

greater accuracy and the thousandfold greater ease of doing one's geography from the air.

But the making of modern maps by modern means is not the only occupation of the students of the Institute. They take their turn at making ancient maps by traditional means, quite as though they were artist-scribes in a medieval monastery. The eagles can play owl, on occasion.

Among the historical treasures of the Institute are several ancient books of geography, dating to pre-Columbian Europe. In these there are no maps, but cities and other places are set down in long lists, each spot given its latitude and longitude, sometimes with marginal notes on natural resources, commerce, or customs of the people. Graduate students have worked out maps from these, carefully drawing them in the antique style with quaint old-fashioned lettering. They have successfully recaptured the spirit of the old geographers, and are looking on the late-medieval world with late-medieval eyes.

Some of the marginal notes, transferred onto appropriate spaces of one of these maps in the original archaic Low German, are really amusing:

"Ibernia: In that land is Saint Patrick's hell or purgatory."

"Canaria: . . . is a rich island of wine."

"Norwegen: In that sea one finds the best stockfish."

"Sicilia: In that land there is a mountain that always burns and is called Aethna."

Egypt bears the alternative title, "the New Babylon, where the Insoldan or Great Emperor lives, who has possession of the Holy Sepulcher," and the Nile bears the name "Zenlus."

And off to the northwest of the British Isles is shown part of another island, labeled "Ciliven or Tileben," with the further information, "When the sun is in Cancer, the people have one month of day; and in Capricorn, one month of night."

There were diligent geographers in Germany in those days, but their diligence might have been better rewarded had they possessed better means of exercising it. The world had to wait long for its far-seeing eagles!

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A chain of old forgotten Spanish missions, swallowed by the desert a generation ago, has been found in California.

ASTRONOMY

Dunlap Observatory Dedicated On Director's 70th Birthday

See Front Cover

PAVING the way for new advances in astronomy's knowledge of the architecture of the universe, the David Dunlap Observatory was officially opened on Friday, May 31, the seventieth birthday of its director, Dr. C. A. Chant, whose lifetime has been spent in fostering Canadian astronomical development.

Presented to the University of Toronto by Mrs. Jessie Dunlap as a memorial to her late husband, an enthusiastic amateur astronomer, the observatory, located fifteen miles north of Toronto, contains the largest telescope in the British Empire and at the present time the second largest in the world. It is a reflector, with a seventy-four-inch concave mirror. The observatory is shown on the cover of this week's SCIENCE NEWS LETTER.

"We shall participate almost exclusively in work on stellar velocities and spectral photometry," Dr. Chant informed Science Service. "With a telescope of such power we shall be able to secure much valuable material, never before obtained.

"While the major part of the observational program, planned for years in advance, will be devoted to work on the motions, temperatures and densities of stars from spectroscopic observations, it is possible that a little time may be given to direct photographic work, especially in future years when we hope to secure additional instruments especially designed for that purpose."

In addition to the great telescope, with its seventy-four-inch disk of pyrex glass, the observatory has a nineteen-inch reflector designed and constructed by its associate director, Dr. R. K. Young. This instrument also will be used for spectroscopic work.

The observatory's location was decided upon after extensive investigation of all possible sites near Toronto. Situated on the highest point of land in the district, and north of the city so that smoke will be carried away by the prevailing northwesterly winds, at least one hundred clear nights are expected yearly, Dr. Young explained.

The site, formerly farm land, will be developed as an arboretum, to be known as David Dunlap Park. The tree plantings will be a great advantage from an astro-

nomical point of view, since trees absorb much of the sun's heat by day, and thus minimize rising currents of air at night, which would otherwise create an unsteady atmosphere and interfere with the use of the telescope.

Sir Frank Dyson, former Astronomer Royal of Great Britain, Dr. Harlow Shapley, director of Harvard College Observatory, Dr. W. E. Harper, acting director of the Dominion Astrophysical Observatory at Victoria, B. C., and Dr. V. M. Slipher, director of the Lowell Observatory at Flagstaff, Arizona, received honorary degrees at a special convocation of the University, as did also Mrs. Dunlap and Dr. Chant.

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ARCHAEOLOGY

Single Hieroglyph Sheds Light On Ancient Toltecs

A SINGLE word sign on an old stone monument, detected by a young woman traveling near Pacific shores of southern Mexico, has revealed a new outpost to which the civilization attributed to "Toltec" Indians spread its ancient learning.

Miss Emma Reh, now in Washington, reports the discovery made at the ruins of La Labrada, in the Mexican state of Guerrero. Indians of the neighborhood called Miss Reh's attention to the existence of the ruins, the center of which was a tall, complex terrace, once stone-faced but now buried in forest.

Examining the carved monuments lying in underbrush around the terrace, Miss Reh quickly sketched about three feet of one twelve-foot monument. Later study of this drawing shows the significant "Glyph A," as Mexican scientists have called it, a picture sign found at ruined cities as far apart as Chichen Itza in Yucatan, Monte Alban in the southern highlands, Xochicalco in south-central Mexico, and now in the coast of the country. The ancient influence which spread common writing symbols over this wide area is often called "Toltec," a civilization preceding the Aztecs who were in power when Cortez conquered Mexico.

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