societies, as well as the National Museum, to the very great convenience of everybody concerned. I have never found any difference of opinion among working zoologists on this point.

WM. H. DALL.

SMITHSONIAN INSTITUTION, November 5, 1898.

THE NERNST LIGHT.

TO THE EDITOR OF SCIENCE: Several months have passed since the report of the discovery of a new incandescent electric light by Professor Nernst, of Göttingen. It was rumored that a Berlin firm had bought the patent for five million Marks, and that we were on the eve of another revolution in the illuminating industry, but till recently very little reliable information has been obtained. In the meantime Professor Nernst has been developing and perfecting his invention, and his researches have been crowned with such success that we may look forward to the early appearance of the finished lamp, and perhaps the confirmation of the most sensational rumors.

The astonishing progress in illumination during recent years has been characterized by a great race between gas and electricity. Scarcely had the incandescent light secured a firm hold in the practical world when Auer von Welsbach made his famous improvement on the gas light, and the possibility of the use of acetylene became apparent, so that many believed electricity would after all have to yield the supremacy to gas. Nernst now reclaims the palm for electricity, for he expects that the cost of his light for a whole evening will be no more than that of the Edison for an hour.

The Nernst light requires neither vacuum nor tender filaments. The essential point of the invention is that when substances like magnesia (magnesium oxide) and clay are heated above 3,000 degrees Celsius (6,000° Fahr.—far above the melting point of platinum) a very weak current is sufficient to keep them in an intensely luminous condition. Either direct or alternating currents may be employed, and the magnesia is little injured by use. The only difficulty that remains to be surmounted is a practical and inexpensive appliance for heating the substance to the necessary temperature. The work is, however, progressing and those who know the ability and courage of the inventor are confident that he will succeed.

Professor Walter Nernst, though unknown to most people, is a scholar of high rank in the purely scientific world, and his works or their translations are to be found in almost every scientific library. His brilliant researches won him the newly established chair of physical (theoretical) chemistry at Göttingen, and he is surrounded by advanced students of the most varied nationalities, all of whom greatly admire his fertile mind and genial, inspiring manner. His new invention is but another example of the benefit that patient, conscientious scientific study is sure to bring to the whole world.

H. C. COOPER.

HEIDELBERG.

THE DAY OF THE WEEK.

TO THE EDITOR OF SCIENCE: The statement made in your issue of SCIENCE for October 18, 1898, by Mr. Edward L. Stabler, that 'I have not found any published rule for the simple problem of determining mentally the day of the week without reference to a calendar or lengthy table' leads me to send you the following formula, which I have never seen in print, but which is of so simple derivation that it may well have been used by others than myself.

Let Y represent any year of the Gregorian calendar and D the number of any day in that year, *e. g.*, for February 1, 1898, $Y = 1898$ and $D = 32$. Neglecting fractions, put

$$Y + D + \frac{Y-1}{4} - \frac{Y-1}{100} + \frac{Y-1}{400} = 7n + r$$

where n is the quotient and r the remainder obtained by dividing the first member of the equation by 7. The remainder r then represents the number of the day of the week, *e. g.*, if $r = 1$ the given date falls on Sunday, etc., and if the division is exact, $r = 0$, it falls on Saturday. For the date given above we have

Y		1898
D	+	32
$(Y-1)/4$	+	474
$(Y-1)/100$	−	18
$(Y-1)/400$	+	4
		7)2390
n		341
r		3 = Tuesday.

Dates given in the Julian calendar must first be transformed to the Gregorian calendar before applying the above formula, and this transformation is readily effected through the relation

$$G = J + (N - 2) - \frac{N}{4}$$

where G and J are the respective dates, N is the number of the century, and the remainder is to be neglected in the division by 4.

GEO. C. COMSTOCK.

WASHBURN OBSERVATORY,
MADISON, WIS., October 31, 1898.

NORTHERN ROCKY MOUNTAIN GLACIERS.

TO THE EDITOR OF SCIENCE: For some years I have been interested in the geography of a small section of the Rocky Mountains which, until recently, was part of the Blackfeet Reservation, in northwestern Montana. This section lies, for the most part, east of the Continental Divide and between the international boundary on the north and the Great Northern Railroad on the south. The portion of it which I know best is included in the watershed of the St. Mary's River and its tributaries. In 1891 I took to the head of the St. Mary's River the first party that had ever visited it, so far as known, and in 1895 accompanied to the same point the Government Commission which afterwards purchased from the Blackfeet Indians the rough mountain land which formed the western portion of the reservation of that tribe. Before that I had made a sketch map of the region, which is the basis of all the maps of it that have been made or published.

In 1897 I made a hasty trip to the head of the river and climbed Mt. Jackson, the highest peak in that region. Last July (1898) I again went to the head of the river and climbed the Blackfoot Mountain, another lofty peak somewhat less accessible than Mt. Jackson. On both trips I was accompanied by my friend, Mr. J. B. Monroe.

These last trips have enabled me definitely to locate two points about whose relations I have never until now been quite certain. One is the Pumpelly glacier, discovered by Professor Raphael Pumpelly, who, I believe in 1883, with a small party which included the late W. A. Stiles, crossed from the Flathead country to the Plains by way of the Marias, or, as it is now called, the Cut Bank Pass. This great mass of ice, which is seen by every traveler going through the Cut Bank Pass, rises to the height of several hundred feet above the face of a lofty cliff, over which portions of the glacier are constantly falling with tremendous reports, which are heard for a long distance.

From the top of the Blackfoot Mountain the whole country leading up to the Cut Bank Pass can be seen, and immediately below it to the southeast lies the Pumpelly glacier, readily identified not only from its position with relation to the valley, but also by the peaks and rocks in its neighborhood. It thus appears that the Pumpelly glacier, as I have long supposed was the case, is part of the southern flow of the great ice cap which covers almost the whole of the Blackfoot Mountain. The Blackfoot glacier, which stretches away in a northeasterly direction from the peak of the Blackfoot Mountain, though perhaps varying in extent somewhat with the season, was estimated last July to be six or seven miles long, and in some places between three and four miles wide. From the peak of the Blackfoot Mountain the ice field flows also in a northerly direction, meeting another which runs down between Mt. Kainah and Mt. Jackson, while from Mt. Jackson a number of smaller glaciers flow down to timber line.

A little to the west of south of the Blackfoot Mountain and lying in a great bend of Mud Creek — tributary of the Flathead — which entirely cuts it off from the main range, lies Mt. James, one of the three highest peaks in this immediate section. Seen from the east, it is shaped like the square-faced, peaked end of a hay stack, and at a distance appears very difficult or impossible of ascent. Its southern and western faces may be more practicable than those on the north and east appear. From the top of the Blackfoot Mountain the level shows Mt. Jackson to be the highest of all these mountains; Mt. James the next, while Blackfoot is the third. But the differences in height are very slight.

A few miles northwest of Mt. Jackson, and