

I considered both of these cases the result of eating poisonous dried beef; although not quite so severe as the cases of the Ewing family. The young man soon recovered and in a day or so was all right; but Mrs. M. was several days regaining her health, and in fact is still (at the writing of this report) troubled more or less with gastro-intestinal irritation.

I regret very much my inability to procure specimens of this meat.

*Remarks.*—That the ptomaines or cadaveric alkaloids were the cause of the illness in the above cases is without a question in the case of the Ewing family, and scarcely without a doubt in the last two cases. That there is a poisonous alkaloid which is liable to form in meat, under certain circumstances, has been established without a doubt; but the question of chief importance to the public in general is, when, and under what circumstances, these poisonous ptomaines may and do form, and how to prevent their formation.

When it is remembered that these poisonous alkaloids were first discovered by Selmi in exhumed corpses, the key to the mystery is at our command; chemistry has unlocked the door that led to their once mysterious approach, and has shown their presence to be synchronous with the decomposition of meat of any kind. This being the fact, all tainted meat, from whatever source, should be strenuously avoided; the "shop soured" meat that has spent days on the counter, or in the ice chest, should be shunned, even when cooked and canned, or when made into bologna sausage, or pudding meat, or salted or dried; for it must be remembered that no amount of cooking or curing will remove these poisonous ptomaines from meat in which they have once formed. They are not like the trichina spiralis, or the cysticercus, which can easily be destroyed by thorough cooking.

The commercial process of canning meat in our large cities or packing houses, is another source of these ptomaines; the rapid and slipshod methods resorted to by the most of these houses, by which meat is turned out upon the market in a few days as cured (but which, in reality, has not been cured sufficiently to prevent its decomposition, and as a result the formation of these poisonous alkaloids), should not only be shunned, but these "near cut" and imperfect methods of curing condemned; and no process of curing and packing meat should be permitted that does not insure the most perfect preserving of the same; and no meat should be put through any preservative process of any kind that is not perfectly healthy, "sweet meat" to begin with, that is not absolutely free from any taint or decomposition.

The detestable habit of working up beeves that have been killed by railway accidents, and have not been bled or dressed for days after being killed, and the wholesale slaughter of "bony old cows" and "unborn calves" and placing them on the market for food, is a disgrace to any country.

## MEASUREMENTS FROM SKULLS OF THE SEVENTH CENTURY.

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During a recent visit to Jerusalem, Palestine, I had an opportunity to examine and take the measurements of a large and rare collection of human skulls, which are stored away in the old monastery of Mar Saba, a distance of three hours' horseback ride down the Kedron Valley, midway between Jerusalem and the Dead Sea. The results of this examination are such as are believed to be of interest, and for this reason I am led to publish them.

These skulls are said to be those of the early Christian monks, who in the fifth and sixth centuries lived in great numbers along this Kedron Valley, as far down as the Dead Sea, and also in and about Jerusalem, who in 614 were massacred by the Persians, when they invaded Syria and Palestine under their leader Chosroes. They are, therefore, Caucasian skulls, and probably those of the ancient Greeks and Romans, which were gathered up and stored here to the number (they say) of 10,000. Such being the size and antiquity of this collection, it can hardly fail of being a valuable one. The great traveler and writer, H. B. Tristram, once on looking at it said: "It is certainly a collection the Anthropological Society might envy, and out of which they might select as many types as it suited their fancy to create."

The measurements which I will give are the only ones, so far as I have been able to ascertain, that have ever been taken of any of these skulls. Omitting as far as possible anatomical terms, the five measurements which I took are as follows:

1. The *horizontal circumference*; learned by measuring with a tape the distance from the middle of the lower part of the forehead around the largest part of the occiput to the starting-point.
2. The *naso-occipital length*, or the distance from just above the root of the nose, back over the top of the head to the external occipital protuberance.
3. The *height*, or the vertical distance from the opening of the ear to the level of the centre of the top of the head.
4. The *width*, or the greatest distance through the head from side to side above the level of the cheek bones.
5. The *cranial capacity*, learned by closing the little openings at the base of the skull, then filling its interior with mustard seeds, which are then poured out and measured in a graduated vessel.

Of the ninety-one skulls which I measured, the largest one gave a horizontal circumference of 22.45 inches (570 millimetres), which is  $\frac{3}{4}$  of an inch above the average for all races. This same skull gave a cranial capacity of 113.6 cubic inches, which is 28.6 cubic inches greater than the average for all races, and 18.1 greater than the average for the Caucasian race (whose cranial capacity exceeds all other races), and but 4.4 cubic inches less than the capacity of Cuvier's skull—the largest on record. Its width was also the greatest, being 6.38 inches (162 mm.).

Its naso-occipital length, 13.39 inches (340 mm.), was reached by but one other, and its height was 4.72 inches (120 mm.).

The smallest of the ninety-one skulls gave the smallest horizontal circumference 18.91 inches (480 mm), and a cranial capacity of 76.6 cubic inches, which is 18.9 cu. in. less than the average Caucasian capacity. Its height was the lowest, being 3.97 inches (101 mm.), its width 5.27 inches (134 mm.), and its naso-occipital length 11.42 inches (290 mm.). All the portions of this brain had been very small.

The one giving the greatest height, 5.2 inches (132 mm.), gave a horizontal circumference of 20.68 inches (525 mm.), width 5.63 inches (143 mm.), and naso-occipital length of 11.85 inches (301 mm.).

The one giving the least width, 4.72 inches (120 mm.), gave a horizontal circumference of 20.48 inches (520 mm.), a naso-occipital length of 12.21 inches (310 mm.), and height of 4.45 inches (113 mm.), being narrow and low, but long from before backwards.

The one giving the shortest naso-occipital length, 8.94 inches (227 mm.), gave a horizontal circumference of 19.7 inches (500 mm.), height 4.37 inches (111 mm.), and width of 4.92 inches (125 mm.).

The average measurements of the ninety-one skulls are found to be as follows:

Average horizontal circum.....	19.98 in. (507.2 mm.).
“ height .....	4.51 in. (114.5 mm.).
“ width.....	5.57 in. (141.4 mm.).
“ naso-occipital length.....	11.84 in. (300.6 mm.).

The average cranial capacity of the nineteen whose capacities were measured was 91.8 cubic inches.

Comparing the average measurements of these skulls with the *present* average measurements of skulls of the same race (the Caucasian), and if the above measurements are taken as the average of the race at that time (and persons of their rank at that time should have skulls above rather than below the average), it follows:

1. That ours, the Caucasian skull, has, during the past thirteen or fourteen centuries, increased in horizontal circumference 1.72 inches, and to a less extent in height, and not at all in width, and has gained in cranial capacity 3.7 cubic inches.

2. From the fact that our skulls have not gained in width, it follows that this gain in capacity of 3.7 cu. in. is due to increase in their height and length, which, bearing in mind the plan of development of the brain, implies an increase in size of the upper and the anterior parts of the brain—the exact parts which, on *a priori* grounds, we should expect to increase by education and civilization, since these parts of the brain specially preside over the moral and intellectual functions.

3. The lower portions of the brain, being the parts which specially preside over the selfish propensities, or the so-called inferior functions, and which give breadth to the head, being called into activity less as education and civilization advance, have failed to grow as rapidly as other and more exercised portions of the brain; hence the non-increase in width of our skulls.

It need scarcely be said that these were adult

skulls, and probably all males, and that among this large collection numerous abnormalities and peculiarities exist—such as absorption and perforation of both tables of the skull from growth and pressure of the Pacchionian bodies; non union of the two halves of the frontal bone in the usual way, leaving a persistent frontal suture; marked difference in size of the two halves of the skull, the left half usually being the larger; and Wormian bones in different localities. A few presented spots which appear sometime to have been burned, and the knife shows these places to be charred. Many of them yet contain a considerable number of teeth, which were sound at death, but are now brittle because of their great age. Others present fractures at different places, and those which are broken open show internal depressions at points corresponding to external elevations, and *vice versa*, showing that the inside of the skull corresponds in shape to the outside, and that, consequently, the shape of the brain may, as a rule, be determined by the shape of the head, as certainly as the shape of a tree may be known by the shape of the bark which covers it.

#### POISONOUS ARSENICAL WALL-PAPERS.

*Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, January 12, 1887.*

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In the presence of so many chemical experts and learned general practitioners, it would be presumptuous in me to treat this subject systematically or exhaustively. Moreover, my purpose in opening this discussion is to present, by fresh instances, to the public and profession, the dangers to which every citizen of this commonwealth is exposed by the manufacture and sale of papers for our walls, so charged with arsenic as to produce characteristic symptoms of the poisoning by that mineral in the persons occupying the rooms thus papered. The Legislature of this State, last winter failed to pass a bill prohibiting the use of arsenic in the coloring of wall-papers, so that the only means by which we can save ourselves from this poison, is to disseminate so full an appreciation of our danger throughout the community as to cause every individual to protect himself and his family. This end can only be attained by the publication, by every one who has suffered, of the exact circumstances attending his experience, together with the names of the dealers retailing the papers and the chemists who have analyzed them. This I shall aim to do without animosity to any individual, but with the single purpose of making every one feel more keenly than they now appear to do, the responsibility for the lives and health of our wives, our children, and our families.

In September, 1885, Messrs. J. F. Bumstead & Co. put upon my nursery and one sleeping-room new papers, which they assured me had been analyzed and pronounced free from arsenic. In the nursery slept a boy of 4 years and a nurse, in the chamber slept a girl of 13, in a third room, not then