rural housing conditions, and in the United States of America and Canada for urban housing, are reviewed in a study entitled "Urban and Rural Housing" conducted by M. B. Helger, of the Swedish Social Board, which has been published by the Economic Intelligence Service of the League of Nations (Geneva: League of Nations. London: George Allen and Unwin, Ltd. 3*s*. 6*d*.). The study has special reference to the cost involved and the results obtained, mainly in the housing problems raised after the War of 1914–18, and the attempts at solving those problems up to the outbreak of hostilities in 1939. Separate chapters are devoted to each country, and figures are given showing the need for additional accommodation, the lack of modern conveniences in existing dwellings, and the number of existing dwellings which should be repaired, or demolished as unfit for further use. General aspects of the housing problem are discussed in an introductory chapter in which the two aspects—social and technical—of the problem are distinguished.

IN regard to the social aspects, the causes of fluctuation in building activity and their bearing on the periodic shortage of houses are examined. The technical aspects are concerned with the quality of housing and are better treated separately because the ideas of public authorities as to minimum standards appear to make it impossible to solve the housing problem merely by the operation of supply and demand. This is partly because the income of many families is inadequate to enable them to obtain housing with the minimum conditions of health and comfort, and partly because many families fail to appreciate the importance of these conditions and make no effort to obtain suitable housing even when they can afford to pay the rent for it.

Economizing on House Fuel

According to *Science Abstracts* of November 4, E. S. Draper, director of the regional planning studies, reported at a meeting of the Committee on the Hygiene of Housing of the American Public Health Association, that by using adequate insulation against heat loss when building a small house, the cost of the fuel required can be reduced by nearly one half. A simple heater suitable for the central heating of small houses was developed after tests at the Gilbertsville Dam construction community and is now being placed in the open market. The insulation studies were carried out in two identical four-roomed houses in the Niwassee Dam construction community. The installation of electrical heaters made it possible to record with great accuracy the heat loss in the two houses. One of them was insulated throughout by wool bats in the walls and over the ceiling and an insulation board under the floor joists. Both houses had both doors weather-stripped. Both families obeyed the same schedule of window-opening in bedrooms at night, windows closed by day, and the heaters were turned on and off at the same times. The reduction in the total heat loss in the insulated house was 44·75 per cent. The cost of the insulation, including labour and materials, was about £40. The simple heater described by Mr. Draper was designed to effect a reduction in the capital cost of central warm air heating over that of installing the warm air furnaces available in the market. The object was to have a primary heat source (without provision for air filtering or humidification) placed in an exceptionally small first floor heating chamber centrally located, so that it might give service to all rooms of a small house without the usual extensive system and basement.

Accessibility of University Theses

"The Accessibility of British University Thesis Literature", a pamphlet prepared for the Nottingham meeting of librarians last September by Colonel Luxmoore Newcombe, principal executive officer of the National Central Library, is a full and careful survey. A thesis usually contains original matter which may be important for the advancement of the subject, and the range of special studies has been enlarged of late. It should be easily consulted, if only that the work may not be duplicated by some other specialist. This accessibility, the writer shows, is far from being satisfactorily arranged at present. He gives a list of all the theses for degrees at British universities, and the conditions under which they can be consulted. He includes also the collections of foreign theses available. Oxford received between 1885 and 1938 about 263,000 of these. Great Britain has no great guides to her published and unpublished theses such as exist in Germany, France and the United States.

THE French issue annually a volume containing on an average 2,150 entries, well indexed. The American catalogue of "Doctoral Dissertations" during 1937–38 includes 2,768 items, but here the degree sought is so common among teachers that good subjects are getting rare, and descriptive rather than original stuff finds a place. The library of the University of Aberdeen has no printed list after 1937. Edinburgh has published an annual list since 1931, but it cannot be purchased. In London an annual list of titles is published and a cumulative catalogue is to be made out of it every five years. Medieval studies and history are fortunate in special catalogues. Only six universities have both an author and a subject index. A national guide to all British theses should be made, and its natural place would be the Central Library. It should be possible for friends of research such as the Carnegie Corporation to back the scheme with adequate funds. Colonel Newcombe also suggests that the Library might have a copy of every foreign thesis on loan. The photostat seems a suitable means of increasing the supply of duplicates at the various universities.

Astronomy in Ancient Egypt

THE traditional view that the knowledge of astronomy of the Greece of classical times had been derived from Egypt, a view to which the writings of the Greeks themselves lent support, has lost favour with increased acquaintance with the achievement

of the peoples of Mesopotamia in this branch of science, and of the indebtedness of Greek thought to Babylonian and Assyrian conceptions of the nature and movements of the heavenly bodies. At the same time, research on the astronomical knowledge of the ancient Egyptians has shown that its basis of exact and scientific observation has, if anything, been overrated. At the recent autumn meeting of the National Academy of Sciences, held at Brown University, Providence, R.I., on October 23–25, Dr. O. Neugebauer, in a communication on "The Egyptian Picture of the Sky" (*Science*, 90, 410; Nov. 3, 1939), pointed out that while Egyptian and Babylonian astronomy are usually quoted as equivalent foundations of Greek, and, therefore, medieval and modern astronomy, really very little is known about Egyptian astronomy. Investigation of Demotic texts, however, has now shown that Egyptian methods of treating the movements of the moon and planets were only very approximate, and without any consideration of details. This picture, Dr. Neugebauer stated, has now been completed by a Demotic text recently purchased by the Egyptological Institute in Copenhagen, which shows how the aspect of the sky and the setting and rising of the stars was connected with the religious myths. The close connexion of religion, especially so far as the underworld is concerned, with the changing aspect of the sky during the year indicates that the main interest of Egyptian astronomy was not a mathematically detailed description of very complex effects, but merely a rough scheme, just good enough to reflect the main traces of the observed facts.

Submarine Valleys

DURING the last nine years, the United States Coast and Geodetic Survey has made an intensive acoustic survey of the Atlantic continental shelf and slope of the United States. The surveys are now so far advanced that the surface topography can be studied in detail. Charts of most of the slope have been published by the Geological Society of America (Special Paper No. 7; 1939). The *Geographical Review* of October 1939 publishes "Atlantic Submarine Valleys" by Mr. R. A. Smith, with a chart on a scale of 1 : 1,000,000 of the shelf and slope, and adjacent land, between New England and Albemarle Sound. Even on this reduced scale many striking features are shown. The flatness of the shelf is so remarkable that only by the use of a five-fathom contour interval can any noticeable relief be shown. The slope, on the other hand, shows a topography so irregular and broken that a 100-fathom contour interval has to be employed for the sake of lucidity. While the shelf, for a distance of 60–125 miles seaward, shows beach forms, the outcome of marine erosion, or modified river forms, the continental slope is deeply dissected and shows forms characteristic of subaerial erosion. In many places the complexity of relief is much greater than that found in the Appalachian Mountains and is more comparable, according to Mr. Smith, with that of the western mountains of North America.

Lancashire and Cheshire Fauna

THE twenty-fifth annual report of the Lancashire and Cheshire Fauna Committee adds a large number of insects to the dual county lists and also to the British area and some species new to science. Among Coleoptera, *Philonthus jurgans* Tott. was discovered new to science from a specimen obtained at Ashton-under-Lyme in 1935, since when it has been found widespread throughout the British Isles, also occurring in Cheshire at Tarporley and Arden. *Aphis davidsoniella* Theob., a species that has been separated from *A. rumicis* L., has been obtained on dock at Preston and Stalybridge. The fly *Bairamlia nidicola* Ferriere is described as new from material obtained from flies breeding in birds' nests at Mobberley, Cheshire. Six new moths are added to the dual counties' lists and one new to Lancashire. The bird, mammal and Lepidoptera notes are largely of local interest, but some of the more general items include the breeding of the death's head moth from larvæ at Raby, Cheshire, a 1927 specimen of the rare migrant Camberwell Beauty at Alderley Edge, Cheshire, numerous foreign insects collected from imported fruit and other goods, the beetle *Cryptophagus acutangulus* Gyll feeding abundantly on the mould on damp plaster in almost all the new houses in the district, increasing numbers of red squirrels in the Ribble valley and in west Cheshire, detailed reports of the surveys on reed-warblers, tufted duck and turtle-dove surveyed for the British Trust for Ornithology, Lapland bunting at Ainsdale, where the little tern is nesting again, the spotted crake nesting in Cheshire, the bittern at Rostherne, the quail near Nantwich and increasing numbers of reports about many wading birds and duck formerly considered rare in the districts but which are obviously much more frequently seen now. The committee, of which Prof. J. H. Orton is chairman, has a membership of 280 and commences the year with a surplus of £146.

Merseyside Naturalists' President

THE annual meeting of the Merseyside Naturalists' Association (the Merseyside Branch of the British Empire Naturalists' Association), held at Liverpool Museum on December 3, elected Mr. R. K. Perry, keeper of vertebrates at the Museum, president for 1940, Dr. J. C. P. Miller, lecturer in applied mathematics in the University of Liverpool, as chairman, and Mr. Eric Hardy as honorary secretary. Formed last winter, the Society faces the War with a surplus in its ordinary and its sanctuary accounts, and will shortly issue a portfolio of its faunal and floral work during the past year.

Horticulture of the Lily

THE eighth number of the Royal Horticultural Society's Lily Year-book (from the Society's Office, Vincent Square, Westminster, S.W.1, 5*s*. paper, 6*s*. cloth), makes a very effective attempt to keep pace with the multitudinous variations of these plants. Mr. A. Simmonds lists the names and origins of 114 hybrid lilies, and there are papers which