

“Electric Steam” in Vatican Library

Engineering

To preserve priceless manuscripts in the library of the Vatican, an electric steam generator is now being installed. This device emitting steam into the library will keep the ancient books and valuable manuscripts from cracking as a result of the excessively dry air experienced in Rome during the winter months. The steam will enter through a valve operated by a humidistat, thus making the installation completely automatic in operation. To guard against excessive humidity in the summer, seven General Electric air heating units are being used.

The generator was designed by F. B. Hill, electric heating specialist of the General Electric Company, and built by that company.

“The climate of Rome is very changeable,” Mr. Hill explained. “In damp weather the atmosphere becomes so humid that the valuable manuscripts in the Vatican collection show a tendency to decay.

“Vatican library authorities solved this problem some time ago by installing electric heating apparatus built by the General Electric Company at the Schenectady plant.

“But this solved only half the problem. Because during the dry season in Rome the air is almost entirely lacking in moisture. Hence the manuscripts become brittle and are in constant danger of cracking and breaking.

“So the Vatican authorities decided that artificially-produced moisture would have to be employed,” Hill said.

The moisture-creating device designed by Hill consists of a metal tank which is filled with water, into which a series of electric heating elements have been immersed. These elements are connected to a source of electric power and are operated through humidity gauges and thermostats. This is accomplished by adjusting the apparatus for the desired humidity. When the humidity drops below this point switches are automatically thrown, which connect the supply of electricity to the heating elements. These elements bring the water up to the correct temperature at which it will discharge water vapor into the rooms.

The Vatican possesses the most valuable library of ancient books and manuscripts in the world. There are ponderous tomes printed not so long after Gutenberg invented printing.

There are other hand-illuminated books, executed painstakingly by monks who devoted years of loving care to their product. They are devoted quite naturally mainly to ecclesiastical history. There are priceless manuscripts and scrolls. In all there are hundreds of thousands of books and manuscripts in this library, which takes first rank among the world's libraries in its antiquity and in the wealth of historical manuscripts it contains.

There are more than 34,000 ancient manuscripts alone. Included among them are such priceless items as several of the oldest versions of the Greek New Testament, and the manuscript of Virgil. Probably the most famous manuscript in the entire collection is the Codex Vaticanus, prized by biblical scholars as the most important authority for settling disputes over varying readings of verses of the bible.

The Vatican library also contains more than 400,000 printed books, many of them as priceless as the rarest of the manuscripts. The library was founded in 1447 and has continued uninterruptedly until the present day. The building which now houses the collection was constructed in 1588. Through all of the years, the extraordinarily wet Roman summers and the extraordinarily dry winters have exacted their toll.

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Radio and Magnetic Storm

Radio

Weak radio signals from European stations and stronger signals from nearer ones in America are the forecast of disturbances of the earth's magnetism, or magnetic storms. Stronger signals from distant stations follow such storms. This has been discovered at the Radio Laboratory of the U. S. Bureau of Standards, Miss I. J. Wymore reported to the meeting of the American Geophysical Union.

The researches of which she told were concerned only with the long waves used for high-power transoceanic transmission. Several days before the maximum of the disturbance of magnetism, the signals were weak when received at Washington, but the American stations, those at Tuckerton and New Brunswick, N. J., and Rocky Point, L. I., were decidedly stronger two to four days before.

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NATURE RAMBLINGS

By FRANK THONE

Natural History



Harebell

There are some flowers that are so little afraid of the cold that they are able to cling close to the edges of retreating continental glaciers, and so establish themselves in a garland all around the northern end of the world. Of such is the lovely blue harebell. It is found clear across North America, clear across Asia, clear across Northern Europe. It is known and loved in all lands where there are people who can appreciate flowers at all. In our own country it does not get very far south, except where mountain heights provide the equivalent of the sub-arctic climate it thrives on.

The harebell is one of the most celebrated of all flowers that poets have chosen for laudation, for it is the blue-bell of Scotland. Oddly enough, however, one of the most loyal of the bards from beyond Tweed, Sir Walter Scott himself, gave it its English name in *The Lady of the Lake*:

“E'en the slight harebell raised
its head,
Elastic from her airy tread.”

But it may be that Sir Walter was expecting the largest sale for his book in England, and so supplied his readers with a flower they could recognize.

“Slight harebell” is a sure poetic touch, for the thin, strawlike stems of the plant seem scarcely able to support even the little enameled blue bells, fragile and fairy-like though they seem. The harebell is a plant of a double habit, anyway. Its first growth, which persists under the dead leaves and snow through the winter, is a rosette of round leaves laid flat on the ground. In the spring the slender stem shoots rapidly upward to produce the flowers. The leaves that line this stem are narrow and grass-like, so that unless you can find some of the old rosette-leaves you will be puzzled to account for its botanical name of *Campanula rotundifolia*.

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