the hydrocarbon and the activated hydrogen-oxygen bonds in the adsorbed state.

We have experimental evidence that the water may be substituted by certain other molecules having hydrogen bonds with electronegative elements, for example, hydrogen sulphide.

Since then, we have started experiments by a different method to study the effect of water on the reverse process, the hydrogenation of unsaturated hydrocarbons. The outcome of these preliminary experiments apparently shows that the presence of water is equally important for the hydrogenation process. A hypothesis that adsorbed water plays a vital part in the hydrogenation process was advanced by Boswell[2] in 1922, based on the study of the reduction of nickel oxide by hydrogen as well as the catalysis of the hydrogenation by partially reduced nickel oxide. The great difficulties of proving this hypothesis quite conclusively in the case of the hydrogenation seem to have led to it receiving little attention.

The first part of a detailed account of this work containing the experimental method and the results with paraffins will be submitted for publication in the *Proceedings of the Royal Society* at an early date.

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Nov. 13.

[1] *Phys. Rev.*, **46**, 331; 1934.
[2] M. C. Boswell, "The Mechanism of the Catalysis of Hydrogenation by Nickel", *Trans. Roy. Soc. of Canada*, Sect. 3, **16**, 1, later extended to platinum, *ibid.*, **17**, 1.

Endocrine Organs of the Blue Whale

As nothing seems to have been published in the literature on the hormone-producing organs in the whale, I submit a short communication of the preliminary results[1] of my investigations on the subject. The endocrine organs were collected by me during a whaling expedition to the Antarctic. They were preserved in a frozen or dried condition or by means of alcohol for four to ten months before examination.

The *anterior lobe of the pituitary gland* in the blue whale weighs about 30 gm. I have been able to demonstrate the presence of the follicle-stimulating, luteinising, thyreotropic and lactogenic hormones.

The *thyroid gland* in the blue whale weighs about 6–8 kgm. In a dry powder prepared from it was found an average iodine content of 2·03 per mille. The powder produces an increase of metabolism.

The *pancreas* of the blue whale weighs about 50–80 kgm. After being preserved in the frozen state for about five months, it will yield by extraction 500 international units of insulin a kilogram.

The *ovary* in the blue whale weighs 4–5 kgm. The quantity of follicular fluid that can be drained from one ovary is about 500 c.c. It contains about 2,000 mouse units of œstrogenous substances a litre.

The *corpus luteum graviditatis* may, in the blue whale, weigh up to 4 kgm. After having been preserved in a frozen state for a year, it still contains considerable quantities of progestin, namely, at least 60 rabbit units a kilogram.

Quantitative investigations have hitherto been carried out only with the pancreas and the ovary.

A complete and detailed description of the experiments and their results will be published later.

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[1] Alf P. Jacobsen, *Tidsskrift for den norske Lægeforening*, Nr. 5; 1935.

Swarming of *Odontosyllis phosphorea*, Moore, and of other Polychæta near Nanaimo, B.C.

IN his very interesting article on the "Possible Bearing of a Luminous Syllid on the question of the Landfall of Columbus" in NATURE of October 5 (p. 559) L. R. Crawshay mentions the swarming of *Odontosyllis phosphorea*, Moore, in this neighbourhood. He refers to the observations made by Potts[1] in 1911, from which it was inferred that there was a periodicity in the appearance of the swarming forms of the species in Departure Bay, and that this could be correlated with the phases of the moon.

As a result of much more extended observations of the actual state of affairs in 1914, it was shown by Fraser[2] that there is no such periodicity, and that swarming forms of both sexes may be taken on any day over a period of between three and four months provided the water is still at sundown, at which time, exclusively, swarming occurs. In more recent years, I have had many opportunities of confirming Fraser's observations, and swarming forms have been taken at dates both earlier and later in the year than recorded by him. It is interesting to find this difference in the behaviour of *O. phosphorea* from that of both *O. enopla*, Verrill, as recorded by Galloway and Welch[3] and of the Bahamian species, as now described by Crawshay.

The swarming form of *O. phosphorea* has not yet been taken at any point in this neighbourhood far distant from that at which it was observed by Potts and Fraser, but there is little doubt that this is due to the lack of sufficiently intensive search, since the area of distribution of the atokous form has now been so extended as to indicate that it is quite general in the Strait of Georgia. The conditions in Departure Bay are, due to its sheltered situation and to the set of the currents into it from around the adjacent islands, particularly favourable to finding epitokous polychætes and, as Fraser points out, these factors are, no doubt, partly responsible for the concentrations of swarming *O. phosphorea* which occur at the entrance to the bay.

It would, perhaps, be of interest in this connexion to record other species the epitokous forms of which have been taken in Departure Bay in recent years. These include *Autolytus prismaticus*, Fabricius, *Syllis elongata*, Johnson, *Syllis armillaris*, Müller, *Syllis borealis*, Malmgren, *Autolytus magnus*, Berkeley, *Nereis virens*, Sars, *Platynereis Dumerilii* (Aud. M-Edwards) var. *Agassizi*, Ehlers, *Nereis pelagica*, L., *Nereis vexillosa*, Grube, *Glycera nana*, Johnson, *Armandia brevis*, Moore. All these have been taken at or near the Station float at various seasons and at various times of day and night.

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[1] *Proc. Camb. Phil. Soc.*, **17**, Pt. 2; 1913.
[2] *Trans. Roy. Soc. Canada*, **19**; 1935.
[3] *Trans. Amer. Micr. Soc.*, **30**; 1911.