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## DRAKE UNIVERSITY MUNICIPAL OBSERVATORY.

By D. W. MOREHOUSE.

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The dedication of the new Drake University Municipal Observatory on November 5, 1921, was a notable event in the history of Des Moines. If there were no more to the project than the beautiful and altogether unique building situated in an ideal location, there would be sufficient cause for congratulation. However, the purpose of the enterprise gives it distinction. The idea of a Municipal Observatory is probably not indigenous with Des Moines. It has appeared in some form in a few American cities. The oldest and possibly the most authentic claim is made by Cincinnati. Records show that about 1842, the Cincinnati Astronomical Society bought the famous Mitchel Telescope. This instrument was placed in the Cincinnati Observatory, located in the heart of the city. It was later, 1873, moved to Mount Lookout. In 1903 a larger telescope was purchased and additions were made to the building.

At the dedication of the Mitchel Building of the Cincinnati Observatory, Director J. G. Porter referred to the reputation which Cincinnati has acquired of starting new and untried enterprises, citing the Mitchel Telescope among other examples. He pointed out that "Mitchel in procuring for the people of Cincinnati, at that time a western, frontier city, a telescope rivaling the great Pulkova glass, then the largest in the world, justly ranks as the originator of this progressivism. For although the Observatory was not at first a municipal institution, it was nevertheless erected by and for the people; and the new Mitchel Building designed chiefly for the accommodation of the public, worthily carries out the idea of the illustrious founder of the Observatory."

Oakland, California, also has a Public Observatory established by one of its citizens, Anthony Chabot, and now forming a part of its school system.

The Allegheny Observatory at Pittsburgh, Pennsylvania, founded by Pennsylvania's "Grand Old Man," Dr. John A. Brashear, the famous maker of telescopes, is one of the best known public observatories in the east. He tells the incident that when working in the rolling mills he was permitted to look through a small telescope and it inspired in him a determination to give to the people of Pittsburgh

PLATE II.

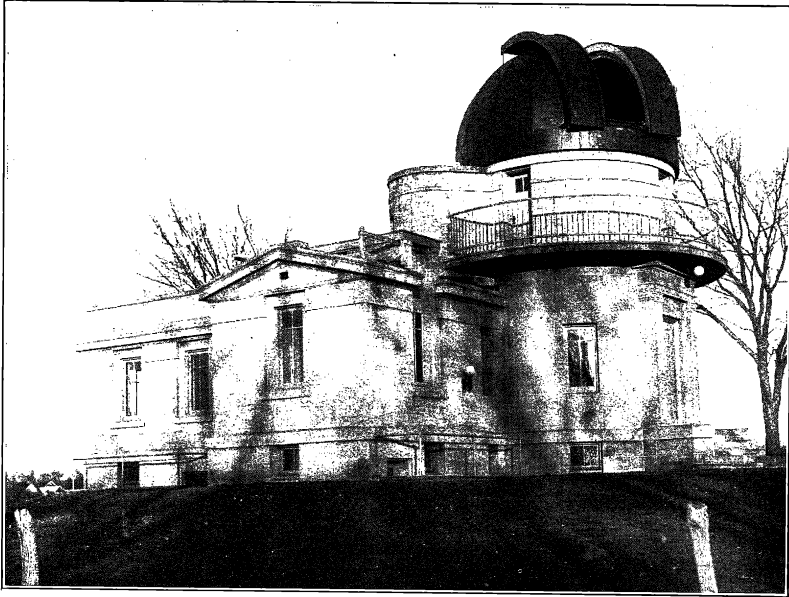


VIEW FROM AN AEROPLANE OF DRAKE UNIVERSITY MUNICIPAL  
OBSERVATORY, DES MOINES, IOWA.

From a Photograph by George Yates.

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PLATE III.



DRAKE UNIVERSITY MUNICIPAL OBSERVATORY.



ENTRANCE TO DRAKE UNIVERSITY MUNICIPAL OBSERVATORY.

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adequate facilities for viewing the heavens. Shortly before his lamented death, April 7, 1920, Dr. Brashear wrote, "May I say that while I have been interested in scientific work for nearly half a century and have done my best to bring the beautiful things in science to the comprehension of laymen—yes, to boys and girls, in lectures, etc., nothing outside of my purely educational work has given me so much pleasure as the free department of our Observatory, the realization of a dream of my late childhood. The demand is as great as ever to see the beauties of God's universe, and apart from the scientific side, its high *moral* worth counts every time and all the time."

The above facts have been related that there may be no misunderstanding concerning Des Moines' priority in establishing a Municipal Observatory. I doubt if it can be shown that any other city has planned and erected a public observatory in a public park for the primary purpose of giving to its citizens an opportunity to know the beauty, dignity, and high moral value of Astronomy. It is quite true that after some great soul, such as Mitchel, Chabot, Lick or Brashear, has established and demonstrated the civic value of a public observatory, then the municipality or state has supported it, but Des Moines took the initiative.

Some quotations from a few letters just received will indicate the light in which our city is seen by others.

"I extend my hearty congratulations to the city of Des Moines for the liberal and progressive spirit manifested in the founding of an observatory supported by a municipality. May the example of Des Moines be followed by other cities, especially by those that have a university in their midst."—Dr. Otto Klotz, Director of Dominion Observatory, Ottawa, Canada.

"I heartily congratulate the city of Des Moines on the installation of a municipal observatory. I have been pushing the idea of a municipal observatory for several years. On November 21st I am to lecture before the College Club in Chicago and am to put in some propoganda on a municipal observatory."—S. B. Barrett, Yerkes Observatory, Williams Bay, Wisconsin.

"I heartily congratulate all concerned in the building of the Drake University Municipal Observatory. It is in every way such a splendid achievement. The co-operation between University and city which it symbolizes, is one of the finest things about it. Oakland, as you know, has the Chabot Observatory as a part of its school equipment, but this is exclusively a city enterprise. Berkeley has its student observatory, but this is exclusively a university institution. Your observatory belongs to University *and* city and hence should hold the interest of both as well as serve both. You are to be heartily congratulated."—Dr. Robert G. Aitken, Lick Observatory, California.

The University of Toronto, Canada, is now in a campaign to establish an astronomical observatory for Toronto. In a pamphlet



recently issued by Professor C. A. Chant, setting forth arguments for such a project is the following:

"In Des Moines, Iowa, (population 86,000 in 1910) Drake University has a telescope of aperture of eight and one-fourth inches. The public department of this institution has become so popular that a separate observatory, especially for the citizens, has been erected and is open to the public several evenings each week."

Dr. George E. Hale, Director of the great Mt. Wilson Solar Observatory at Pasadena, California, the home of the world-famous one hundred inch Hooker telescope, writes, "Hearty congratulations on the initiation of this admirable plan."

The architecture of the building was given more than usual consideration. Two of our leading firms of the city co-operated most effectually in giving to it more significance than is usually found in a building of this character. Its design presented a problem consisting of elements different from those usually confronting an architect. From the architectural point, our first desideratum was to use such features as would indicate that various ancient nations had contributed to the science of Astronomy. Realizing that only a few could be indicated, it was necessary to use those features with discretion in order to obtain a harmonious result, and as architecture is a conventional art, they must be so combined as not to interfere with the general design.

The building is a massive structure of gray Bedford stone and the architecture is classic of the severe Grecian type. As one approaches the building, a sun dial is seen directly in front of the main entrance, thus leading the observer by an easy and natural step to reflect upon the importance of the sun to our planet. On six stone panels of the pilasters, on either side of the door, the signs of the zodiac, carved by hand, attract the eye and further direct the mind to consider the relative position of the earth, sun and surrounding firmament. The historical significance of these signs is of great interest and their origin of great antiquity. The top unit of each pilaster is a Greek Corinthian capital which suggests the contributions which Greece made to the arts and sciences. Carved in Roman letters on the lintel is "Drake University Municipal Observatory" and directly above this is the familiar bas-relief of the winged sun with attendant cobras, used so frequently by the Egyptians on their architectural monuments. On either side of this carving are two dates indicating the age of the building, the one on the west is the Roman date, J. E. 6633, indicating in astronomical lore the Julian epoch and the one on the east, 1920 A. D., the common Roman name for the year of our Lord. Thus in review before our minds pass the ancient Chaldean, Persian, Egyptian, Greek and Roman civilizations, each of which contributed its part to the science to which this building is dedicated.

From a mechanical point of view, the building is also worthy of note. It has acquired the name of the "honor job" in Des Moines. It seems as if each workman took special pride in contributing all

that his art could give to this historic project. The stone work is especially fine, as all observers admit. A hollow space is left between the outer and inner walls throughout the entire building, thus doing away with a feature which is usually troublesome in stone buildings, that is, of moisture penetrating the walls and affecting the decoration. The building is fireproof. There is a very complete basement containing public rest rooms, a fine photographic room, a room designed for a seismograph and an automatic oil-burning heating plant. Owing to the structure of the walls mentioned above, these rooms are as dry as if they were above ground.

On the ground floor the main entrance is into a beautiful rotunda. The conventional representation of our solar system is depicted in marble in the sky blue mosaic floor. The suspended ceiling is dome-shaped and gives a realistic representation of the celestial sphere. The decoration was given considerable thought. It is a sky blue and blends most beautifully with the surroundings.

Opening from the rotunda to the west is the transit and clock room. On the east is a delightful office, while to the north is the gem of the entire building, a public lecture room and library. Extending around the walls of this room are racks containing a most interesting collection of photographic transparencies through which light shines giving a very fine representation of the celestial objects as seen through the telescope. The book cases are quartered oak in flat finish. The walls are a greenish buff.

The observing room is just above the rotunda. The telescope is mounted on re-inforced concrete beams resting on the extra heavy stone wall and insulated from possible vibration by compressed cork. These are the only points of contact between the telescope and the building. The interior walls of the observing room are of pressed brick, a soft shade of gray. The lights are recessed, allowing free movement of the observing chair and giving an indirect method of lighting. The dome is eighteen feet in diameter and covered with copper. This makes a beautiful exterior effect, especially in the fall when the various colored trees are reflected in the variegated colors of the oxidizing copper. There is thus afforded a strikingly appropriate home for the graceful and remarkably efficient nine-inch telescope.

Extending around the exterior of the observing tower is a balcony with an iron balustrade, opening into the observatory by four doors and on to the roof of the lecture room, which is finished with promenade tile and gives an admirable opportunity for entertaining large groups of people with naked eye observations.

The equipment of the observatory consists of a nine-inch Warner & Swasey equatorial with optical parts by the John A. Brashear Company; a five-inch photographic doublet, a nine-inch photographic lens of 120-inch focal length and a standard spectroscope, all by the same firm; a transit instrument by an English firm, chronograph,

chronometer, sextants, and in short, practically all of the usual apparatus used in Astronomy.

The observatory is open to the public without charge, on Monday and Friday evenings from 7:30 to 9:00. Visitors are entertained by the staff with lectures, explanations and direct observation through the telescope. Wednesday evenings are reserved for clubs and public schools by appointment. The observatory has been open for one month and we have entertained something over seven hundred people during this time. The interest seems to be growing and the attitude of the people is extremely gratifying.

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### LARGER WORLDS.\*

By F. R. MOULTON.

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It would not be inappropriate on this happy occasion to devote ourselves to praise of the undertaking which has led to the erection of this splendid building. It is the fulfillment of a twenty-year dream. In its physical aspects it matches the high ideals of those who have changed this dream into realities. Many complimentary things could be said with full justice about Dean Morehouse and the public-spirited citizens who have given him their efficient support. This would not be an unprofitable use of our time because we are always benefited by considering successful and unselfish efforts of our fellow men.

Let us recall that it was observations of the heavenly bodies that ways had the effect of lifting men from their immediate neighborhoods to broader things. A view of this lovely park and its glacial hills from the balcony of the bronze dome above us gives one a thrill; but a glimpse through its telescope of the universe which stretches out beyond our tiny world will fill him with inspiration. We shall not be contented, therefore, to consider the present occasion in its local connection alone, but rather we shall attempt to set it in the background of some of the noblest achievements of mankind.

Astronomy has always stimulated men to discover larger worlds—larger physical worlds, larger intellectual worlds, and larger moral worlds. We shall consider the subject briefly in these three aspects and in this order; and then we shall be better able to interpret the present occasion.

Let us recall that it was observations of the heavenly bodies that first led men in ancient times to believe that the earth was spherical; that gave Columbus the courage to hold his mutinous sailors under control for many weeks while they sailed across unknown seas; and

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\*Address delivered by Professor F. R. Moulton, of the University of Chicago, on November 5, 1921, at Des Moines, Iowa, at the dedication of the Drake University Municipal Observatory. From a stenographic report by Frank C. Walrath.