of psychiatry and, in association with the Royal Victoria Hospital, Montreal, an institute for research and teaching. Through the generosity of Sir Montagu and Lady Allan, a building and an extensive site have been provided. Facilities for intensive treatment are being set up. The development of research and treatment will be major objectives, and with this in view large and well-equipped laboratories are to be provided. The project is being supported both by the Rockefeller Foundation and by the Government of the Province of Quebec. Dr. D. Ewen Cameron has been appointed to the chair of psychiatry and will also be the director of the institute.

ACCORDING to a cable to *The New York Times* under date of January 26, the Royal Observatory built at Greenwich in 1675 is probably going to be moved. Sir Harold Spencer Jones, Astronomer Royal, is reported to have said that the proposal of moving has been approved in principle by the Admiralty, but that nothing definite can be done until the King sanctions it. After that the British Treasury will have to be consulted. Sir Harold said in explanation: "We must face the fact that Greenwich is no longer suitable. We used to have a greater record of sunshine than Kew. Now the annual total sunshine at Greenwich is something like 200 hours less than Kew. When the sun gets low sunlight is so weakened by smoky atmosphere that it is impossible to get registrations on the sunshine recorder."

DISCUSSION

THE GENETIC SEX OF INTERSEXUAL GOATS AND A PROBABLE LINKAGE WITH THE GENE FOR HORNLESSNESS

IN the Beltsville herd of goats, according to Eaton and Simmons,[1] the Saanen breed produced 11.1 per cent. of intersexes and the Toggenburgs 6 per cent. Paget[2] has found 14.3 per cent. intersexes in the British Saanen breed, but his figure is probably high representing the incidence in herds where the condition has become a serious problem. At Beltsville, the sex ratio was for Saanens 49.3 per cent. males, 39.6 per cent. females and 11.0 per cent. intersexes; for Toggenburgs it was 46.4 per cent. male, 47.6 per cent. females and 6.0 per cent. intersexes. Paget found 193 males, 105 females and 52 intersexes, but his figure for intersexes includes only those kids which were visibly intersexual at birth. The sex ratio in both sets of data is much more normal if the intersexes are regarded as modified females. If this interpretation is correct it would appear that the gene for intersexuality acts only upon the female so that the percentage of intersexes should be doubled to produce the true number of double recessives. Eaton and Simmons furnished strong evidence that the condition is inherited as a simple recessive. If so, some homozygous recessive males should exist which in certain matings would produce 50 per cent. males, 25 per cent. females and 25 per cent. intersexes. Perhaps this may account for the high incidence in Paget's data, higher than that expected in a Hh × Hh mating, if all intersexes are genetic females.

The suggestion that the intersexes are modified females is in line with other evidence. In vertebrates modification of sex is almost always from female to male, extremely rarely from male to female. Evidently intersexuality is produced by the survival and development of the primary sex cords in the genetic female and not by the growth of secondary cords in the genetic male. The genetic male lacks the possibility of producing the necessary second ingrowth of sex cords.

Some years ago the writer observed that all the intersexual goats he had seen (about 200 now) were hornless. Hornlessness is inherited as a simple dominant. Since then much inquiry and observation have failed to unearth a single horned intersex. If they exist they must be very rare. This suggests that there is a close linkage between the two genes, an important point economically, since selection for hornlessness has been practised by pedigree goat breeders for some time. The goat breeders have evidently been increasing the gene frequency for intersex by selecting for hornlessness and are thus doing themselves harm.

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[1] O. N. Eaton and V. L. Simmons, *Jour. Heredity*, 30: 261, 1939.

[2] R. F. Paget, *Monthly Jour. British Goat Society*, 36: 57, 1943.

FUNGUS INFECTION OF EGGS OF THE BLUE CRAB CALLINECTES SAPIDUS RATHBUN

IN 1941 Dr. Margaret Lochhead, working at this laboratory, observed a fungus-like organism on eggs of blue crabs taken directly from the water and from commercial catches. During the summers of 1942 and 1943 the writers began a program of study aimed to establish the identity of the infection, its effect on the hatching of the eggs, the percentage of crabs in the commercial catches that is infected and the distribution of the infection in Tidewater Virginia.

Professor John N. Couch kindly examined the infected eggs and identified the fungi as *Lagenidium callinectes* Couch, the primary parasite, and *Rhizophidium,* sp., which may be either parasitic or saprophytic (Couch, 1942).[1]

Experimental data indicate that infected eggs are usually below the normal size. Whereas uninfected eggs under optimum conditions in the laboratory gave a 70 to 90 per cent. hatch of normal first-stage zoeae, fungus-infected eggs under similar environmental conditions either failed to develop to the hatching stage or hatched into prezoeae, considered to be abnormal. The prezoeae rarely survived longer than forty-eight hours.

In 1942 infected and uninfected egg masses were suspended in the York River to determine the effect of the fungi on egg development under natural conditions. The infected eggs failed to hatch, and the fungus grew considerably. The uninfected egg masses showed an abundance of empty egg cases, indicating a fairly normal hatch.

The fungus appears to be quite uniformly distributed throughout the egg masses and is present in eggs in all stages of development.

Random samples of eggs have been examined from widely separated parts of Tidewater Virginia, namely, Rappahannock River, York River, Hampton Roads and Lynnhaven. The results to date indicate marked regional variations in the per cent. of infection.

The parasitic fungi represent an important biological factor that occupies a place with certain physical factors, such as low salinity, that are known to greatly reduce the per cent. of hatch (Sandoz and Rogers).[2] In light of the hatching results obtained, the value of protecting heavily infected egg-bearing crabs against commercial use appears questionable. Therefore, in selecting and evaluating a crab sanctuary for the protection of brood stock, attention should be given to determining the extent of parasitic fungus infection present as well as the suitability of the physical and chemical conditions that characterize the area.

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VITAMIN C IN THE NEEDLES OF SOME CONIFERS

SINCE the report of Shishkin published recently in SCIENCE[1] "that needles of ordinary pine trees contain large quantities of vitamin C," some authors (Dunham,[2] B. Schick,[3] Ch. Macnamara[3] and M. Donnelly[4] have called attention to the fact that the decoction of the needles of the evergreen tree was used with success against scurvy in the early expedition of Jacques Cartier in 1535 and further in the war between Sweden and Russia (1708–09).

This fact has suggested to us the investigation of the vitamin C content of the decoction of some conifers (needles), principally those growing largely in Southern Brazil (Araucaria, Podocarpus).

The determinations were performed on a 5 per cent. extract prepared by boiling the ground leaves with water, as is generally done in the preparation of tea. In other cases the leaves were ground and extracted with 2 per cent. metaphosphoric acid. The determinations were carried out before and after the treatment with H_2S and CO_2.

Tillmans' 2,6-dichlorophenolindophenol titration method was employed. We are indebted to Dr. F. R. Milanez, of the Biological Department of the Rio de Janeiro Botanical Garden, for the samples used in these analyses.

A brief summary of our results is shown in Table 1.

TABLE 1

No. of samples	Species	mg per 100 ml of the extract	
		ascorbic acid	dehydro-ascorbic acid
5	*Araucaria augustifolia (brasiliensis)*	2.7	1.0
5	*Podocarpus Sellowii*	3.3	1.3
1	*Podocarpus Lambertii*	2.8	1.9
2	*Araucaria excelsa*	0.5	0.8
1	*Pinus excelsa*	2.3	1.0

Although ascorbic acid is not present in the decoction in large amounts, the use of the pine-tea would be helpful in some countries where the vitamin C is not readily available.

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THE TWILIGHT CEREMONIES OF HORSEFLIES AND BIRDS

IN a recent number of SCIENCE[1] Leonard Haseman published an article on "The Courting Flights of Tabanids," describing a humming, hovering flight of horseflies which is performed by the males alone and only at the twilight hour. I wish to point out that

[1] John N. Couch, *J. Elisha Mitchell Scien. Soc.*, Vol. 58, No. 2, December, 1942.
[2] Mildred D. Sandoz and Rosalie Rogers, *Ecology* (in press).

[1] SCIENCE, April 16, 1943, pp. 354–355.
[2] *Ibid.*, August 6, 1943, p. 132.
[3] *Ibid.*, September 10, 1943, pp. 241–242.
[4] *Ibid.*, October 8, 1943, p. 325.
[1] L. Haseman, SCIENCE, 97: 285, 1943.