

important parts of an interview with Chief Officer V. E. Spencer are here given.

On Tuesday (October 30) afternoon the weather was clear and bright, although there was little sunshine. Just after one bell, 4.30 o'clock, I saw three meteors fall into the water dead ahead of the ship, one after another at a distance of about five miles. Although it was daylight they left a red streak in the air from zenith to the horizon.

Simultaneously the third engineer shouted to me. I then saw a huge meteorite on the port beam falling in a zigzag manner less than a mile away to the southward. We could distinctly hear the hissing of the water as it touched. It fell with a rocking motion, leaving a broad red streak in its wake. The meteor must have weighed several tons, and appeared to be from 10 to 15 feet in diameter. It was saucer-shaped, which probably accounted for the peculiar rocking motion.

When the mass of metal struck the water the spray and steam rose to a height of at least forty feet, and for a few moments looked like the mouth on a crater. If it had been night the meteor would have illuminated the sea for fifty or sixty miles. The hissing sound, like escaping steam, when it struck the water, was so loud that the Chief Engineer turned out of his berth and came on deck, thinking the sound came from the engine room.

Captain Russ, of the Hamburg-American steamer *Brazilia*, which arrived about the same time as the *St. Andrew*, reported having seen a large meteor at 7 P.M. on October 30, in Lat. 47° N., and Lon. 48° W. This is believed to have been a part of the intermittent meteoric shower observed by the *St. Andrew* earlier in the evening.

In this account, by an intelligent observer, and one presumably fitted by training and profession to observe rapidly, some points of special interest may be noted: the peltoid form, zigzag path, and rocking motion, it being noteworthy that the irregular path was maintained in spite of the very large size (probably overestimated) and great weight; the probably constant general orientation, ("Brustseite"); the brilliant light, though it is not stated whether this came from the meteor or from its track; the loudness of the hissing sound when it struck the water, sufficient to rouse the Chief Engineer a mile away. One is inclined to think that the

meteorites were siderolites. It is, of course, purely conjectural whether the meteor reported by the *Brazilia* belonged to the *St. Andrew* shower; the difference in time would seem to be incompatible with this supposition, which may be put down to a reporter's love of the sensational.

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MUSICAL NOTATION

TO THE EDITOR OF SCIENCE: In the September number of *The Scientific Monthly* Professor E. V. Huntington describes a new way of writing music, which for simplicity and clearness can hardly be surpassed. It consists in using the ordinary staff for the twelve notes of the tempered chromatic scale, instead of (as now done) for the seven notes of the diatonic scale. This new "normalized" notation does away with all sharps and flats. Since there are just twelve lines and spaces (including the added line below) in each staff, each letter will have always the same position on the staff, whether soprano, alto, tenor or bass. It is hoped that teachers will take advantage of the normalized notation to smooth out the road for beginners, particularly in the grade schools.

There is another unnecessary musical difficulty in the way of piano students, which can be easily removed. The pupil must now become familiar with twelve different modes of fingering, one for each of the twelve possible keynotes. This means that for the average pupil so much practise is required in order to become reasonably expert at the piano that he or she becomes discouraged. In any case a great deal of time is wasted in practising the twelve sets of finger exercises.

A very slight change in the keyboard will reduce the sets of fingering from twelve to two. The change consists in having six white keys and six black (instead of seven white and five black) in each octave. The key C, which would then be black, should be fluted or corrugated on its upper surface, so as to be easily recognizable both by sight and

by touch; and there should be a roughening or a longitudinal corrugation on F sharp, the middle note of the scale, for the same purpose.

A third advantage would result from these two changes. The lines on the staff, in the normalized notation, correspond to the black keys on the normalized keyboard; and the spaces of the staff to the white keys. If the page be turned so that the left side becomes the top the correspondence is perfect, each written note on the staff having its corresponding place on the keyboard. The physiological reflex between eyes and fingers to be established by the learner thus becomes as simple and direct as it is possible to make it. The time required to become moderately expert in sight reading and playing would then be reduced at least to half what it is now.

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PULSATION OF A CAT'S HEART AFTER DEATH

AN interesting case of prolonged beating of a cat's heart after death came to the writer's attention a short time since. A cat was killed by the use of ether at 2:20 P.M. A short time afterwards the body was stretched on a window-sill out of doors where it stayed undisturbed, and to all appearances dead, until 3:30, when it was taken in to the laboratory and immediately skinned, and the thorax cut open exposing the pericardium and lungs. The student doing the dissecting, Mr. John M. Long, at once called the writer's attention to the fact that the right auricle (only) was beating in almost perfect rhythm, and with apparently considerable strength. This continued with only slight variation in rhythm until 3:56, when a small quantity of normal salt solution was poured over the pericardium. Beginning at this time, the pulsations began to lose their rhythm until at 4:03 the auricle was beating at the rate of three pulsations at normal speed followed by an interval of fourteen seconds, then again three beats, followed by the interval, and so on, both the beats and intervals being very regular. This continued for four minutes (until

(4:07), when the number of pulsations was reduced to two instead of three, and the length of the interval began to vary from thirteen to eighteen seconds. More salt solution was poured over the pericardium at this time, and at 4:18 the inferior vena cava was cut just above the diaphragm. No change in the regularity of the pulsations was noticed from that recorded at 4:07 until the organ abruptly stopped beating at 4:44 P.M.

This gives a total length of time from the administration of the ether until the heart stopped beating of two hours and twenty-four minutes. Of course there must be subtracted a short period at the first when the cat was dying, but this still leaves something over two hours during which the auricle continued to beat after the death of the animal. During all this time no contraction was noticed in any part of the heart other than the right auricle. The pericardium was not opened until after the heart had ceased to beat. No electrical or mechanical means were used to stimulate the heart in any way, except the application of normal salt solution, as above mentioned. So far as the writer knows, this is the longest case on record of a cat's heart continuing to pulsate after death.

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STOCK CULTURES OF A PROTOZOON

DURING the course of investigation with Protozoa, a rather convenient and easy method of obtaining and keeping stock cultures of Colopoda was found.

Colopoda, as is well known, usually occur early in soil cultures from which they can be obtained, in the active state, in large numbers. Later in the life of the culture the animals encyst and it is upon this condition that the following method is based.

From a young soil culture active Colopoda are isolated, transferred to syracuse watch glasses and ordinary hay infusion added. After one or two days the culture fluid in the watch glass is allowed to evaporate slowly by leaving exposed to the air. During this slow