

rived, the latter of which would give the Latinized forms *tac* or *tarq*.

In conclusion, I would submit the following as the results of this inquiry :

1. The uniform testimony of the ancient writers and of their own traditions asserts that the Etruscans came across the sea from the south and established their first settlement on Italian soil near Tarquinii ; this historic testimony is corroborated by the preponderance of archæologic evidence as yet brought forward.

2. Physically the Etruscans were a people of lofty stature, of the blonde type, with dolichocephalic heads. In these traits they corresponded precisely with the blonde type of the ancient Libyans, represented by the modern Berbers and the Guanches, the only blonde people to the south.

3. In the position assigned to woman and in the system of federal government the Etruscans were totally different from the Greeks, Orientals and Turanians ; but were in entire accord with the Libyans.

4. The phonetics, grammatical plan, vocabulary, numerals and proper names of the Etruscan tongue present many and close analogies with the Libyan dialects, ancient and modern.

5. Linguistic science, therefore, concurs with tradition, archæology, sociologic traits and anthropologic evidence, in assigning a genetic relationship of the Etruscans to the Libyan family.

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*Stated Meeting, October 18, 1889.*

Present, 20 members.

Vice-President, Dr. RUSCHENBERGER, in the Chair.

Correspondence was submitted as follows, viz. :

A letter from Bureau of Statistics of Labor, Commonwealth of Massachusetts, offering its publications to the Society and requesting exchanges, which was so ordered.

A letter from the Commissioner of Public Records of Parishes, Towns and Counties of Massachusetts, in reference to records reported as missing.



A letter from the Geological Survey of Missouri requesting exchanges, which on motion was so ordered.

Letters of acknowledgment were received from the Deutsche Geologische Gesellschaft, Berlin (127); Academie Royale des Sciences, Lisbon (Transactions, xvi, 1; Proceedings, 128); Phillips Academy, Andover, Mass. (Transactions [N. S.], i-xv, xvi, 1; Proceedings, 96-110; Catalogue, Parts i-iv); Rev. J. A. Murray, Carlisle, Pa. (128).

Acknowledgments for 129: Prof. Serge Nikitin, St. Petersburg; Prof. Peter R. von Tunner, Leoben, Austria; K. K. Central Anstalt für Meteorologie und Erdmagnetismus, Dr. A. Brezina, Vienna; Deutsche Geologische Gesellschaft, K. P. Meteorologische Institut, "Naturwissenschaftliche Wochenschrift," Berlin; Verein für Erdkunde, Dresden; Vogtländische Altertumsforschende Verein, Hohenleuben; Verein für Thüringische Geschichte und Alterthumskunde, Jena; Verein für Naturkunde, Offenbach a. Main; Dr. Carl August Dohrn, Stettin; R. Comitato Geologico, Rome; Prof. Abel Hovelacque, Paris; Prof. Lucien Adam, Rennes, France; Royal Dublin Society; Royal Society of Edinburgh; University Library, Prof. J. P. Postgate, Cambridge, Eng.; Society of Antiquaries, Mr. C. Juhlin Dannfelt, Sir James Paget, London; Literary and Philosophical Society, Manchester; Sir Henry W. Acland, Prof. J. J. Sylvester, Oxford; Dr. Alfred R. Selwyn, Ottawa, Canada; Rev. J. A. Murray, Carlisle, Pa.; Dr. D. G. Brinton, Media; Messrs. Samuel Castner, Jr., Edwin J. Houston, George Stuart, Philadelphia; Elisha Mitchell Scientific Society, Chapel Hill, N. C.; Mr. Everard F. im Thurn, Georgetown, British Guiana.

Letters of envoy were received from the K. P. Akademie der Wissenschaften, Berlin; Citizens' Committee of the Constitutional Centennial Celebration, Philadelphia.

Accessions to the Library were announced from the R. Geological Society of Australia (N. S. W. Branch), Sydney; K. K. Geologische Reichsanstalt, Vienna; K. Akademie der Wissenschaften, Berlin; Neues Archiv für Sächsische Geschichte und Alterthumskunde, Dresden; Prof. E. Renevier, Lausanne;



R. Academia de Ciencias, etc., Madrid; University Library, Cambridge, Eng.; Editors of "Nature," London; Mr. W. E. A. Axon, Manchester, Eng.; Citizens' Committee of the Constitutional Centennial Celebration, Editors of the "Medical News," Commissioners for the Erection of the Public Buildings, Messrs. Clarence H. Clark, Henry Phillips, Jr., MacCalla & Co., Philadelphia; Commissioner of Labor, Washington, D. C.; State Historical Society, Madison, Wis.; Lick Observatory, Sacramento, Cal.

The Special Committee on the paper by Charles R. Keyes reported progress and was continued.

The stated business of the meeting was then taken up, and pending nominations Nos. 1184, 1188, 1189, 1190, 1191, 1192, and 1193 were read, spoken to and balloted upon.

Prof. Daniel G. Brinton read a paper on "The Ethnologic Affinities of the Ancient Etruscans."

Prof. John A. Ryder read a paper on the "Proofs of the Effects of Habitual Use in the Modification of an Animal Organization," upon which some remarks were made by Prof. Cope, Dr. Allen and Dr. Horn.

Dr. Horn made the following remarks:

The mention of *Scarabæus* (*Ateuchus*) *sacer* by Prof. Ryder brings forward several species in our own fauna. *Deltochilum gibbosum* has no anterior tarsi in either sex, and, like the *sacer*, might be used as an evidence of the persistence of a character gradually acquired through repeated mutilation, that is, a loss of the tarsus by the digging which these insects perform. On the other hand, the numerous species of *Phanæus* do quite as much digging and the anterior tarsi of the male only are wanting. It is true that many females are seen which have lost their anterior tarsi by digging; have, in fact, worn them off; but in recently developed specimens the front tarsi are always absent in the males and present in the females. If repeated mutilation has resulted in the entire disappearance of the tarsi in one fossorial insect, it is reasonable to infer that the same results should follow in a related insect in both sexes, if at all, and not in the male only. It is evident that some other cause than inherited mutilation must be sought for to explain the loss of the tarsi in these insects.

Prof. Edwin J. Houston made the following oral communication upon "Crystal-Studded Hail Stones:"

The hail storm which occurred at Philadelphia, near sunset, on October



1, 1889, presented some peculiarities which the author desires to place on record.

The storm was heralded by the usual bands of dark clouds and a high wind velocity. A fall of rain was followed by a copious fall of hail. The storm was of short duration and was rapidly followed by a clear sky.

An examination of a number of hail stones which fell on a grass plot in the northern section of the city showed the following peculiarities, viz.:

(1) Most of the larger stones examined were nearly spherical in shape, with only a slight tendency to an oblately spheroidal shape. Some of them varied in diameter from an inch to an inch and a quarter.

(2) The smaller stones were, on the contrary, so markedly oblately spheroidal as to closely approach in many instances the shape of flat discs.

(3) Cross sections of the stones showed the usual concentric layers of alternate opaque and transparent ice.

(4) The nucleus of the stones examined was of opaque ice.

(5) The outer layer of nearly all the stones, and without exception of all the larger stones, was of opaque ice.

These peculiarities are common to nearly all hail stones, and are only referred to in connection with a peculiarity I have never before noticed in hail stones, nor have I ever seen the same referred to in the literature of the subject.

On the outer surface of a number of the larger stones examined, well-marked crystals of clear transparent ice projected in some instances for a full quarter of an inch. These crystals, as well as I could determine from the perishable nature of the material, were six-sided prisms with clearly cut facets, and well-marked terminal faces. The crystals projected from the surface of the stone in the direction of their greatest length. They closely resembled the crystals so common in geodes where the mineral matters are slowly deposited from the mother liquor.

The size and transparency of the crystals, and the well-defined character of their edges and faces, indicated their formation under conditions favorable to crystalline growth, among the most essential of which are time, and comparative freedom from motion during formation.

It would appear, therefore, that the stones must have been in a condition of actual or comparative rest in a mass of vapor-saturated air for a short interval of time after their formation, and immediately before their fall to the earth.

The conditions of rapid motion so usually assumed in the generally accepted theories for the formation of hail are so opposed to such a rest of the hail stones, that the condition of rest in the stones appears to be improbable, unless such theories be considerably modified.

It has been suggested, however, that an actual rapid motion of the stone, while surrounded by an accompanying mass of vapor-laden air, would place the stone in a position of relative rest as regards the air, and so give the crystals the opportunity required for growth.

Whatever meteorological conditions may have existed during the forma-



tion of these crystal-studded hail stones, are apparently unusual, since such stones are far from common.

I have called attention to the phenomena, not for the purpose of suggesting any explanation for the formation of these peculiar stones, but merely to place on record an observed fact.

After all the other business of the meeting had been disposed of, the ballot-box was opened by the Secretaries and the votes being counted the result of the poll was reported to the presiding member, who declared the following to have been duly elected members of the Society, viz.:

No. 2160. Walter J. Hoffman, Washington, D. C.

No. 2161. J. W. Powell, Washington, D. C.

No. 2162. G. Brown Goode, Washington, D. C.

No. 2163. Lyon G. Tyler, Williamsburg, Va.

No. 2164. James B. Angell, Ann Arbor, Mich.

No. 2165. Henry Hazlehurst, Philadelphia.

No. 2166. David K. Tuttle, Philadelphia.

And the Society was adjourned by the presiding member.

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*Stated Meeting, November 1, 1889.*

Present, 14 members.

Dr. RUSCHENBERGER in the Chair.

Mr. Henry Hazlehurst, a newly elected member, was presented to the Chair and took his seat.

Correspondence was submitted as follows:

Letters accepting membership in the Society were read from No. 2160, Dr. Walter J. Hoffman, Washington, D. C., October 24, 1889.

No. 2161, Major J. W. Powell, Washington, D. C., October 21, 1889.

No. 2162, George Brown Goode, Washington, D. C., October 22, 1889.



1889. "Stated Meeting, October 18, 1889." *Proceedings of the American Philosophical Society held at Philadelphia for promoting useful knowledge* 26(130), 527–531.

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