

frequencies the alternations of pressure are so rapid that the equilibrium cannot follow them. Therefore, in a gas such as nitrogen tetroxide, where increasing pressure promotes association, there will be a greater increase in density in the compressions and a greater decrease in the rarefactions at low frequencies than at high frequencies. Consequently there will be two values of the velocity of sound, the higher, u_∞ , at high frequencies, corresponding to frozen equilibrium, and the lower, u_0 , at low frequencies, corresponding to complete equilibrium. At some region of intermediate frequencies, the 'critical' region, where the time for the attainment of equilibrium and the time for one vibration are of the same order of magnitude, there will be a varying velocity of sound corresponding to partial equilibrium. For the critical region an approximation formula holds from which the velocity constant may be computed, and for the other two cases values of u_0 and u_∞ may be calculated corresponding to experimental temperatures and pressures.

Grüneisen and Goens (*Ann. Phys.*, **72**, 193; 1923), using a resonance method and audible sound up to 15,600 vibrations a second, found values of the velocity of sound always corresponding to u_0 ; for example, 187 m./sec. at 25° and 565 mm. (calculated value of u_0 , 189 m./sec.).

In September 1927 we began a re-investigation of this problem, using ultrasonic vibrations produced by a quartz crystal as described by Pierce (*Proc. Am. Acad. Art. Sci.*, **60**, 271; 1925), Loomis and Hubbard (*J. Optical Soc. Amer.*, **17**, 295; 1928), and others. We found that contamination by air was a prolific source of error. For our purest sample (0.1 per cent air) we obtained a velocity of 192.6 m./sec. at 25° and 565 mm. pressure at a frequency of 51,570 vibrations a second, corresponding to a value of 5630 for the velocity constant. This result will be confirmed as soon as possible.

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A Function of the Adrenal Cortex.

SINCE the appearance of our communication in NATURE on a function of the adrenal cortex (Dec. 29, 1928, p. 998), a paper on the same subject has appeared in the *Journal of Physiology* (vol. 67, p. 343; 1929) by H. Florey, A. Szent-Györgyi, and M. E. Florey, in which they offer a 'criticism' of the statement that decerebrated adrenalectomised cats die in a short time from respiratory failure. These three investigators base their contradictions on two experiments, whereas our conclusions were drawn from more than one hundred experiments. The longer the interval that elapses after decerebration and before adrenalectomy the quicker the respiratory failure. But, in one of the experiments performed by these workers, adrenalectomy was performed *before* decerebration and therefore, so far as a repetition of our work is concerned, must be discounted altogether.

Naturally, there have been one or two exceptions in our own series due, probably, to accessory cortical bodies. The above-mentioned workers state that "post-mortem examination did not disclose any accessory adrenal bodies". We should like to know whether serial sections were cut of the whole reproductive organs. These bodies can rarely be found in the cat by ordinary methods of dissection. Again,

they suggest that any other extracts increase respiration. This, of course, is possible, but they seem entirely to miss the main point that pnuemin restores respiration after it has failed from adrenalectomy—an experiment they have not performed, since the condition did not occur in their one experiment.

Apart altogether from theoretical considerations, there can be no doubt that if a cat be decerebrated and then, after a lapse of one or two hours, the adrenal bodies be removed, symptoms of respiratory failure will not be long in appearing and the animal will be dead in an hour or so. A contradiction, based upon one experiment, of results obtained from a prolonged series of investigations, can scarcely be considered as obeying the elementary rules of scientific investigation.

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A Crystalline Tripeptid from Living Cells.

It has recently proved possible to isolate from cell extracts, for example, from extracts of yeast and red blood corpuscles, a tripeptid containing glycine, glutamic acid, and cysteine, which readily crystallises. The separation is based upon the insolubility of the cuprous salt of the substance in normal sulphuric acid. This property of the salt makes cuprous copper an exceptionally selective precipitant.

The tripeptid is obtained in amounts which suggest that it is a cell constituent of importance. As a cysteine peptid the ease with which it crystallises is exceptional, and the unexpected instability which it displays in various circumstances makes it an interesting substance from the point of view of general protein chemistry.

The isolation of this pure substance has indicated that 'glutathione', as previously described by myself, is not an individualised substance. Preparations as described have contained a large proportion of the tripeptid. As a number of workers are employing such preparations in experimental work, it seems desirable that I should make the error known as soon as possible. A description of the tripeptid is in the press and will shortly appear in the *Journal of Biological Chemistry*.

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Zoological Nomenclature.

IN accordance with the provisions of the International Rules of Zoological Nomenclature, the attention of the zoological profession is hereby invited to the fact that the secretary of the International Commission on Zoological Nomenclature is recommending to the Commission the nomenclatorial suppression of P. F. Gmelin's, 1758-1777, "Onomatologia Historica Naturalis Completa (Onomatologia Medica Completa)", volumes 1-7. This recommendation is based on the premise that the adoption of this nomenclator under the Rules will produce greater confusion than uniformity. Final vote in Commission will be taken about Sept. 1, 1930, and zoologists interested in this case are cordially invited to present to the Commission their views, *pro* or *con*, not later than that date.

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(Secretary to Commission).

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