

ELISHA MITCHELL SCIENTIFIC SOCIETY.

At the 135th meeting of the Society on May 4th, the following papers were read:

'Transit Methods for Laying Sewer Grades': Mr. Wm. Cain.

'Acid Crystallization': Mr. Charles Baskerville.

'The Probable Complexity of Thorium': Mr. Chas. Baskerville.

'The Recent Geological Formations of the Mississippi Valley': Mr. J. A. Holmes.

CHAS. BASKERVILLE,
Secretary.

DISCUSSION AND CORRESPONDENCE.

THE LARYNX AS AN INSTRUMENT OF MUSIC.

TO THE EDITOR OF SCIENCE: In this week's number of SCIENCE Professor Joseph Le Conte remarks upon Professor Scripture's description of the mode of action of the vocal chords, and quotes from a work of his own to show that the larynx 'cannot be likened to a stringed instrument nor to a reed-pipe,' continuing, "It is strange that no one has thought to liken it to an ordinary horn; a stage horn, or better, a French horn."

In Helmholtz's 'Tonempfindungen,' of which the first edition was published in 1862, occurs, under the caption, 'Membranöse Zungen,' the following statement: 'Als musikalische Instrumente kommen nur zwei Arten solcher membranöser Zungen in Betracht, nämlich die menschlichen Lippen beim Anblasen der Blechinstrumente und der menschliche Kehlkopf in Gesänge.'

This is the exact comparison suggested by Professor Le Conte. There follows a minute description of the mode of action of the vocal chords, and of the action of the lips in blowing a horn, which has never needed any improvement or correction. Both these cases are, very properly as it seems to me, classified under reed pipes, the sorts of reeds described being of great variety. The model pictured at the head of the section, for the study of membranous reeds, is certainly, as I think will be admitted by anyone who has made one, a very convincing demonstration of the mode of action of the

larynx. Professor Scripture's elastic cushions are certainly to be classified as reeds.

ARTHUR GORDON WEBSTER.

CLARK UNIVERSITY, May 17, 1901.

THE NEW COMET.

TO THE EDITOR OF SCIENCE: In SCIENCE for May 3d, page 717, appears an announcement of the discovery of the new comet, to which is added a section, stating that Professor Frost, of the Yerkes Observatory, had observed the comet on the morning of April 27th, just before sunrise. The last number of the *Astronomical Journal* also contains a similar statement, saying the comet was seen by him 20 minutes before sunrise, half an hour afterwards, and 15° north of the sun.

Here at the Naval Observatory two of the computers, and also I, myself, hunted diligently for the comet, both in the morning and evening, for several days after the receipt of the first telegram, and until we had positive information on the direction of motion.

Now that a set of elements of the comet has been received, it is perfectly clear that whatever Professor Frost sighted on April 27th, it was not the comet. On that day the object was 13° south of the sun, and very close to it in right ascension.

Moreover, as seen from the Yerkes Observatory, it would not rise until about 40 or 45 minutes after the sun, as any one can easily demonstrate by computing the place of the comet for that day, the semi-diurnal arc for it and the sun, for Yerkes Observatory, and take the difference between those two quantities.

GEORGE A. HILL.

NAVAL OBSERVATORY, WASHINGTON,
D. C., May 16, 1901.

THE TEACHING OF PHYSIOLOGY IN THE
PUBLIC SCHOOLS.

ABOUT two years ago I wrote a letter for SCIENCE concerning the text-book in physiology adopted by the State Board and used throughout the public schools of Kansas. Much dissatisfaction has been expressed by the more intelligent teachers of the State, but there is, nevertheless, no redress—the book must be used as a text in every school in the State.

The results may be inferred. I can exemplify them no better than by giving some of the actual answers to questions in physiology by high school candidates who had just been passed in physiology in the grammar grades.

'Pleurisy is a disease of the skin'—'an indication that some nerve has been affected.'

'Alcohol, tobacco and opiates thicken the blood of the nerves.'

'The respiratory center is in the heart.'

'The heart is the center of respiration.'

'Residual air is the air in the heart.'

'The body should be bathed frequent'—'should be bathed at least once a year.'

'Appendicitis and pleurisy is a condition of the throat.'

'The blood is carried to the liver through the right and left auricles.'

'The meatus auditorius is in the intestines'—'is an artery leading from the heart'—'is in the eye'—'is a tube in which the blood passes through before entering the stomach.'

'The patella is a network of small blood vessels'—'is the lining of the abdomen'—'is a tube in the chest'—'is a muscle over the knee.'

'The motores oculi is in the veins'—'is an organ of voice.'

'The mitral valve is at the lower end of the stomach'—'is located in the liver.'

'Excretion is mingling with saliva,' etc., etc.

Such absurdities are by no means rare in the Kansas schools. For several years it was the writer's duty to pass upon the papers in physiology of candidates for the State teachers' certificate, and many answers as ridiculous as any of the above, were observed. Thus: to the question 'Why does the human body cease to grow in stature after about the twenty-fifth year?' the reply was almost invariably, 'Because it has got its full growth.' Four out of fifteen answered the question as to what the lymphatic system is by saying that it is a system of vessels that take up the impurities of the blood and discharge them into the kidneys! It was the rare exception that the papers came up to the standard of a respectable high school.

The worst of it all is that many intelligent people defend such ignorance by saying that

you must not expect teachers in the public schools to be experts in physiology. Is it not time that such 'science' is banished from the public schools? I do not know whether Kansas is an exception in this particular, as it is perhaps in some others, to the other States of the Union. Certain it is, however, that such defects cannot be ascribed to the public school system of the State in general, for I honestly believe that this stands on a higher plane than in a majority of the other States. Is public school physiology everywhere a farce?

S. W. WILLISTON.

SHORTER ARTICLES.

UNILATERAL COLORATION WITH A BILATERAL EFFECT.*

WHILE describing the larval eels or Leptocephali belonging to the United States National Museum two specimens claimed especial attention. Structurally these two specimens are very different and might readily be referred to distinct species. In one the nares are approximated, and the pectorals are well developed, in the other the nasal openings are wide apart and the pectorals have disappeared. The index that pointed to the probability that the two specimens were different stages of the same species is their unique coloration. There are eight large black spots much larger and much more conspicuous than the color markings of any other Leptocephalus. One of these is located over the alimentary canal a short distance in front of the anus. The others are along the side. Each one of these spots is formed by a single enormous chromatophore extending laterally over three or four somites. Sometimes a few minute chromatophores are to be found at the margin of the large one. There are three of these large chromatophores on the left side of the body and four on the right. In each case the spots of one side are arranged at irregular intervals, but in both cases the spots of the one side alternate with the spots of the other side, so that together they form, even in the alcoholic specimens of these transparent

* Contributions from the Zoological Laboratory of the Indiana University, No. 45.