

pulse at *E* as at *D*; for the rise of pressure determined by the addition of a given volume of incompressible material to a confined gas-filled space is proportional to the pressure of the gas filling the space.

This statement is also expressed in the diagram³ which is here given in photographic reproduction. The beginning pressure is marked zero—*i. e.*, ignoring barometric pressure—the “diastolic pressure” marked on the ordinate is just half way between zero and the “systolic pressure.” The ordinates drawn to represent the extent of oscillations are in the same ratio, that is the “systolic rise”—*EV*—at double the *manometer* pressure is just twice that marked at *N* near *DV* for diastolic pressure—a ratio of 1:2.

Boyle's Law shows that the ratio would be P'/P where *P* is the original *total* pressure; *P'* the new pressure produced by the addition of a constant volume of fluid. Accordingly: introducing *V* and *V'* as the respective volumes of the gas with *K* as the constant it was found in a concrete case where *V* was 100 c.c. and where 1 c.c. of fluid was added with the barometer at 747 mm. that the ratio of the size of the oscillations at 50 mm. (manometer) beginning pressure as compared with 100 mm. (797 mm. and 847 mm. total pressure) was 8.05:8.55 or 1:1.06 plus instead of 1:2 as per Erlanger hypothesis.

The ratio at 0 mm. (manometer) beginning pressure as compared with 100 mm. (manometer pressure was 7.54:8.55 or 1:1.13 instead of 1: *infinity* as demanded by the Erlanger hypothesis.

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FAUNAL CONDITIONS IN SOUTH GEORGIA

Regarding Mr. Luke's note on the rats of South Georgia,¹ it may be of interest to record that his question as to “what characteristics the rat would develop after a few years of such a specialized habitat” has been at least provisionally answered by the Swedish zoologist, Dr. Einar Lönnberg. This author in 1906 described the South Georgia rat as a new sub-

species,² and noted that it apparently differed from the typical brown rat in having a thicker skin, denser and longer fur, and a more rusty color.

Several of Mr. Luke's observations would be hard to substantiate, for instance the statement:

Until about thirty years ago there were no rats on the islands.

It is much more probable that these ubiquitous rodents were introduced in sealing vessels not long after American and British sealers first began to exploit South Georgia on a large scale, which was in the year 1800. Klutschak, who visited South Georgia in 1877, transcribed and published an American sealer's chart of the island, and designated as “Rattenhafen”³ the bay known to modern Norwegian whalers as “Prince Olaf Harbor,” but called “Port Gladstone” on the latest British map. Rats are still exceedingly abundant about this inlet, as I found in 1913. Within recent years rats are known to have been reintroduced repeatedly at Cumberland Bay.

The rats at South Georgia can not fairly be accused of having “devastated the few small animals living on the island,” unless the birds are meant; there are no other native land vertebrates. Rabbits were introduced about 1872 by a sealer coming from Tristan da Cunha, and perhaps two or three times since, but they never gained a foothold. A few horses and reindeer have been thriving there in a feral state for a number of years.

The whaling industry was started at South Georgia not “a few decades ago,” but in 1904. Although the rats do feed upon the whale carcasses, as Mr. Luke writes, it would be a mistake to suppose that they are at all dependent upon this source of food, for the creatures appear to be very nearly as abundant about the uninhabited fiords as they are along the shores of the carcass-strewn bays. I observed at Possession Bay, the Bay of Isles, and elsewhere, that the rats eat the young

² *Kungl. Sv. Vet. Akad. Handlingar.*, Bd. 40, No. 5, 21–23, 1906.

³ *Deutsch. Rundschau f. Geogr. u. Stat.*, Bd. III., 522–531, 1881.

³ *Loc. cit.*, 407.

¹ *SCIENCE*, N. S., XLV., 502, 503, 1917.

tussock grass, and that they devour also enormous numbers of the smaller species of seabirds (Tubinares), which nest in burrows.

I shall refer again to the rats of South Georgia in two forthcoming papers, one of which is already in type. The following references are to articles by the writer that throw light upon faunal conditions at South Georgia, and the way in which they have been affected by human agency: (1) "A Desolate Island of the Antarctic," *Amer. Mus. Journ.* XIII., 242-259, 1913. (2) "A Subantarctic Island," *Harper's Mag.* January, 1914, 165-176. (3) "Cruising in the South Atlantic," *Brooklyn Mus. Quart.* July, 1914, 83-110. (4) "A Report on the South Georgia Expedition," *Sci. Bull. Brooklyn Mus.*, II., 41-102, 1914. (5) "The Penguins of South Georgia," *Sci. Bull. Brooklyn Mus.*, II., 103-133, 1915.

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A PERSONAL AND FAMILY HISTORY REGISTER

TO THE EDITOR OF SCIENCE: In SCIENCE of May 16, 1913, the writer called attention to a call made by Dr. J. Madison Taylor in an earlier issue of SCIENCE, seeking aid and co-operation in a plan to secure a body of trustworthy vital statistics, and attempted to emphasize the crying need of just such a desideratum. It is gratifying to know that the aim of Dr. Taylor is now realized, and that under the above caption he has made available a means by which such data may be intelligently compiled and made permanent. The register forms a volume, quarto in size, and well bound, with provisions and directions for recording personal and family traits, history of birth, growth, health, disease, etc., and also blanks for various supplemental data that may be considered desirable in such a history, such as photographs, clinical and dental records.

The volume closes with a timely discussion of subjects relating to human welfare, and includes such topics as The Child as a Problem to Parents, The Building of a Citizen, En-

vironment and inherited Tendencies, Personal Hygiene, Age and Age Values, Development of the Mind, all of which are presented in terms easily understood, and at the same time without sacrificing scientific accuracy.

The writer welcomes this register as a worthy contribution toward a better understanding of the importance of human statistics in relation to the imperative necessity of both human conservation and racial betterment. The author has spared no pains, and has evidently devoted long and strenuous labor in its production, and the publishers, F. A. Davis Company, Philadelphia, have also done well their part in giving to the book their usual excellence of artistic and mechanical values.

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REWARDS FOR NATIONAL SERVICE

TO THE EDITOR OF SCIENCE: The American government has embarked in what will be the greatest war in its history and as such deserves and demands the unqualified support of its citizens and that every effort be made to secure such services at the minimum cost.

An effort, I believe, is being made to organize and direct the inventive skill of the American people so as to render victory more certain, save life and property and shorten the conflict. Abroad in many cases such services are rendered gratuitously but the donator in meritorious cases is rewarded by a suitable decoration. This in many case is prized more highly than a monetary reward.

Since the government is making an effort to secure such expert inventive assistance as practicable, would it not be possible to prevail upon the government to institute such a decoration and if not for the American Association for the Advancement of Science, as the greatest organization competent to represent the consensus of expert opinion to do so.

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SCIENTIFIC BOOKS

Konchûgaku Hanron Jôkwan (General Treatise on Entomology). By DR. T. MIYAKE.