

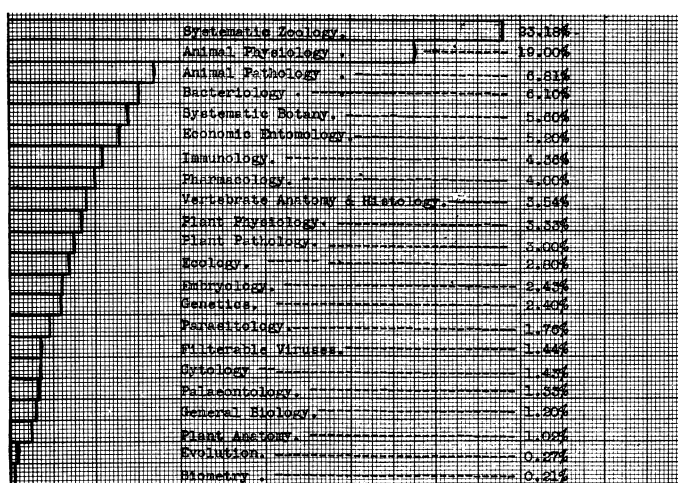


FIG. 1. Distribution of papers reviewed in *Biological Abstracts* from Vol. 1, 1927, through Oct., 1934, Vol. VIII.

regard the same investigations in an entirely different light.

And what about evolution? Papers dealing exclusively with evolution are surprisingly few. This situation may possibly cheer up the fundamentalists—or are there fundamentalists to-day? It is true that certain papers in experimental genetics and taxonomy discuss aspects of evolution which is not their main purpose. Is it not a fair conclusion to state that although biologists do not at all regard the evolution problem as solved, yet they evidently are not much interested in it? Is it because working in physiological fields “pans out” better?

Biometry appears to be in a state of real *depression*! According to our determinations, biometry occupies last place. At about the beginning of the present century there was great enthusiasm for biometry as a tool for measuring evolution. *Biological Abstracts* covers five or six journals devoted wholly to biometry of statistical methods but does not attempt to include many others, as for example those in which actuarial material is dominant. Nor do we find reviews of statistical papers which purport to demonstrate expectations of rise in stock values!

It must be exceedingly difficult to classify in existing categories some types of papers. Whether we wish to call it evolution or not, there is constant change in *styles* of investigations. For example, there is a place for papers in embryology and a place for papers in physiology. But at present there is considerable activity in the physiology of developmental phases. Difficulty in assigning papers such as these will continue because the biological sciences constitute a growing and changing body of knowledge.

Finally, it might not be amiss to acknowledge the debt biologists owe to *Biological Abstracts*, a truly democratic enterprise of the Union of Biological So-

cieties. Its value will tend to increase in geometrical ratio as the years of its publication accumulate.

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LABUAN, BORNEO, A NEW LOCALITY FOR THE WHALE SHARK

ON March 29, 1934, while working at the office of Dr. W. Birtwistle, director of fisheries for the Straits Settlements and Federated Malay States, at Singapore, the captain of a coasting vessel came in for information. He had with him the picture and dimensions of a very large fish which he had seen at Labuan a few days before. No one there knew the fish, but I recognized it at once as a fine typical example of *Rhineodon typus*, the whale shark. The specimen was 25 feet long.

Labuan is a small island on the northwest coast of Borneo, and gives us a new locality in plotting the distribution of this great fish. I had previously recorded the occurrence of the whale shark at Darvel Bay, on the northeast coast of British North Borneo, and had predicted its occurrence along the coast of the whole northern half of Borneo. The Sulu Sea is evidently one of the favorite haunts of this enormous fish, for we now have many records of its occurrence in all parts of the Philippines contiguous to the Sulu Sea. These records go back over a hundred years. Since the shores of North Borneo are laved by the Sulu Sea we may look for the whale shark anywhere in that region.

I have no doubt that *Rhineodon* is equally common in the Celebes Sea, which is connected by broad deep passages with the Sulu Sea. It may therefore be expected all along the north coast of Celebes and eastward along the north shore of New Guinea. Young whale sharks, up to a length of ten meters,

blunder into narrow straits and inlets and explore bays where they readily fall victim to the intricacies of the native baklad or fish corrals. Inquiry among the Malay fishermen often reveals the capture of whale

sharks in fish corrals at various times in the memory of the older men.

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SCIENTIFIC BOOKS

PARENTHOOD

The Twilight of Parenthood. By ENID CHARLES. W. W. Norton and Company, New York. Pp. vi + 226. \$2.50.

THERE have been three main periods in the history of opinion on population problems. In the first there was general and somewhat naive agreement with the Psalmist that children are like arrows in the hand of a giant, happy is the man who has his quiver full of them—in short, that increase in population is always desirable. In 1798 Malthus ushered in the second period by pointing out that the potential reproductive capacity of mankind is quite capable of outrunning the means of subsistence, and for more than a century afterwards the dominant note among writers on the subject was the fear that overpopulation would reduce mankind to misery. It is true that since about 1870 the birth rate in most European countries has been declining, but as the death rate also declined population kept on increasing and the era at which it would outrun the means of subsistence seemed merely deferred. In 1925, however, Dublin and Lotka pointed out that a decline in the birth rate results in a larger proportion of women in the child-bearing ages than in a stable age distribution and that consequently if the decline in the specific birth rates at ages were arrested the crude birth rate would continue to decline until the stable age distribution was reached. On the other hand, with constant death rates at ages the crude death rate would increase, so that a population which was actually increasing would ultimately with the same specific birth and death rates become stationary or even decrease. The United States, they found, was close to this potentially stationary condition in 1920, and Kuczynski has since shown that a number of European countries have reached a state of potential population decrease. The dominant note is no longer fear of overpopulation but rather of population decrease and the impression left on the mind of the reader by some of the more fervid authors is that unless something is done about it mankind will become extinct not later than next Tuesday.

Dr. Charles begins her book with an account of the improvements in agricultural science which have increased the means of subsistence. The second chapter, which gives a simple explanation of the methods of demographic statistics, leaves rather the impression

that the newer methods are due almost entirely to Kuczynski. As a matter of fact the net reproduction rate was first used by Boeckh, while the development of the mathematical analysis of the dynamics of population is mainly due to Lotka. The decline in the birth rate and the differential fertility of social classes are next discussed and it is pointed out that if, as there is some reason to believe, the birth rates of the poorer classes, who form the larger part of the population, are approaching those of the wealthier classes, the birth rate of the whole population will decline still further.

The fifth chapter is devoted to a discussion of whether the observed decline in the birth rate is the result of increase in density of population, as Pearl has concluded, or of some special cause such as the spread of contraception. It is scarcely correct to say that "Pearl himself was unable to offer any explanation of the fall in fertility observed in *Drosophila*." The latter¹ has found evidence "that crowding produces the observed effect on rate of egg laying primarily, though probably not solely, as a result of a collision or interference action of the flies upon each other, which alters the normal physiological equilibrium and processes of the individual, particularly with reference to three major functions—food intake, energy output in muscular activity and oviposition." Nor is the observed inverse relation between density and fertility confined to *Drosophila*. It has also been observed in the flour beetle *Tribolium* over the greater part of the density range, in fowls and in human populations.

The last chapter deals with changes in social organization which may make parents willing to have more children. The system of family allowances, Dr. Charles points out, has had little influence on the birth rate in either France or Australia, where it has been tried on a large scale. Her own hope is for a new system of education by which the child would "begin to be a useful member of the community from the age of three onwards. . . . In this way children would not be felt to be a burden either to those immediately responsible for them or to the community as a whole."

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¹ R. Pearl, *Jour. Exp. Zool.*, 63: 57-84, 1932.