildings and provided equipment at a cost of 1,400,000*l*.

The most important experiment station in the United States is, no doubt, the Bureau of Standards—a Federal institution which has relations with many industries, and receives from the Government 125,000*l*. annually. A remarkable development is the Mellon Institute attached to the University of Pittsburgh. There any industry can endow a fellowship for a specific research. The University selects a suitable investigator and provides the laboratory. When results are obtained a small unit factory is established near the institute and the process worked on a small but commercial scale. The annual expenditure is 30,000*l*.

PROF. EMIL VON BEHRING.

IN NATURE of April 26 a short chronological survey was given of the career of Emil von Behring, whose death was recently announced. In the early eighties of last century, whilst a military surgeon at Bonn, Behring commenced a series of investigations which ultimately led him to the discovery of anti-toxins. This work merits fuller notice than could be given to it within the limits of a paragraph in the Notes columns of NATURE.

The fact that white rats were generally immune against anthrax, whereas ordinary wild