

DEAR EDITOR: The comment at the end of STAR DUST, November issue, was of lively interest to me, in that I believe I can supply the solution to the mystery about the planetarium.

I know that Mr. Frederic A. Delano, who served for years on the Planning Commission, had during many years made great effort to get a planetarium for Washington. He told me that at one time one of the big optical firms offered to donate the equipment if the city would erect a suitable building, and he told me of his chagrin when he was unable to get support for his plan to supply the site and building, and for his many other efforts. As I recall it, he even failed to arouse any interest in the Navy Department, where he believed there should be enthusiasm because of the facility it would offer in teaching nautical astronomy.

I know that he also made strenuous effort to have the Jefferson Memorial Committee select a planetarium as the most suitable type of memorial for Thomas Jefferson, whose interest in science was outstanding. And so I am quite sure that if the case were to be traced it would be found that the planetarium was placed in the model of post-war Washington at the insistence of Mr. Delano, one of the grandest old men of this time, who has never been known to give up.

---Benjamin King

NEW MEMBERS

Mr. Benjamin King and Mrs. Marjorie Brown King, Westchester Apartments.

Mr. Ernest J. Kossow, Enl. Det. 2525 SCU, Station Complement, South Post, Ft. Meyer, Va.

MILITARY MEMBERSHIPS END. This special class of memberships was created during the war and upon decision of the Executive Committee is now abolished. We hope those affected will become regular members.  
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"SOLAR ECLIPSE EXPEDITIONS" will be Dr. Irvine C. Gardner's subject on December 1st at 8 p.m. Dr. Gardner is Chief of the Optical Instruments Section of the National Bureau of Standards. He is well qualified to speak on this topic, having led the National Geographic Society-National Bureau of Standards Eclipse Expeditions to Russia in 1936 and Brazil in 1940. He was also a member of the U.S. Navy-National Geographic Society Eclipse Expedition to Canton Island in 1937.

THE MIDDLE AMERICAN CALENDAR

The methods used by the American Indians for recording the passage of time were described by Dr. M. W. Stirling at the November meeting, and illustrated with lantern slides which included many other interesting items about the cultures of these people.

A system of time reckoning based on astronomical observation (such as by cycles of the lunar phases, or months, and by the solstices and equinoxes) usually comes to be employed quite early; but primitive people are not as time-conscious as we now are, and at first a systematic calendar is slow to develop. The tribes north of Mexico used rough methods of reckoning by successive recurrences of events associated with the seasons, such as agricultural activities, weather conditions, or habits of animals and birds. Records were often painted on buffalo robes, picturing the outstanding events during successive years or months. Among the events on these historical calendars, the meteor shower of 1833 and the eclipse of 1869 have been found.

To the south, calendars based on astronomical observation were constructed, especially by the Mayas who developed an advanced knowledge of mathematics and astronomy, and a particularly elaborate calendar. Just as we count time by centuries, years, months, and days since the beginning of the Christian Era, so the Mayas counted by baktuns (periods of 144,000 days), katuns (7200 days), tuns (360 days), uinals (20 days), and days since a mythological starting point about 5000 years ago. In addition, the uinal was used in the same way as our months; the year comprised 18 uinals, each with a month name, plus five extra days at the end of the year, and a Maya date commonly gave the month and day of the month as well as the count of days described above. Furthermore, just as we also make use of a week of seven named days, so the Mayas had a more complicated system of 20 names for the days of each uinal, with which 13 numbers were used, the combinations running through a cycle in 260 days. After a period of 52 years (of 365 days each), the same day name with the same day number would occupy the same position in the same month. The Incas took the end of each 52-year period as a new starting point. The Mayas carried their calendar reckoning on continuously, but the successive periods were marked by special observances and customs.

Dates were inscribed in hieroglyphs on many monuments. The earliest date yet found is 1,125,698 days, or nearly 3100 years, after the starting point of the Maya calendar. The corresponding date in the Christian calendar is not certain, but according to the most generally accepted correlation it is November 4, 31 B.C.

---Edgar W. Woolard

#### BOOK NOTES

Many of the Smithsonian publications are excellent sources of quick information, and summarize a wide variety of highly specialized subjects. For example:

"What Lies Between the Stars" by Walter S. Adams, is a clearly written little pamphlet containing several curious and interesting facts about the contents of interstellar space. Astronomical detectives armed only with spectroscopes have positively identified sodium, calcium, potassium, titanium, hydrocarbon gas, and cyanogen in space. In spite of the relative vacuum of space, the mass of dust and gas between stars is believed to exceed by several times all the matter actually visible with the largest telescopes. Another unusual concept is the matter of temperature. Outer space is about 455 degrees F. below zero, but the atoms and molecules themselves maintain an average temperature of 15,000 degrees F., affected by the quality of incident radiation rather than quantity. The extreme rarity of molecular and atomic collisions in interstellar space is responsible for a rather easy-going attitude on the part of these particles. Instead of producing normal spectra of several hundred closely packed lines, they are quite content to absorb a meager three or four lines.

---Eugene S. Henning

MORE THAN 2000 PERSONS visited the Naval Observatory on Navy Day. Far in excess of expectations, the staff was not prepared for such overwhelming popularity.

MT. WILSON of the Carnegie Institution and PALOMAR OBSERVATORY of the California Institute of Technology are to be merged under one management headed by Dr. Ira Sprague Bowen, physicist of California Institute of Technology, according to the November Bulletin of Eastbay Astronomical Association, Oakland, Calif. Dr. Walter S. Adams, present director of Mt. Wilson, will retire January 1st when Dr. Bowen will become director. The administrative merger becomes effective as soon as the 200-inch telescope is completed. At that time Dr. Bowen will assume directorship of the combination. The financial support of the two observatories will be contributed by the two institutions into a common fund.