

and on those so shallow as to freeze to the bottom, that when the winter ice had nearly all thawed away, the remaining ice assumed the basaltic or columnar form, which on the deep-water lake could be walked over with perfect safety in the early-morning, being then perhaps six or eight inches thick, and apparently quite solid, but which all disappeared a few hours afterwards in a magical manner, the columns having become very rapidly detached, especially if there was a fresh breeze, and, falling over on their sides, became invisible, and drifted to the lee side of the lake. This often led to a very general but wholly erroneous belief that the ice had *sunk*.

The question may be very naturally put: What has all this to do with "peculiar ice forms" on dry land?

The foregoing particulars are mentioned to show that ice in wasting away assumes not unfrequently the basaltic form.

I believe that the bank on which the peculiar ice was noticed by Mr. Smith, and described by him as bare of vegetation, is usually covered in winter by a deep snowdrift, and that, towards spring and later, pressure and the percolation of water from the thawing surface converts the lower stratum of snow—still colder than the freezing-point—into ice. May not this ice, when nearly all wasted away, assume, as it does on the lakes, a basaltic structure?

May not the division of this four inches of ice "into four distinct layers—the columns of one layer being readily detached from those underneath"—be accounted for by what I have found to take place in snowdrifts, as I shall attempt to explain.

In building snow-huts there are two requisites essential for perfection in this kind of architecture. First, the snow has to be packed so firmly by the force of the wind as to be hard enough to walk over without sinking in it; secondly, the required depth of from fifteen to sixteen inches must be the formation of one and the same snowstorm and gale of wind. If this is not so, and the required depth of fifteen inches has been the result of three separate snowstorms, the blocks of snow, when sawn out, would not cohere, but break into three narrow strips of four or five inches each, which would render hut-building in the proper artistic manner and with rapidity (an important point in very cold weather) impossible.

These separate layers of ice noticed by Mr. Smith may possibly be the small remains of four separate and distinct snowstorms piled one above the other, which I know do—whilst in the form of snow—retain their individuality for the whole winter, although super-imposed the one upon the other.

The layer of "dirt" which Mr. Smith, from his point of view, very naturally supposes to be evidence that the mass of "peculiar ice" was pushed up from below, may be very easily otherwise accounted for.

In all gales with drifting snow in the Arctic, especially when there are high steep lands to be passed over, part of the ground is cut away by the driving snow in the form of fine powder or dust, and is carried sometimes a long way until deposited with the snow in some sheltered part.

This dust is small in quantity as compared with the bulk of snow, and is scarcely discernible when mingled with it; but when greater part of the snow melts, the dust shows as a very perceptible coat of "dirt" on the surface, which I consider has come down from above instead of being "pushed up from below" out of the ground as Mr. Smith believes to be the case.

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JOHN RAE

#### Fly-Maggots Feeding on Caterpillars

In reply to Dr. Bonavia's note on the above subject in NATURE for November 13 (p. 29), I beg to inform him that the larvæ of the house-fly are often internally parasitic on the larvæ of Lepidoptera. I have bred them in large numbers from *Vanessa io* and *Saturnia carpini*, also from other species more sparingly. Nor is this the only species of Diptera that infests Lepidoptera.

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F. N. PIERCE

#### Birds'-Nest Soup

IN NATURE of July 17 last (vol. xxx, p. 271), just received, appears an article on "Birds'-Nest Soup," which contains the statement that "the nests of the *bats*<sup>1</sup> and swifts were seen hanging in clusters from the sides and roof." That the addition of the "*bats*" to the contributors of the nests is not an acci-

<sup>1</sup> The italics are mine.—E. L. L.

dental *lapsus calami* is shown further on, when we read that the visitor eating the soup will "at any rate have the satisfaction of knowing that he has before him a dish the principal ingredient of which was formed by the little swifts and *bats*<sup>1</sup> which inhabit the Gomanton Caves," &c., &c.

I too have visited caves from which large quantities of edible birds' nests were collected. I saw plenty of *bats*, but, unfortunately, none of their nests! The nests I saw were built by a "swiftlet" (*Collocalia*, Gray), and were more or less the product of their own salivatory glands. This fact was known as far back as 1781, over one hundred years ago!! The "*white nests*" are supplied entirely by the inspissated saliva of the bird, and are the first produced. These are taken, and sold for their weight in silver. The next made by the birds are mixed with rootlets, grasses, &c., and often show traces of blood, from the efforts of the birds to produce the saliva. These are esteemed second quality. The third nest is composed of extraneous substances cemented together and to the rock with a little saliva; these are generally left for the bird to breed in, and are usually destroyed at the end of the season to compel the birds to build fresh *white* ones after their powers are recruited by a year's rest and stimulated by the breeding "*storge*."

All this genus—the swiftlets (*Collocalia*)—wherever found, produce, in a greater or less degree, an amount of saliva which is used in building their nests and attaching them to the surfaces of rocks or the insides of hollow trees and leaves. The properties in this saliva—as in the *kava* of the Fijians and the *pepsine* of the calf—give it its value in the eyes of the Chinese. If it were simply a "fungoid growth" woven together, why is it not gathered from the limestone rock in its pure state?

British Consulate, September 17

E. L. LAYARD

#### THE PRIME MERIDIAN CONFERENCE

WE believe that the protocols of this Conference have not yet reached this country. In the meantime we are permitted to give the official statement of the resolutions.

##### FINAL ACT

The President of the United States of America, in pursuance of a special provision of Congress, having extended to the Governments of all nations in diplomatic relations with his own, an invitation to send Delegates to meet Delegates from the United States in the City of Washington on October 1, 1884, for the purpose of discussing, and, if possible, fixing upon a meridian proper to be employed as a common zero of longitude and standard of time-reckoning throughout the world, this International Meridian Conference did assemble at the time and place designated; and, after careful and patient discussion, has passed the following resolutions:—

I. "*Resolved*, That it is the opinion of this Conference that it is desirable to adopt a single prime meridian for all nations, in place of the multiplicity of initial meridians which now exist."

This resolution was unanimously adopted.

II. "*Resolved*, That the Conference proposes to the Governments here represented the adoption of the meridian passing through the centre of the transit instrument at the Observatory of Greenwich as the initial meridian for longitude."

The above resolution was adopted by the following vote:—

In the affirmative—

Austria-Hungary,  
Chili,  
Colombia,  
Costa Rica,  
Germany,  
Great Britain,  
Guatemala,  
Hawaii,  
Italy,  
Japan,  
Liberia,

Mexico,  
Netherlands,  
Paraguay,  
Russia,  
Salvador,  
Spain,  
Sweden,  
Switzerland,  
Turkey,  
United States,  
Venezuela.

In the negative—

San Domingo.

Abstaining from voting—

Brazil, France.

Ayes, 22 ; noes, 1 ; abstaining, 2.

III. "Resolved, That from this meridian longitude shall be counted in two directions up to 180 degrees, east longitude being plus and west longitude minus."

This resolution was adopted by the following vote :—

In the affirmative—

Chili,	Liberia,
Colombia,	Mexico,
Costa Rica,	Paraguay,
Great Britain,	Russia,
Guatemala,	Salvador,
Hawaii,	United States,
Japan,	Venezuela.

In the negative—

Italy,	Sweden,
Netherlands,	Switzerland.
Spain,	

Abstaining from voting

Austria-Hungary,	Germany,
Brazil,	San Domingo,
France,	Turkey.

Ayes, 14 ; noes, 5 ; abstaining, 6.

IV. "Resolved, That the Conference proposes the adoption of a universal day for all purposes for which it may be found convenient, and which shall not interfere with the use of local or other standard time where desirable."

This resolution was adopted by the following vote :—

In the affirmative—

Austria-Hungary,	Mexico,
Brazil,	Netherlands,
Chili,	Paraguay,
Colombia,	Russia,
Costa Rica,	Salvador,
France,	Spain,
Great Britain,	Sweden,
Guatemala,	Switzerland,
Hawaii,	Turkey,
Italy,	United States,
Japan,	Venezuela.
Liberia,	

Abstaining from voting—

Germany,	San Domingo.
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Ayes, 23 ; abstaining, 2.

V. "Resolved, That this universal day is to be a mean solar day ; is to begin for all the world at the moment of mean midnight of the initial meridian, coinciding with the beginning of the civil day and date of that meridian, and is to be counted from zero up to twenty-four hours."

This resolution was adopted by the following vote :—

In the affirmative—

Brazil,	Liberia,
Chili,	Mexico,
Colombia,	Paraguay,
Costa Rica,	Russia,
Great Britain,	Turkey,
Guatemala,	United States,
Hawaii,	Venezuela.
Japan,	

In the negative—

Austria-Hungary,	Spain.
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Abstaining from voting—

France,	San Domingo,
Germany,	Sweden,
Italy,	Switzerland.
Netherlands,	

Ayes, 15 ; noes, 2 ; abstaining, 7.

VI. "Resolved, That the Conference expresses the hope that as soon as may be practicable the astronomical and nautical days will be arranged everywhere to begin at mean midnight."

This resolution was carried without division.

VII. "Resolved, That the Conference expresses the hope that the technical studies designed to regulate and extend the application of the decimal system to the division of angular space and of time shall be resumed, so as to permit the extension of this application to all cases in which it presents real advantages."

The motion was adopted by the following vote :—

In the affirmative—

Austria-Hungary,	Mexico,
Brazil,	Netherlands,
Chili,	Paraguay,
Colombia,	Russia,
Costa Rica,	San Domingo,
France,	Spain,
Great Britain,	Switzerland,
Hawaii,	Turkey,
Italy,	United States,
Japan,	Venezuela.
Liberia,	

Abstaining from voting—

Germany,	Sweden.
Guatemala,	

Ayes, 21 ; abstaining, 3.

Done at Washington, October 22, 1884.

C. R. P. RODGERS, Rear-Admiral U.S.N.,	} <i>Secretaries.</i>
L. CRULS (Brazil), JANSSEN (France),	
R. STRACHEY (Great Britain) . . . .	

"Resolved, That a copy of the resolutions passed by this Conference shall be communicated to the Government of the United States of America, at whose instance and within whose territory the Conference has been convened."

ON THE INTERFERENCE-CURVES KNOWN AS "OHM'S FRINGES"

PERHAPS I may be allowed to recall the attention of physicists to the above "strange and interesting phenomena," as they are rightly called by their discoverer, Prof. G. S. Ohm (see *Pogg. Annalen* for 1853, vol. xc. p. 327) ; partly for the purpose of indicating a simple method of observing them.

According to Prof. Ohm's directions two plates of equal thickness are to be cut from a uniaxial crystal, with parallel surfaces making an angle of 45° with the optic axis. One of these plates is to be placed on the other in such a position that the optic axes lie in the same plane but on opposite sides of the normal common to the two plates, with which they make, of course, equal angles of 45°. When this combination is held in a convergent beam of plane-polarised monochromatic light (*e.g.* yellow sodium light), numerous alternations of bright and dark elliptical bands are seen, most distinctly when the plane containing the optic axes makes an angle of 45° with the plane of polarisation of the light.

Of course a pair of "Savart's band" plates, when properly oriented, will answer for the above experiment ; but the peculiar double refraction of quartz causes more complicated but beautiful results.