

## A CONTINUOUS CALORIMETER

TO THE EDITOR OF SCIENCE: In your issue of July 24 Professor Lyndley Pyle refers to the use of the continuous calorimeter by students of Washington University for the past fifteen years. It is gratifying to learn that the method has been so thoroughly tested elsewhere for this purpose. In taking up your valuable space in my article of May 15 I described a particular type of simple calorimeter that we have found most suitable for the elementary work. That this method is not generally used in place of the older and more troublesome method of measuring Joule's heat appears to be because sufficient attention has not been drawn to it. The directness, accuracy and ease of manipulation will appeal I think to all those who have charge of laboratory classes.

The method itself, is, of course, not new. Callendar used it more than twenty-two years ago at Cambridge for comparing the thermal and electrical units, but it was not until he came to McGill University in 1893 that steps were taken to thoroughly investigate the merits of the method. A continuous method was used by Graetz as early as 1882 for measuring thermal conductivities.

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McGILL UNIVERSITY,  
July 29, 1908

## SCIENTIFIC BOOKS

*Publications of the Jesup North Pacific Expedition.* Edited by FRANZ BOAS. Leiden, E. J. Brill Limited; New York, G. E. Stechert & Co. 4to.

During the past year the following numbers of this publication have been issued:

*The Lillooet Indians.* By JAMES TEIT. (Vol. II., Part V.)

In this book Mr. Teit describes the customs of the Lillooet, a branch of the Salish Indians, who inhabit the valleys of the Coast Range of British Columbia, from Harrison Lake to the upper reaches of Fraser River. Mr. Teit visited the tribe twice, and describes in some detail the customs of both its lower and upper

divisions. The plan of description is similar to that of Mr. Teit's well-known book on the Thompson Indians of British Columbia; the habitat and divisions of the tribe, material culture, warfare, games and pastimes, social organization and festivals, birth, childhood, marriage and death, and religion being taken up in detail. On the whole, the Lillooet resemble in their culture the tribes of the interior, but they form an interesting link between them and the coast tribes, having adopted many of the industries and a considerable part of the social traits of the coast tribes. Mr. Teit describes in detail how the influence of the coast culture gradually diminishes towards those divisions of the Lillooet that reside farthest away from the coast. Of special interest in the descriptions is the discussion of the imbricated basketry and of the basketry designs of the tribe, a subject which has received considerable attention in recent literature. The houses of the division of the tribe living near the coast were similar in structure to the large wooden houses of the Coast Salish, while the tribes of the interior lived in underground dwellings and in tents. Weaving like that produced by the Salish Indians of the Gulf of Georgia was confined to the Lower Lillooet. The tribe has been so much influenced by the whites that very few of the old specimens remain, and consequently not many of the objects in use among them formerly could be illustrated. The transitional stage in the social organization of the tribe is interesting from a theoretical point of view, in so far as it shows clearly how a semi-totemic organization may influence a people that in previous times was organized only in very loose village communities. At the present time the influence of the totemic organization may be observed particularly in grave-monuments which are still preserved, many of which represent figures of ancestors and of totemic beings. The religious concepts of the people differ only slightly from those of the Thompson Indians. The numerous rock-paintings in the Lillooet country have reference particularly to the puberty ceremonials, and are explained in a manner similar to those

of the Thompson Indians. The principal difference between the Salish tribes of the interior and the Lillooet in regard to their religious beliefs is based on the introduction of some of the secret societies of the coast. Mr. Teit's paper is the first fairly exhaustive description of the Lillooet, and supplants the earlier brief description given by Mr. Hill-Tout.

*Archeology of the Gulf of Georgia and Puget Sound.* By HARLAN I. SMITH. (Vol. II., Part VI.)

Mr. Smith's description of the archeology of the southern coast of British Columbia and the northern coast of the state of Washington is a continuation of his paper on the shell-heaps of the Lower Fraser River, published in Vol. II., Part IV., of this series. In the first part of the paper, which is fully illustrated with text figures reproduced from pen and ink drawings of specimens found in the region under discussion, the archeological finds between Comox in British Columbia, and Olympia, state of Washington, are described in some detail. The locations of shell-heaps, fortifications and village sites, are given; and wherever excavations were undertaken, the character of the site and the remains are described by the author. On the whole, it would seem that the culture of the area was quite similar in type to the culture of the modern coast tribes. However, some striking differences were found in various localities. Perhaps the most important of these is the proof which seems to have been definitely given by Mr. Smith of the close relationship of the prehistoric culture of southern Vancouver Island with that of the mainland and presumably the interior; so that it would seem that at an early time a wave of migration passed over the Coast Range westward to the coast, and across the Gulf of Georgia to Vancouver Island. This culture is characterized particularly by the occurrence of numerous chipped implements, of tubular pipes, and of other objects characteristic of the culture of the interior. In other places along the coast of British Columbia chipped implements are very rare, while on Puget Sound and on the

outer coast of the state of Washington chipped implements begin to appear in greater number, and are apparently related to the types of Columbia River. Mr. Smith has also made full use of local collections, and has thus brought together an extended amount of material bearing upon the archeology of this region. Here are also found curious clubs of bone of whale and of stone which have often been claimed to be related to the clubs of New Zealand. Mr. Smith has succeeded in collecting illustrations of almost all the clubs of this kind that are known; and a discussion of this material shows very clearly that almost all of them may be referred to one single type, showing a bird's head surrounded by a head mask, which at the present time is characteristic of the western coast of Vancouver Island. Thus the theory of a foreign origin of this type would seem to be finally disposed of. Mr. Smith treats in a similar way the simpler forms of slave-killers from this coast and the peculiar single and double-bitted axes which are characteristic of Oregon. Another very peculiar type of specimens which is fully discussed in this book are the dishes from southern British Columbia and the Delta of the Fraser River, which have attracted the attention of archeologists. Mr. Smith has illustrated not less than nine of these, all of which show characteristic uniformity of type, and the provenience of which is restricted to a very small area. While the shell-heaps of the Fraser Delta have yielded a great many skeletons, skeletons are, on the whole, rare in the shell-heaps on the coast. Apparently this is related to the fact that in early times burials were not made in the shell-heaps, but in the cairns, while later on burials in canoes, and tree burials, seem to have been customary. Attention may also be called to the illustration and discussion of the interesting petroglyphs of the region between Comox and Nanaimo.

*Kwakiutl Texts—Second Series.* By FRANZ BOAS and GEORGE HUNT.

The second series of Kwakiutl texts, so far as published, contains traditions of the more southern Kwakiutl tribes, and particularly the

important "Mink Legend" and the "Transformer Legend." The former occupies about eighty-five pages, and the latter about seventy pages, of the series. The texts, so far as published, were recorded by Mr. George Hunt, and were revised from dictation by F. Boas. Thus it happens that the whole series of texts published in the Jesup Expedition are recorded by Mr. Hunt. That the bulk of this work was intrusted to Mr. Hunt is due to the fact that the Kwakiutl mythology is enormously extensive, and must be obtained from representatives of all the different families to whom the family traditions belong. The writer of these lines, who is responsible for the collection, could not undertake this work himself, and for this reason he taught Mr. Hunt to write Kwakiutl, and, by carefully controlling his work, trustworthy material has been gathered.

From a broader ethnological point of view a series of this kind collected by a single native recorder is of course unsatisfactory, because the critical insight into style and contents require more varied material. For this reason I have collected a considerable amount of material from various sources, largely intended to control the results obtained by Mr. Hunt, and also to present different styles of story-telling and differences of dialect. It is a matter of regret that this material has not been included in the present volume which thus would have gained very much in scientific value.

FRANZ BOAS

*The Psychology and Pedagogy of Reading*, with a review of the history of reading and writing, and of methods, texts, and hygiene in reading. By EDMUND BURKE HUEY, Ph.D., Professor of Psychology and Education in the Western University of Pennsylvania. Pp. xvi + 469. New York, The Macmillan Co. 1908.

The experimental studies of the last dozen years in the physiology and psychology of reading constitute an interesting and an important line of advance in experimental psychology. Motivated partly by logical, partly by linguistic, partly by pathological, and partly

by pedagogical, as well as by purely psychological interests, the investigations of the reading process have materially increased our knowledge of the visual processes, both central and peripheral. They have enriched our experimental technique, and have furnished unusually satisfactory data for an investigation of the higher mental processes. Historically, physiological psychology received one of its most important early impulses from an investigation of speech defects. The lamented Wernicke found a discussion of the linguistic processes a convenient introduction to the more general discussion of mental life, and many another teacher of related disciplines has found it convenient to follow his example. It is not uninteresting that language seems destined to supplement its former services to psychology by furnishing us with the best available technique for an experimental analysis of the more complex elaborative processes.

Reciprocally it would be surprising if any real advance in our knowledge of the linguistic processes should be without influence on language itself and the teaching of language. I regard it as fortunate that, as far as reading is concerned, these practical deductions have been drawn thus far mainly by those whose experimental work guaranteed real information and a scientific attitude.

The present work is made up of four parts: Part I. is a résumé of experimental and analytic researches in the physiology and psychology of the reading process. It occupies about one third of the book. Part II. is a compact account of the history of reading and of reading methods, pp. 76. Part III. contains an illustrated discussion of the more important theories and practises in teaching reading, pp. 119. Part IV. discusses the hygiene of reading, fatigue in reading, suitable type, length of line, etc. The conclusion contains some interesting speculations as to the future of reading. The book closes with an excellent bibliography and an index.

One of the most striking characteristics of Huey's style is his unusually careful recog-