true, then the reticulation within the red blood-corpuscles is a normal structure; if not true, then the whole body of histological work which has been accepted as correct must be doubted and be revised because about the first thing the histologist does with his specimen is to plunge it into a solution of potassium bichromate. Indeed, he does more, for he not rarely uses Müller's fluid, which is a mixed solution of potassium bichromate and of sodium sulphate. There seem to be two horns to the dilemma, and the microscopist that seizes either is likely to be gored by the other.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

On request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

The Cretaceous at Gay Head, Martha's Vineyard.

IN his article on "Gay Head," published in this journal of Sept. 23, and since supplemented in the Transactions of the Maryland Academy of Sciences (pp 204–212), my friend Professor Uhler furnishes a valuable contribution to the geological literature on that peculiarly interesting promontory, through applying to the task of unravelling the complicated structure of the Vineyard series the knowledge and experience gained in his painstaking and excellent studies of the Lower Cretaceous terranes between New York Bay and the James River. Professor Uhler is the first, in print, to apply, in the interpretation of the disturbed strata in the western portion of Martha's Vineyard, the general principles which he was first to discover in the mode of disposition of the same series in the Middle Atlantic States. To one somewhat familiar with the Middle and Lower Cretaceous of New Jersey and Maryland, the homologies forcibly indicated in the Vineyard series are full of fascinating interest.

While agreeing with Professor Uhler as to the general structure of the original Cretaceous series in Martha's Vineyard, i.e., in the existence of a lower portion, essentially clays, succeeded by deposits of sands, lignitic clays, often somewhat laminated, and alternate clays and sands,—the observations of Professor Shaler and those of us who have viewed the cliffs for several successive seasons have taught the fallibility of indulging in a detailed correlation of the entire section as exposed during a single summer. Each season presents new phases and unsettled local stratigraphic complications, revealed by the winter's storms, as may be noted by consulting Professor Shaler's very valuable memoir, published in the Seventh Annual Report of the U. S. Geological Survey (pp. 297–363, 12 plates), the same author's paper in the Bulletin of the Geological Society of America (Vol. I., pp. 443–452, pl ix.) (neither article is mentioned by Professor Uhler), or in my notes made during 1889, 1890, and 1891. It seems to me, therefore, that Professor Uhler has been a little confident and hasty in naming up the various terranes at Gay Head. In offering some friendly comments on his conclusions, it is not my purpose to discuss several important questions, such as whether the island has been submerged "five times" or only three, or matters of nomenclature, as, for example, whether the underlying clay series should be called "Potomac" or Amboy, or the more arenaceous portion designated as "Raritan," "Albirupean," etc. These questions, as well as those concerning unconformability and the order and relations of the various members of the lower half of the Cretaceous in this region, as well as in other Atlantic coast States will, I trust, soon be considered in full by Professor Lester F. Ward of the U. S Geological Survey, who has made them the subject of special study, and who is far more competent to discuss them than the present writer. The folding, crushing, faulting, and dislocations at Gay Head make a unique example in the Cretaceous and Tertiary of the eastern United States. It is difficult to account for the surprising altitudes of the clays and lignites, as well as extensive elevation and pre-Tertiary erosion, with no other agency than pressure and the encroachment of the sea. In fact, the strata are so disturbed, eroded, mingled with, and masked by, post-Cretaceous deposits that it is, in my opinion, hazardous, in many portions of the section, to attempt more than the application of the general principle of distinction between the lower portion, with more massive clays, and the upper part, embracing variously arranged clays and sands

The greensand toward the north end of the section is much contorted, as described; but my own excavations in search of fossils fail to corroborate my friend's hypothesis that the Tertiary fossils "have settled into the broken surface," the interior of the marl being, in his judgment, equivalent to the lower marl of New Jersey, and carrying Cretaceous fossils only. If such is the explanation of the occurrence of Tertiary fossils on the face of the greensand, it is remarkable that they have not, likewise, settled into the broken surface of the clays and sands on either side. A similar marl was seen well exposed in the season of 1889 at one or two points towards the eastern end of the Weyquosque cliffs in Chilmark, where at one place the materials in the margin of the terrane appear to have been beautifully sorted in Pleistocene or post-Pleistocene time.

With Professor Uhler I agree that the greater portion of the strata below the "ossiferous" conglomerate, which appears to be Miocene, is probably Cretaceous in age. As to whether the more massive clays are equivalent to the plastic clays of the Potomac in the Maryland region, I shall not question in this place, merely mentioning the occurrence of Dicotyledonous remains among the dark clays at high-tide level near that portion of the section which I understand my friend to pronounce Potomac. It is possible, of course, that this terrane had slipped down from the upper part of the cliff, and may be regarded by Professor Uhler as "Raritan." The latter name suggests the remark that, while referring the lower clays to the "Potomac," and explaining that the superimposed series, called "Raritan," is equivalent to the upper part of his "Albirupean," Professor Uhler makes no mention of the presence or absence of the rest of, or the lower portion of, the Albirupean, theoretically intervening between the Raritan and Potomac as defined by him.

So far as I now know, my paper on "Cretaceous Plants from Martha's Vineyard," read at the December meeting of the Geological Society in 1889,[1] was the first in which the opinion was expressed, or evidence adduced to show that a part, at least, of the Vineyard series represents an eastward extension of the Amboy clays to the southward of New England. The opinion expressed by Dr. Newberry, when delivering his judgment on my drawings, that "there can be no doubt that they represent the flora of the Amboy clays," and his view that these clays passed through the entire length of Long Island, have, I think, been fully justified. During the following summer, 1890, evidence was collected which proved the correctness of those views regarding the Gay Head region, while my unpublished notes, made the same season, indicate the extension of the Amboy clays in place as far east as Northport and Fresh Ponds in Long Island, while material probably derived from that series, when not in place, was observed at numerous points, among which are Wyandance, Farmingdale, possibly near Riverhead, and in Gardiner's Island. I anticipate that a careful search among the Pleistocene material between the Firehole and Montauk Point will reveal Amboy elements showing a continuance eastward to the Cretaceous material observed by myself in the north-east and south bluffs of Block Island. On Martha's Vineyard the Amboy clays may be seen in place at several points in the vicinity of Peaked Hill, while its material, perhaps re-deposited, may be traced to Lambert's Cove, or farther. Concretions with Amboy plants have been collected on the shore of Lagoon Pond, above Vineyard Haven, while Professor Thomas Battey of Providence has sent me similar specimens from East Chop and Cottage City, on the east coast, showing the probable extension, in past if not in present, of that important series of clays and sands as far, at least, as the eastern border of the island.

The greater identity of the Amboy (Middle or Lower-Middle Cretaceous) flora with that of the Lower Atane beds of Greenland, instead of with the Dakota group of the United States, is remarkable,[2] and strongly impels one to search for other evidence

[1] Abstract, Bull. G. S. A., I., pp. 554, 555; Printed in full in A. J. S., xxxix., 1890, pp. 93–101, pl. ii.

[2] See A. J. S., l.c., p. 99, and Newberry's remarks, Bull. G. S. A., I., p. 555.

of a middle or lower Cretaceous connection with Greenland, an hypothesis fully in harmony with the views of a connecting off-shore Tertiary terrane, advanced by certain Neocene palæontologists.

There remain still many problems in the stratigraphy and chronology of Gay Head. Next year will doubtless offer opportunities for fresh conclusions, at least on subordinate points, to my friend or any other geologist. There may even be good reasons for the sincere entertainment of almost fundamentally different opinions on the part of an equally skilful observer.

Among other problems, not merely local, is the circumstance that, notwithstanding the incompatibility and irrationality of the idea in view of present continental geography and topography, no other inherent evidence has, I believe, been found as to the deposition of the clays and sands of this series except such as tends to support the view of Professor Uhler that these middle or lower Cretaceous terranes are essentially fresh water formations.

DAVID WHITE.

Washington, D.C., Nov. 16.

On the Vernacular Name of the Genus Harporhynchus.

THAT well-known genus of American birds, of which *Harporhynchus rufus* is the type, is almost universally called in English, by every ornithologist, or indeed by every one who knows the species in the United States, a *Thrasher*. In New England, and to the southward and westward, it is known as the Brown Thrasher. We find it printed Thrasher in the A. O. U. Check-List, without any synonymic term or terms, as is also the case in such an authorative work as Coues's "Key to North American Birds." Now it is of interest to know that our British ornithological friends call these birds Threshers, spelled with an *e* in the first syllable, instead of an *a*. Recently Professor Alfred Newton submitted me the proof of a contribution of mine to his extensive work on Ornithology, now passing through the press, wherein this word occurred,—spelled Thrasher in my text, but Thresher in a supplementary note of his own. Upon his attention being called to it, I received from him the following in his reply: "I have not the least wish to interfere with your use of Thrashers,—there is some authority for it among English writers,—but I believe Thresher to be more correct (A. S., perscan or pirscan; Mid. Engl., preschen; Chaucer, threshen; Scal., preskja; Old Dutch, derschen; Germ., dreschen; Gothic, thrisken) and prefer that form for my own use—though, of course, giving it the sound of short ă, as in many other words, e.g., Derby. Thrash would seem to indicate a pronunciation like Thrāsh (almost thrarsh)—which is local and vulgar. A. N." This communication is dated Magdalene College, Cambridge, England, Nov. 12, 1892. According to this it would seem that our old, time-honored name of Thrasher, strictly speaking, should give way to the more correct appellation of Thresher.

R. W. SHUFELDT.

Takoma, D. C., Nov. 29.

Meteoric Shower.

THE meteoric shower here on the evening of Nov. 23 was very fine. The average of several observations, from 7 to 10 P.M., gave 250 good-sized meteors per minute, with a great many very small ones resembling a fiery dust. The meteors appeared to radiate from a point nearly overhead at 9 P.M.

C. W. KEMPTON.

Austerlitz Mine, Oro Blanco, Pima County, Ariz., Nov 26.

Remains of the Mastodon Recently Found in Tennessee.

NEAR Niebert's Springs, seven miles south-east of Knoxville, some workmen recently unearthed four molar teeth of the mastodon, which were in a fair state of preservation. They were found beneath about thirty inches of yellow tenaceous clay, containing water-worn stones. The largest tooth measured sixteen inches in circumference, and bears on its grinding surface one small and four large ridges, which are covered to the depth of one fourth of an inch with perfectly preserved enamel. The smallest tooth measures twelve inches in circumference, and has only three transverse ridges, whose surfaces are so worn as to expose the dentine in a number of places. The roots are so decayed and broken that it is impossible to determine their original length or number.

The University of Tennessee has in its possession other remains recently found in Hawkins County of this State. These consist of part of a tusk, measuring twenty-two inches in circumference by twelve inches in length, and a molar tooth with only two ridges. The tooth is well preserved; but the tusk is much decayed.

S. W. MCCALLIE.

University of Tennessee, Knoxville, Tenn.

The Humming-Bird's Food.

THE notes that have recently appeared in *Science* regarding the humming-bird's food, would seem to show that the bird's taste varies with the locality. In southern New York their favorite flower is the swamp-thistle (*Cirsium muticum*). No better place could be selected for studying the feeding-habits of the ruby-throats than a spot where these flowers abound. Dr. Gibbs thinks the individual flowers of the red clover too small for the ruby-throat's attention, but in the thistles the flowers are even smaller. Since it has been said that the bee gets pollen but not honey from the thistle, it would appear that the birds visit these flowers for insects. There is scarcely a flower that contains so many minute insects as a thistle-head. Examine one with a lens and it will be found to contain many insects that can hardly be seen with the unaided eye. If the ruby-throat eats insects at all, these are the ones it would take; and because the larger ones remained the observer might conclude that none were eaten.

WILLARD N. CLUTE.

Binghampton, New York, Nov. 21.

AMONG THE PUBLISHERS.

"GENERAL TAYLOR," a biography by Major-General O. O. Howard, U. S. A., will follow Mahan's "Farragut" in the Great Commander Series published by D. Appleton & Co. General Howard has visited the scenes of Taylor's campaigns in Mexico, and his book will be found to be an authority for those who are interested in the military history of our country. This biography contains a portrait and several maps.

—Macmillan & Co. announce the publication of a new work on the heavens and their origin, under the title of "The Visible Universe," by J. Ellard Gore, F.R.A.S., the author of "Star Groups," etc. The book is a discussion of the theories which have been advanced from time to time as to the construction of the heavens, celestial chemistry, stellar distances and motions, etc., and is illustrated by stellar photographs and lithographic plates.

—The January *St. Nicholas* will contain the opening paper in a series that magazine is to print on leading American cities, illustrated. In this article Colonel T. W. Higginson describes Boston in a way to interest boys and girls in the literary history of that city. For future numbers of *St. Nicholas*, Dr. Lyman Abbott will write of Brooklyn, Edmund Clarence Stedman will describe New York, and other famous residents of the different cities will describe them.

—"Electric Light Cables and the Distribution of Electricity," by Stuart A. Russell, is the latest volume in the Specialists' Series (London, Whittaker & Co.; New York, Macmillan). The recent extension of electric lighting from large central stations has brought to the front many problems connected with the economical distribution of electricity over large areas; and to the discussion and elucidation of these problems this volume is devoted. In its 319 pages the author presents a clear, reasonably comprehensive, and fully illustrated description of the various systems of distribution and types of conductor now in use, and suggests the directions in which future improvements will be made. Price, $2.25.

—The Appalachian Mountain Club has just published a second work, with the title, "The Land of the Cliff-Dwellers," from the pen of Mr. Frederick H. Chapin. The region to which the reader