

1. The papers and slides for the competition should be forwarded to Elmira in time to reach there before the day of the beginning of the next annual meeting, and should be addressed:

To the President of

THE AMERICAN SOCIETY OF MICROSCOPISTS,

Care of the Elmira Microscopical Society, Elmira, N. Y.

2. The envelopes should bear in their upper left-hand corner one of the enclosed labels, with some appropriate name or device other than the name of the author. The slides should bear the same label similarly marked (ten labels are sent with each circular).

3. Each paper should be accompanied by a sealed envelope bearing the same label and device, containing a slip with the name of the author.

4. The committee will be appointed on the first day of the Elmira meeting, and the papers and slides put into their hands. When they reach a decision, they will make a public report, stating the name or device of the successful paper. The sealed envelope bearing the same will then be opened by the President, who will announce the name of the successful author.

Persons not now members, but who shall become so at the Elmira meeting, are eligible as competitors for this prize, and can obtain the necessary labels by making application to the Secretary.

It is hoped that several papers will be received in competition for this prize which shall be found worthy of publication in the Transactions, though only one, of course, can receive the prize. The envelopes containing the names of unsuccessful competitors will not be opened except by permission of the authors, but will be destroyed by a committee appointed for that purpose.

Dr. George E. Blackham, the present President of the Society, has issued a stirring address to the members, and makes some excellent suggestions to those who would by their personal acting promote the success of the society.

Professor D. S. Kellicott of 119 Fourteenth Street, Buffalo, N. Y., is the Secretary of the Society.

FOSSIL POLYZOA—NOMENCLATURE.

In the second report of the committee consisting of Prof. P. M. Duncan and Mr. G. R. Vine, appointed for the purpose of reporting on Fossil Polyzoa, for the British Association, the order is divided into three subdivisions.—

1. *Cheilostoma*, Bark. = *Celleporina*, Ehrenberg.

2. *Cyclostomata*, „ = *Tabuliporina*, Milne-Ed., Hagenow, Johnston.

3. *Ctenostomata*, „

The following terms are used in this Report in describing the genera:—

ZOARIUM.—“The composite structure formed by repeated gemmation” = Polyzoarium and Polypidom of authors.

ZOÆCIUM or cell.—“The chamber in which the Polypide is lodged.

CENÆCIUM.—“The common dermal system of a colony.” Applicable alike to the “Fronde,” or “Polyzoary,” of *Fenestella*, *Polypora*, *Phyllopora*, or *Synocladia*: or to the associated *Zoæcia* and their connecting “interstitial tubuli,” of *Ceripora*, *Hyphasmapora*, and *Archæopora*, or species allied to these.

FENESTRULÆ.—The square, oblong, or partially rounded openings in the zoarium—connected by non-cellular dissepiments—of *Fenestella*, *Polypora*, and species allied to these.

FENESTRÆ applied to similar openings, whenever connected by the general substance of the zoarium—as in *Phyllopora*, *Clathropora*, and the Permian *Synocladia*.

BRANCHES.—The CELL-bearing portions of the zoarium of *Glauconome*, *Fenestella*, *Polypora*, or *Synocladia*; or the offshoots from the main stem of any species.

GONÆCIUM.—“A modified zoæcium or cell, set apart for the purposes of reproduction.”

GONOCYST.—“An inflation of the surface of the zoarium in which the embryos are developed.” Modern terms from the Rev. Thos. Hincks.

“PRESERVED VEGETABLES.”

By OTTO HEHNER, F. I. C., F. C. S.

When some time ago public attention was forcibly drawn to the occasional injurious effects of preserved “canned” goods, I undertook a lengthy series of chemical and physiological experiments to ascertain the cause of such poisonous action. The results having so far only been communicated to professional chemists (*The Analyst*, vol. v., No. 57), I hope you will allow me, by way of affirmation of the paragraph in *The Lancet* of September 24, to give a short summary of them, as I think they may be of interest, and of some degree of importance, to medical readers.

Very frequently the gastric disturbances traceable to the consumption of preserved articles of food have been assigned to traces of lead dissolved from the solder with which the tins are closed, or present as impurity in the metal with which the can is lined. Now, although the occasional though very rare presence of lead in such articles cannot be denied, the effects should be attributed to the tin itself. Tin, even perfectly pure, is far more readily attacked by food matters than is commonly supposed; it is to be found in comparatively large amounts in an overwhelming majority of canned goods, irrespective of the nature of the same. Acid fruits, such as peaches or cherries, corrode the tins to an appalling extent; but even meats, nay, condensed milk, dissolve and become contaminated with serious quantities of the metal.

I base my observations upon the examination of the following foods:—Vegetable: French asparagus, American asparagus, peas, tomatoes, peaches (three different brands), pine apple (two kinds), white and red cherries, and marmalade. Animal: Corned beef (five brands), ox cheek, ox tongue (three kinds), collared head, tripe, oysters, sardines in oil, salmon, salmon cutlets, lobster, shrimps, curried fowl (two kinds), boiled rabbit, boiled mutton, roast chicken, roast turkey, ox cheek soup, gravy soup, sausages, condensed milk (three brands).

With the exception of the sausages, the whole of the samples contained more or less tin, many to such an extent that abundant reactions could be obtained from two or three grammes of the vegetable substances; whilst of the animal foods one of the soups contained thirty-five milligrammes, one of the condensed milks eight milligrammes, and oysters forty-five milligrammes of tin to the pound.

Pure tin is readily attacked even by carbonic acid in solution, all samples of soda-water or of other aerated beverages which I have tested giving distinct tin reactions. Aerated beverages are generally stated to be liable to lead contamination, but seeing that lead does not enter into the composition of any of the pipes or vessels of the machines made by modern manufacturers, I do not doubt but that the black coloration produced by sulphuretted hydrogen in the beverage in question has usually been erroneously attributed to lead, and is in reality due to tin. Tin, in fact, prevents the lead passing into solution; it completely precipitates the metal from lead solutions, an equivalent quantity of tin being taken up.

The question arises, is tin, when taken into the system, injurious to health or not? Forensic literature does not furnish a positive or satisfactory reply, but the following experiments appear to me completely to settle the point.

A half-grown guinea-pig took with its ordinary food seventy-five milligrammes of pure stannous hydrate in

two doses of twenty-five and fifty milligrammes each. Death resulted under symptoms of irritant poisoning. Tin was detected in large amount in the fæces and in the viscera, notably the liver.

Another similar animal took within three days, in six doses 450 milligrammes of *stannic* hydrate, *without* serious effect, tin appearing abundantly in the excrements. Accustomed in a manner to stannic salts, it quickly succumbed to fifty milligrammes of stannous hydrate.

It plainly follows that while stannic compounds are not injurious in the doses given, tin in the stannous condition is a virulent irritant poison.

These experiments lead me most strongly to support your demand for a better method of packing preserved food matters than in tin canisters. Tin invariably dissolves in the stannous condition in such solvents as occur in vegetable or animal substances, and the amount of oxygen in the sealed canisters being very minute, oxidation cannot render the metal comparatively unobjectionable.

I trust that the medical profession will object, unmistakably and strongly, to the administration of tin by grocers and oilmen to young and old alike, and, whilst acknowledging the enormous benefits conferred upon the masses by the introduction of preserved foods, will insist that the present system of packing be speedily abandoned.—*Lancet*.

CORRESPONDENCE.

To the Editor of "SCIENCE."

DEAR SIR: I have carefully read your article on "The Warner Astronomical Prizes," published in *SCIENCE*, of Sept. 24, wherein myself and Mr. Warner, are severely and unjustly criticised. In a former number you had criticised one of the conditions of the prize: viz, that "the comet must be telescopic and unexpected," saying that a person might discover a comet by the aid of an opera glass. But what, I ask, is an opera glass but a telescope. In order to defend myself from even the semblance of crookedness, allow me to state a few facts, familiarity with which would, doubtless, have kept you from error. When the great comet (known as comet B) made its appearance so suddenly, all familiar with the conditions of the award, conceded that no just demand on Mr. Warner could be made, as it was neither telescopic nor unexpected, but very many people, not conversant with the conditions, and supposing that it applied to all comets, began to send in claims for discovery. Then Mr. Warner said, inasmuch as the comet was such a large and brilliant one, and that so many seemed not to have understood the conditions imposed, he would offer a *special* prize of \$200 to the one whom I, after an examination of claims, should decide had first seen it. It is a point of no little significance, to remember that this in no sense was to be considered as the Warner-prize proper to be adjudicated upon by Profs. Hall and Young, *in the event of a controversy*, but was distinctly stated to be a *special* prize. The conditions of the original prize were neither in this, nor any other instance, to be deviated from. From a misconception of this vital point, which, under the circumstances, was, perhaps, natural, you have endeavored to make your readers believe that Mr. Warner took—wrongfully and unjustly—the matter out of the hands of Profs. Hall and Young, and placed it in my own, but you are grievously in error. I do not purpose to burden your columns with the reasons for not awarding the prize for comet B. Not an astronomer in the world, with all those letters before him, would have awarded it.

You make the task of deciding the question a very easy

one, and so might I have found it by placing myself in the position of a judge, who must decide according to the evidence, true or false. Instead of condensing the letters to a half dozen, as you suggest, I could have reduced them to a single one, for one of the claimants solemnly declared that he saw it a year ago last August, and that he had watched it ever since, while another averred that he discovered it last January, and several claimed it before its discovery in South Africa, and some of these statements were sworn to at that.

Every astronomer knows that the comet (which was discovered in South Africa on May 21), in its northward journey, passed the sun, 8° west of it, at noon on the 19th of June, and, therefore, after its disappearance in the southern hemisphere, could not have been seen by any person, in any part part of the world, before the morning of the 22d of June, and yet not less than 1000 persons claimed (the statements of many being substantiated by affidavits), that they saw the comet at dates ranging all the way from May 1 to June 20. Was I to accept such statements as those, and accord to them the dignity of evidence, and award the prize for an invisible comet? The comet first became visible to us near the time of the summer solstice, when twilight commenced at about half past two A. M., which rendered even a bright and expected comet very difficult to see until its declination north became at least 15° greater than the sun's. Your assertion that I have awarded myself the prize for the discovery of one comet, is erroneous to the last degree. Where there is but one claimant, as was the case with Swift's, with Schaeberle's, and with Barnard's comets, Mr. Warner, without consultation with any one, pays the prize. Should any dispute arise as to priority of discovery, &c., then, according to the conditions, the matter was to be left to Profs. Hall and Young for a decision.

Again, you do me great injustice in saying that the essays ought not to be filed with me, because I am both a competitor and a judge. I am not a competitor for that prize, nor am I to be a judge. The essays are placed in my hands for safe keeping, and when the first of November arrives, will three astronomers (if as many can be found who are not competitors) be appointed as judges, to whom I shall send the essays for a decision agreeably to condition. 3d. As to who will appoint the judges, I am as ignorant as are you.

Trusting you will give this letter in its entirety, to the public, through the columns of your journal, I remain,

Yours truly,

LEWIS SWIFT.

ROCHESTER, October 10, 1881.

RELATIONS BETWEEN THE CRANIUM AND THE REST OF THE SKELETON.—These relations form the subject of a paper by M. Manouvrier, read at the last meeting of the French Association. The following are the author's conclusions:—

1. The weight of the cranium varies, in a general way, with the weight of the skeleton, but not proportionally, like the weight of the brain.
2. The weight of the skeleton, less the cranium, in a given race, varies nearly in proportion to the weight of the femur.
3. The weight of the cranium is greater relatively to that of the femur, the lighter the latter is.
4. The weight of the cranium is much more considerable relatively to that of the femur in woman than in man.
5. This sexual difference is so pronounced that it constitutes one of the best secondary sexual characters. About 82 women in 100 have the cranium heavier than the two femurs, while 82 men in 100 have it lighter.
6. The lower jaw is heavier relatively to the cranium in the anthropoids than in man, is inferior than in civilized races, in man than in woman, and in the adult than in the child.
7. The weight of the cranium is smaller relatively to that of the lower jaw, the heavier the latter is, etc.