



THE ADVANCEMENT OF SCIENCE

VOL. III, No. 11

CONTENTS

PAGE

P

Science in Education, by A. E. E. McKenzie, Secretary, Oxford and Cambridge Schools Examination Board ¹
PRODUCING OILS : SCIENCE LENDS A HAND, BY DR. G. D. HOBSON, DEPARTMENT OF GEOLOGY, IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY
Plant Breeding and Genetics To-day, by Dr. P. S. Hudson, Imperial Bureau of Plant Breeding and Genetics, Cambridge
Science in Building, by Dr. J. L. Martin
Down House during the War
Secretaryship of the British Association

¹ This article was written before the author's accession to his present office.

Down House during the War

on human lives. We have seen in the past our towns and buildings developed in such a way that the opportunities for health and comfort and a freer living have been depressed at every stage. We have also seen already the way in which this process might be changed. It can be changed, and towns and buildings can be the means of enriching human life if we are prepared to recogniseand use-the knowledge that exists.

BIBLIOGRAPHY

- 1. WOLF : A History of Science, Technology and Philosophy in the 18th century
- 2. SHAND, P. MORTON : ' A Historical Survey of Steel
- and Concrete.' Architectural Review, Nov. 1932.
 Durton, A. F.: 'Application of Physics to the Heating and Ventilation of Buildings.' Journal
- of Scientific Instruments, Vol. 20, No. 7. 4. SHAW and OWENS: The Smoke Problem of Great Cities.
- EGERTON, Sir ALFRED : 'Warmth and Comfort Indoors.' Proc. Roy. Inst., Vol. 32.
 DUFTON, A. F.: 'Measurement of Equivalent Temperature.' Building Research Technical Paper,
- Temperature. Duitaing Research Technical Paper, No. 13, 1936.
 ВЕБРОВИ : 'Ventilation and Heating in Relation to Human Comfort.' Heating and Ventilation Eng. Journal, 1940.
 British Standard Code of Practice (Draft). 1 (C). 'Ventilation.' B.S.I.
 British Standard Code of Practice (Draft). VIII.
- 'Heating.' B.S.I.

- Heating.' B.S.I.
 Post War Building Studies. No. 1. 'House Construction.' H.M.S.O.
 ALLEN, WILLIAM: 'Daylighting of Buildings in Urban Districts.' R.I.B.A. Journal.
 GROFIUS, WALTER: The New Architecture and the Bauhaus,' p. 73.
 British Standard Code of Practice (Draft). 1 (A). 'Daylight.' B.S.I.

- 14. SMITH and BROWN : 'The Natural Lighting of Hend DROWN: 'The Natural Lighting of Houses and Flats with graded Daylight Factor Tables.' D.S.I.R. Published by H.M.S.O.
 Wartime Building Bulletin, No. 1. H.M.S.O., 1940.
 The Orientation of Buildings. R.I.B.A., 1933.
 British Standard Code of Practice (Draft). Chap. 1 (B).

- Sunlight,' B.S.I.
- 18. British Standard Code of Practice (Draft). VII (A). 'Provision of Artificial Light.' B.S.I.
- 19. WILLIAM ALLEN : 'Illumination.' Specification, 1945.
- 20. CROWTHER, J. C. : The Social Relations of Science, p. 569. 21. British Standard Code of Practice (Draft). III. ' Pre-
- vention against Noise.' B.S.I.
- 22. FITZMAURICE and ALLEN : Sound Transmission in Buildings. H.M.S.O., 1939.
- 23. Post War Building Studies. No. 14. ' Sound Insulation and Acoustics, H.M.S.O. 24. FITZMAURICE, R. : Principles of Modern Building,
- Vol. I.
- 25. REECE, P. O. : 'Recent Experience in the Design of Timber Structures.' R.I.B.A. Journal, March, 1944.
- BRADY, F. L.: 'Fundamental Principles of the Weathering of Building Materials.' R.I.B.A. Journal, June, 1943.
 BEVAN, R. C.: 'Fire Grading in Building.' Architects Journal, 1945.
 CHITTY, A. M.: 'Science and Housing.' R.I.B.A. Journal, June, 1944.
 Post War Building Studies. No. 3. 'Plastics.' H.M.S.O.
 BECKETT H. F.: 'The Nature and Properties of

- 30. BECKETT, H. E. : ' The Nature and Properties of
- Glass in Raymond McGrath.' Glass, p. 414. 31. British Standard Specifications, published by British Standards Institute.
- WYNNE-EDWARDS, R. M.: 'Bui R.I.B.A. Journal, July, 1945.
 P.E.P. Report. 'Housing England.' 'Building Plant.'
- 34. R.I.B.A. Report.
- 35. ARUP-OVE : ' Box Frame Construction.' Archi-
- tects Journal, June 14, 1945.
 36. CROWTHER, J. G. : British Scientists of the Nine-teenth Century, Vol. I, pp. 75-77.

DOWN HOUSE DURING THE WAR

On August 25, 1939, orders were given to close Down House to the public, to dismantle the Darwin collections, and to make provision for their safety. Precautionary measures were subsequently taken to support ceilings in some of the ground-floor rooms and the cellar; and blast walls were erected.

The house was fortunate in escaping serious damage during the war. It is worth record that both the H.E. bomb and the V1 bomb which fell nearest to the house (the respective distances were 150 and 430 yards) failed to detonate ; though the H.E. bomb in question caused damage, as it had to be dug out and detonated in situ. Seven H.E. bombs fell on the Down House property during the battle of Britain, and 257 on the square mile of which the house is the centre. This last number does not include incendiaries, of

which the nearest fell 20 yards from the house and, unobserved at the time, burned itself out in a flowerbed. During the period of the 'blitz' the not distant neighbourhood of an important military objective added to the risk to the locality : the plotting of craters on a map shows, by their relative density, that the enemy sometimes made attempts upon this objective, which itself suffered but rarely-a fact which supported other observations in maintaining a belief in the indifferent efficiency of the Luftwaffe. During the second attempt at destruction in London by piloted aircraft (1943-44) no damage was done in the neighbourhood of Downe. During the period of the VI attack the fact that the place lay within the zone of one of the methods of defending London-the balloon barrage-made its position pre-carious, and the village was seriously damaged by flying bombs brought down upon it, but the house again escaped lightly. No rocket bomb fell nearer than about three miles away, though on and just beyond that radius there were many, and the house was not infrequently shaken by what seemed, in distinction from the blast of H.E., to be earth tremors.

The injuries to the house and outbuildings consisted of broken glass in windows, the verandah, and the greenhouse, and a little damage to woodwork and to ceilings. There is no evidence of serious structural injury.

Though closed to the public, the utilities of the house in war time were not negligible. It was the headquarters of a platoon, and in the event of action might have been those of a company, of the Home Guard. As such it enjoyed the protection of a night guard, an advantage by no means to be ignored. It provided accommodation for a first-aid point, and the Association has received the thanks of the local authority for the facilities thus afforded. Officers and men of a searchlight detachment were billeted in the house for a few days in November 1940, and subsequently it was possible to offer some amenities to searchlight and balloon crews. When, on August 3, 1944, two flying bombs wrecked a number of houses in the village and damaged the official rest-centre, Down House afforded temporary accommodation to some thirty homeless persons.

The house staff was reduced during the war by the demands of national service, and is not yet fully restored. The rehabilitation of the house and grounds occupies its attention; in the present state of available labour this process must be slow. Nevertheless, the Darwin Memorial rooms have been reopened to the public (October 29), from 11 A.M. to 5 P.M. daily, excepting Fridays. Important additions have been made to the collection during the war. Among these are the notebooks kept by Darwin during the voyage of the *Beagle* and his MS. of the diary of the voyage, together with a number of other personal papers and possessions, which have come from members of the family; while Dr. R. Vaughan Williams, O.M., has presented Joseph Wright's portrait of Dr. Erasmus Darwin and other portraits. These additions and the rearrangement of the collection necessitate a new catalogue, but the reopening has not been delayed for the preparation of this.

The house committee has under consideration the possible uses of the property for appropriate purposes of research. That it should be so used was a wish of the donor, the late Sir Buckston Browne. One piece of research has been begun during the war, and continues-an experimental bed of Lythrum salicaria (purple loosestrife) is grown annually in connection with inheritance investigations undertaken by Prof. R. A. Fisher, F.R.S., and Dr. K. Mather. With a view to developments of this nature, and to the hiture adequate maintenance of the house and property in a condition worthy of its high object, the Council of the Association has decided that measures must be taken substantially to increase the endowment of the property beyond the sum given for that purpose to the Association by the donor: such increase will be a tribute to his memory only less than to that of Darwin himself.

SECRETARYSHIP OF THE BRITISH ASSOCIATION

The Council of the British Association have appointed Mr. D. N. Lowe as Secretary in succession to Dr. O. J. R. Howarth, who in normal circumstances would have retired in 1942. Mr. Lowe was assistant secretary before the war, during which he has served in the Ministry of Production; and

he has not yet been released. Dr. Howarth has been asked to retain office until the next annual meeting of the Association, and if Mr. Lowe returns before this he and Dr. Howarth will act as joint secretaries. Dr. Howarth remains in residence at Down House.