Vol. 44; see pp. 6–7) in which Heape introduced the terminology under discussion, he will find that the specific point has already been settled. Heape wished to introduce well-defined terms which would differentiate the phases of the reproductive cycle in mammals. Before giving his own choice, he discusses several alternatives, amongst them being the neuter word "œstrum." He rejects this because it already has a meaning in general use which is considerably wider than that which he desires to convey. He therefore takes the Latin word "oestrus" and gives it a clear definition, thereby introducing it as a scientific term. It seems clear, therefore, that there is very good reason for using the scientific term introduced by Heape and not the variant from general usage with a more indefinite meaning.

I feel that there is another reason why we should attempt to respect Heape's terminology, for it is said that to define a problem clearly is half the battle. Heape certainly did this for us and has thus paved the way for recent work on sex hormones which is producing such excellent results, especially in this country.

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BOUGHS, BUTTS AND BEAVER DAMS

IN SCIENCE for December 18, 1931, Mr. Charles Macnamara writes of certain beaver dams he had observed in which "at least 90 per cent." of the boughs had been placed with butt ends *downstream,* instead of upstream, as generally stated in published accounts of the beaver.

There is no question as to the accuracy of Macnamara's observations. On the contrary, as one who long has been an interested observer of the beaver and its works I am quite in agreement with him and feel that many who have written about the beaver, myself included, have, perhaps, when making generalized statements, rather unduly emphasized the position of the boughs in beaver dams. That the butt-end-upstream feature should have been singled out for special mention is probably of psychological interest only, but aside from the question of their accuracy as generalizations such statements tend to create the erroneous impression that this particular position of the boughs is a matter of design on the part of the beaver. Whatever the position of the boughs in a dam the explanation can usually be found, I think, in the conditions confronting the beaver where it is working; and some, at least, of the determining factors are fairly obvious, as, for example, the character of the stream when the dam is first started; the site of the dam and its location with reference to where the beaver gets its boughs; the route taken by the animal (sometimes forced upon it by the terrain) in transporting the boughs to the dam, and other factors.

To illustrate: The position of the boughs is, I believe, most likely to attract attention in dams that have recently been started, especially in such as contain many boughs that are fresh-cut and untrimmed and therefore particularly conspicuous. It is a matter of common observation in beaver country that many dams are started on small or shallow streams that at the time do not permit of transportation of dam materials by water; such transportation becomes possible only as construction proceeds and sufficient water becomes impounded. If, now, the beaver secures most of its boughs at points above the dam site and drags them by way of the creek bed to the dam, most of these boughs will be found on the dam with their butt ends downstream; but if most of the boughs are brought from points below the dam, then they will be found with butt ends upstream. However, many boughs may also be secured off to one side or the other of the dam and, depending in part upon the direction from which the immediate approach to the dam is made, may be found lying crosswise, diagonally or in a variety of other positions.

As the pond enlarges the beaver will very probably bring in most of the boughs from points above the dam, transporting them now by the favored water route, and hence from this time on most of the boughs will doubtless be found, when in place, with butt ends directed downstream.

If any general statement is to be made in regard to the position of the boughs in beaver dams, rather than making any reference to the direction in which the butts are pointing it might be safer merely to say that most of the boughs lie parallel with the stream or the direction of the flow.

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TWISTED TREES

A BRIEF note, under the above caption, by Dr. A. R. Cahn, of the University of Illinois, appeared in SCIENCE several months ago (May 23). In it Dr. Cahn recorded his observations in Ontario, Canada, of evergreen trees having twisted bark and wood. Noting that the twist, in the trees observed, was predominantly to the right, he wondered why this was so. In a letter to Dr. Cahn on June 1 the following explanation was offered.

When a tree is exposed to the wind year after year, it assumes an oval shape, when considered in horizontal cross-section through the leafy portion of the tree. The trunk would be off-center on the side toward the direction of the wind. If the prevailing wind shifts from left to right consistently in the area in which the tree is located, it would seem that there would be

a natural tendency to twist the tree from the left to the right. In other words, it would appear, if this explanation is correct, that the tree is a recording weather vane.

On return to his office this fall, Dr. Cahn replied to my letter and stated that he had come to about the same conclusion and suggested that this note be put in SCIENCE.

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"RICKETTSIA" AND "SYMBIONTS"

GLASER'S comment on our paper[1] (SCIENCE, September 4, 1931, p. 243) does not help to clarify the problem. We are in entire agreement that "Tinctorial properties *alone* (italics ours) do not constitute valid taxonomic characters." We attempted to point out that there are in the insects studied by us organisms which differ morphologically, tinctorially and culturally from other known bacteria as well as from the so-called "Symbionts." Symbionts in various insects probably consist of a variety of bacteria, while the organisms grown by us were uniform in character and appeared in every way to correspond to the description of classic Rickettsia. Therefore, we urged that for sake of clarity we cease confusing "Rickettsia" with "Symbionts." Even conservative bacteriologists, and we count ourselves in that class, have recognized the wisdom and conservatism of dividing the erstwhile genus *Bacillus* into a number of distinct genera. Differentiation of unrelated groups can hardly be considered "splitting," even by the ultra-conservative.

I. J. KLIGLER
M. ASHNER

JERUSALEM,
OCTOBER 20, 1931.

REPORTS

FORMAL OPENING OF THE NEW BERMUDA BIOLOGICAL STATION FOR RESEARCH

THE formal opening of the Bermuda Biological Station for Research, Inc., and the induction into office of its new director, Dr. J. F. G. Wheeler, took place at the new home of the station, "Shore Hills," St. George's West, Bermuda, on Wednesday afternoon, January 6, in the presence of His Excellency, the Governor of Bermuda, General Sir Thomas Astley-Cubitt, K.C.B., etc., and members of his family, members of the Colonial Government and more than five hundred invited guests. Six trustees of the station went down from New York with five guests, two of the Bermuda trustees were present and took a leading part in all the arrangements.

The band of the Northumberland Fusiliers was present in brilliant uniforms, and their music added materially to the pleasure of those attending the function. Special trains on the newly opened railroad conveyed guests from Hamilton and St. George, and Bermuda papers reported the gathering as "the most distinguished and representative seen on any public occasion for many years."

The governor and his party were met by the trustees at the south entrance and were seated in the open court, while the other guests came in by the north entrance and were seated in the verandas and balconies surrounding the court, where the exercises took place. Mr. F. G. Gosling, trustee of the station and for thirty years active in the development of scientific work in Bermuda, opened the exercises with a brief account of the steps which had led up to the present consummation. Thirty years ago, he said, the Bermuda Natural History Society was formed with the prime object of establishing the Bermuda Biological Station and the Public Aquarium. On every occasion the legislature had granted money when approached by the society and this culminated last year when £5,500 was given to assist in acquiring the present site. The Rockefeller Foundation had most generously supported the scheme and had made possible the present splendid development. The result was that to-day Bermula could take great pride in the part played by the government and people in the establishment of the station, which was a purely scientific institution, without any commercial object or aim. He especially commended the action of the trustees in appointing a British subject as the first director of the reorganized station, which statement was loudly applauded. He then introduced Dr. E. L. Mark, of Harvard University, the former director of the old biological station, saying that Bermuda owed him a deep debt of gratitude for his efforts and insistence in helping to bring the station to its present stage.

Dr. Mark, who was warmly greeted on rising to speak, was obviously overjoyed that his dream of so many years had come true, and we give his summary of the history of the station.

Your Excellency, Ladies and Gentlemen: My first impulse is to call you—as many of you long have been—my dear friends.

It is a great pleasure to meet you collectively and to express my keen appreciation of what you have done, both officially and unofficially, to further the interests of the Bermuda Biological Station for Research.

[1] *J. Bacteriology*, 22: 103–114, 1931.