of the head is attained before the full breadth.* In Italy, Dr. Livi has brought together the results of a number of observers from both northern and southern Europe, but all of them from the broad-headed races.† The difference of cephalic index on the average among 447 cases here amounts to one unit in favor of broad-headedness of the adult, the contrary tendency to that noted for the Americans. That age brings a relative increase in the breadth of the head was also apparently indicated by the few measurements made by Welcker.‡ For Bohemia, Dr. Matiegka, from measurements on 400 children, asserted that there is no tendency toward a change in the relative length and breadth in the cases observed by him.§ Dr. Boas finds that in the North American Indians age is characterized by a relative increase in the length.||

On the whole, summarizing the results and opinions of these various writers, whose conclusions are, on the whole, contrary to our American ones, it appears that no universal rule can be established with respect to the effect of age upon the proportions of the head. The only hypothesis which seems to be confirmed by all this evidence is that development brings an approximation to the racial type most clearly marked in the adult. In other words, in the narrow-headed races, like our own, the children are broader-headed than the adults. Among the brachy-cephalic races, such as those instanced by Dr. Livi and most of the others cited, the children exhibit the race peculiarity in a less marked degree, that is, they are relatively narrower headed than at maturity. Finally the change from childhood to maturity becomes *nil* where the adults themselves belong to a group with a cephalic index near the mean for the entire European race. No relation can be established between the intelligence and the proportions of the head so far as the experience of European study goes, although Krause and Virchow declare in favor of the broad-headed type. If this hypothesis be true that age brings the fuller development of the race type, it may be possible in the future to apply a correction to the comparative results obtained by students of anthropology whose results are drawn from the study of children. But until that time the inferences to be drawn from such study are as likely to be erroneous as are conclusions drawn from the study of the color of the hair and eyes of school children, since in both cases maturity brings a change which has not as yet been statistically measured. It is earnestly hoped that further study along this line may be undertaken. The testimony of expert psychologists would be also of interest as bearing upon this point. In the hope of stimulating some such investigations, the modest results obtained from this study at the Institute of Technology are submitted.

W. Z. RIPLEY.

* Uber die Urform des Menschlichen Schädels, in report of Congres Int. d'Anth. et d'Archæologie, Paris, 1867.

† 'L 'Indice Cefalico degli Italiani,' Florence, 1886, p. 15.

‡ Archiv. für Anthropologie, I., p. 151.

§ Mitt. der Anth. Gesell. in Wien, XXII., 1892, Sitzungsberichten, p. 81.

|| Verh. der Berliner Gesell. fur Anth., Sitz ber. May 18, 1895, p. 392.

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*IS THE PUMPKIN AN AMERICAN PLANT?**

IN the Index Kewensis seventeen species of the genus Cucurbita are recognized and their distribution given as follows:

C. bononiensis.	Hab.?	*C. maxima.*	As. trop. Orb. trop. cult.
C. californica.	Am. bor. occ		
C. ciceraria.	Chili.	*C. medullaris.*	Hab.
C. digitata.	N. Mexic.	*C. melanæformis.*	Japon.
C. ficifolia.	As. or.	*C. moschata.*	As. trop.
C. fœtidissima.	Mexic.	*C. palmata.*	Calif.
C. Galeottii.	Mexic.	*C. Pepo.*	Oriens. Afr. trop.
C. hieroglyphica.	Hab.?	*C. purpurea.*	Java.
C. lignosa.	Am. autr.	*C. radicans.*	Mexic.

* Substance of a lecture before University Archeological Association, Feb. 19, 1896.

According to the Index the two most important cultivated forms, *Cucurbita Pepo* and *C. maxima*, are looked upon as being natives of the eastern hemisphere and not of the western. Naudin, who made a careful and painstaking study of the cucurbits, is not so dogmatic. He says:* "De ces six espèces, trois sont alimentaires et cultivées depuis longtemps en Europe: ce sont *C. maxima*, *Pepo* et *moschata*, dont la patrie première est inconnue L'une d'entre elles, le *C. Pepo*, a peut-être été connue des Romains et des Grecs." De Candolle says† in relation to the original home of *Cucurbita maxima*: "Finally, without placing implicit faith in the indigenous character of the plant on the banks of the Niger, based upon the assertion of a single traveller, I still believe that the species is a native of the Old World and introduced into America by Europeans." In connection with this statement, the French botanist reviews the paper of Gray and Trumbull‡ and dissents from their views, because they were not based upon the observations of Naudin concerning the distinction existing between *C. maxima* and *C. Pepo*. The original home of *Cucurbita maxima* and *C. Pepo*, as far as I can discover from a cursory examination of the literature, is still doubtful, the Index Kewensis, however, throwing the weight of its influence towards an eastern origin. De Candolle* believes that *Cucurbita Pepo* is an American plant. He says: "Botanical indications are, therefore, in favor of a Mexican or Texan origin." "Thus historical data do not gainsay the opinion of an American origin, but neither do they adduce anything in support of it."

* Naudin, *Annales des Sciences Naturelles*, 4 Ser. VI., 15 ff.

†1885, De Candolle, *Origin of Cultivated Plants*, p. 253.

‡1883. Gray and Trumbull, *American Journal of Science*, p. 372.

According to Nuttall,* the Indians along the whole upper Missouri half a century ago were cultivating *C. verrucosa*. This common squash is according to Naudin a variety of *C. Pepo*, as is also *C. aurantia* (the *C. Texana* or *C. ovifera* of Gray), which has every appearance of being indigenous in the western part of Texas, on the Rio Colorado and upper tributaries. At least, this is the opinion of Mr. Lindheimer and Mr. Charles Wright, two good judges.

In looking over the plant materials collected in the undoubted prehistoric cliff dwellings of the Mancos Cañon, Colorado, and in identifying the vegetal specimens, as far as the material permitted, I became much interested in the seeds of some cucurbitaceous plant, which looked familiarly like those of the pumpkin. I was not satisfied, however, of this until I had made a somewhat detailed histological study. This was the more necessary, because the utmost confusion seems to reign as to the specific limits of several of the more interesting cultivated forms. There is not a group of plants the synonymy of which is more confused than that of the Cucurbits. Harz† and Borbas ‡ give somewhat detailed descriptions of the anatomy of the seeds of *Cucurbita maxima* and *Pepo*, the former from an agricultural standpoint, the latter from a botanical. On comparing the seeds found in the cliff dwelling exhibit with the descriptions of both investigators, it was found that in every respect the seeds were those of the pumpkin *Cucurbita Pepo*. Space will not permit a detailed account of this investigation, but the results obtained indisputably prove that the pumpkin is a native of America. It is fortunate that the seeds were obtained from the ruins

* Gray, *Scientific Papers*, I., p. 85.

† 1885, Harz, *Landwirthschaftliche Samenkunde*, p. 795, 811.

‡ 1880, Borbas Vincze, *Földmüvelesi Erde Keink*, No. 52, quoted in *Botanische Centralblatt*, VIII. (?)

of a people who had no contact with Europeans, but who were undoubtedly pre-Columbian. Nor does the evidence of the American origin of the pumpkin solely rest upon the seeds discovered. A whole fruit with the stem intact is incorporated in the collection. Beside the fruit, we have the strongly ribbed stems of the fruit used by the cliff dwellers as stoppers for bottles. According to the distinction made by Naudin, the stem of *C. maxima* is smooth; that of *C. Pepo* is strongly fluted and roughly corrugated. So much for botanical evidence.

That the pumpkin is indigenous is shown also by the descriptions of the early explorers and settlers, and by the fact that gourds and pumpkins were used for a great many different purposes in America. This argues for an American origin, because it takes time for a people to learn new uses of a plant, which formerly may have served only one or two purposes. For example, among the cliff-dwelling Indians gourds, using the word in a general sense, were used for bottles, as receptacles to hold feathers and cotton down used in spinning. The stems were preserved and used as stoppers. The narrow neck of the gourd dipper, if accidentally broken off, was saved and used to hold the ceremonial pollen of maize or of the tule. The larger fruits were first dried, the interior cleaned out, and were then used as water pails or as receptacles in which to store corn (*Zea mays*), beans (*Phaseolus vulgaris*) and grass seeds. Mr. Cushing describes* the gourd water bucket of the Zuni as supported by wicker work composed of fibrous yucca leaves. These are a few of the many uses to which gourds were put before the advent of the white man.

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* 1882-83, CUSHING, *Report Bureau of Ethnology*, p. 483.

AWARD AND PRESENTATION OF THE RUMFORD PREMIUM.

IN conformity with the terms of the gift of Benjamin, Count Rumford, granting a certain fund to the American Academy of Arts and Sciences, the Academy is empowered to make, at any annual meeting, an award of a gold and silver medal, being together of the intrinsic value of three hundred dollars, as a premium to the author of an important discovery or useful improvement in light or in heat, which shall have been made and published by printing, or in any way made known to the public, in any part of the continent of America, or any of the American Islands: preference being always given to such discoveries as shall, in the opinion of the Academy, tend most to promote the good of mankind.

At the annual meeting of 1895 the Academy awarded the premium to Thomas Alva Edison for his investigations in electric lighting, and the presentation of the medals took place at the meeting of the 13th of May, 1896.

Vice-President Goodale, in presenting the medals, made the following remarks:

It would be highly presumptuous for one whose knowledge of physics is of the most elementary character to occupy the time of the Academy by any statement of his own in conveying these medals. Happily such a course is unnecessary. The Chairman of the Rumford Committee has placed at our command a brief statement which makes clear the ground of the award:

"The Rumford Committee voted, June 22, 1893, that it is desirable to award the Rumford medal to Thomas Alva Edison in recognition of his investigation in the field of electric lighting, and they confirmed this vote on October 9, 1893, in the following words: 'Voted for the second time to recommend to the Academy that the Rumford medal be awarded to Thomas Alva