

intelligence, on colour-blindness, and on instituting university teaching in medical and industrial psychology. His son has been appointed by the University to succeed him in his professorship.

Industrial Relations and the Cost of Living Index

A BROADSHEET "Wages and the Cost of Living Index" (No. 220) issued by Political and Economic Planning gives a useful brief review of the cost of living index itself and of the wage systems in the building and civil engineering, railways, iron and steel, coal and cotton industries and the Civil Service in Great Britain. The broadsheet forms part of a report on industrial relations which P E P is preparing, and does something to meet the need for a study of wages and other aspects of industrial relations which such innovations as 'pay-as-you-earn' have intensified. In addition to its descriptive part, the broadsheet includes the general conclusion, first, that if wage policy were sufficiently well co-ordinated between workers and employers and between different industries, it could be arranged that wages should not fall as much as prices during the down-swing, and that in return they should not be pushed up so much when prices are once more rising. Such a policy has been put into practice in Sweden with results that open up a vista of possible 'trade-cycle bargaining', under which the application of sliding scales as we know them would be inappropriate. From the workers' point of view it would be wrong to peg wages to the cost of living and thus stabilize real wages when their productivity is increasing and prices falling, for this would mean that their share in the product of their labour would be declining. One may expect that if post-war employment succeeds in producing a steadily rising national income, workers in most industries will prefer to rely on their bargaining power rather than on automatic scales. Part of the dynamic of a full employment policy must be the general striving for an uninterrupted rise in the standard of living, and therefore in real wages.

Where the workers in an industry have little expectation of increasing their standard of living, they may decide that the sliding scale will at least help to maintain their real wages. What is good for one industry, however, may not suit another; and the different sliding-scale schemes have different effects on the internal wage structure of the industries concerned. Cost of living calculations will remain of the greatest importance whether or not an automatic sliding scale is used. The minimum or subsistence allowance, in terms of money, for example, fails of its purpose unless it is adjusted to cover changes in the prices of the goods needed for subsistence, and for this purpose the sliding-scale method will continue to have an obvious justification. It would seem, however, that the avowed purpose of the index, to estimate changes in "the cost of maintaining unchanged the pre-war (i.e., pre-1914) standard of living of the working-classes" has not much relevance to present-day requirements, and that separate indexes are required for various income groups and for different localities. If authoritative indexes of this kind could be provided, much that is at present contentious guesswork in wage negotiations would be based on measurement and calculation, and the application of an accurate series of cost of living indexes would not be confined to wages but should form an essential part of national statistics.

Sunspots and Human Affairs

Two papers by W. G. Bowerman (*Pop. Astron.*, 52, March, April, May, 1944) discuss the rather indefinite subject of the relations between sunspots and terrestrial conditions. The first illustrates a close parallelism between sunspot numbers and the total mortgage loans on residential property in the United States. This held during 1923-38 but broke down in 1939, presumably owing to the disturbance caused by the War. The second and longer paper describes in a 'popular' manner the quasi-periodic nature of outbreaks of sunspots and a good deal of recent American literature on relations between sunspot numbers and extremes of temperature and precipitation, as well as such indirect effects as industrial activity, forest fires and outbreaks of tropical diseases. The author accepts the views of Ellsworth Huntington and C. A. Mills that the major economic and cultural cycles of historical times result from long-period oscillations of solar activity, acting through average temperature, which in turn controls both the spread of disease organisms and the power of man to resist or cope with them. Within the 11-year cycle there is a 'sharp upthrust' of temperature near sunspot minimum, but the relations are complicated by volcanic eruptions.

The whole subject of the reaction of man with his environment is of considerable interest and importance to students of human affairs; but it is far too complex for superficial or partial studies to have any value. For example, the author refers casually to the effect of air-conditioning of hospitals in counteracting climatic control of disease; but he overlooks Major Markham's hypothesis that the poleward march of civilization is a function of the efficiency of house-warming. There is room here for a new system of philosophy, but the first necessity is to verify and comprehend the facts.

Structure and Classification of Bees

THE *Bulletin of the American Museum of Natural History*, 82, 1944, contains a very comprehensive memoir on the above subject, written by C. D. Michener, an assistant curator of the Museum. The method which the author has adopted is to make a detailed study of the morphology of a single species of bee, for example, *Anthophora edwardsii*, and then to compare numerous other bees with this species. Finally, with these comparisons as a basis, the author gives an account of the interrelationships of the various groups of bees followed by a general scheme of classification. The latter deals with all groupings, from families to genera, represented in America north of Mexico. The memoir is one intended for the specialist on the order Hymenoptera. The anatomical section is concerned with external organs and parts only; the internal organs and musculature being outside the scope of the work. A certain number of new terms are used including the expressions mesosoma and metasoma for the regions commonly referred to as thorax and abdomen respectively. Six families of bees are recognized. The Colletidae and Halictidae are the two oldest groups. The next in order of antiquity are considered to be the Andrenidae and Apidae followed doubtfully by the Megachilidae. The last family—the Melittidae—is too imperfectly known to suggest its position in the series. The largest family is the Apidae which is held to include a large number of bees usually considered to be outside its limits. The author mentions that cer-