

oiled paper. I saw the patient next day, and advised the daily application of a bit of lint soaked in carbolic acid over the oiled paper; and this was done for the next five days. On the second day there was an oozing of red fluid from beneath the dressing, but by the third day this had ceased entirely. On the fourth day, when, under ordinary circumstances, suppuration would have made its appearance, the skin had a nearly natural aspect, and there was no increase of swelling, while the uneasiness he had previously felt was almost entirely absent. His pulse was 64, and his appetite improving. On the seventh day, though his general condition was all that could be wished, he complained again of some uneasiness, and the skin about the still adherent crust of blood, carbolic acid, and lint was found to be vesicated, apparently in consequence of the irritation of the carbolic acid. From the seventh day the crust was left untouched till the eleventh day, when I removed it, disclosing a concave surface destitute of granulations, and free from suppuration. Water dressing was now applied, and by the sixteenth day the entire sore, with the exception of one small spot where the bone was bare, presented a healthy granulating aspect, the formation of pus being limited to the surface of the granulations.

I now had occasion to leave Glasgow for some weeks, and did so feeling that the cure was assured. On my return, however, I was deeply mortified to learn that hospital gangrene attacked the sore soon after I went away, and made such havoc that amputation became necessary.

#### Perfectly Conclusive . . .

While I could not but feel that this case, by its unfortunate issue, might lose much of its value in the minds of others, yet to myself it was perfectly conclusive of the efficacy of carbolic acid for the object in view. At the same time it suggested some improvement in matters of detail. It showed that the acid may give rise to a serous exudation apt to irritate by its accumulation, and therefore that a warm and moist application would be advantageous to soothe the part, and also ensure the free exit of such exuded fluid. At the same time it appeared desirable to protect the crust with something that would retain the volatile organic acid more effectually than oiled silk or gutta-percha, through which it makes its way with the utmost facility. For this pur-

pose a metallic covering naturally suggested itself, and as ordinary tin-foil is unsuitable from its porosity, I employed thin sheet-lead, and afterwards block-tin, such as is used for covering the

jars of anatomical preparations, superior to lead on account of the facility with which it can be moulded to any shape that is desired.

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PHYSICS

## Physicists Study Effects of Strong Winds on Skyscrapers

### Tests Made With Building Model in Wind Tunnel To Determine the Safety of America's Giant Structures

**A**NOTHER official government investigation is getting under way in Washington. The men involved in the new probe are studying a problem of vital concern to every city in America.

The investigators working now are scientists, and their problem is to find out whether skyscrapers—including the ten and twenty story skyscrapers of the average American city—are safe. The government is anxious to know if giant structures give adequate protection to the thousands of people who work within their lofty walls.

One key question the probing scientists seek an answer to is: Just what is the effect of terrific winds on skyscrapers—winds that often make the tallest buildings sway?

In charge of Uncle Sam's investigation, the only government skyscraper probe ever attempted, is the U. S. Bureau of Standards, with a capable staff of technical experts equipped with unique new instruments.

Scientists, led by Dr. H. L. Dryden, authority on aerodynamics for the Bureau of Standards, have already launched their research program. They have acquired a miniature model of the titanic Empire State building, which is being tested under various conditions of wind velocity. A picture of the model appears on the front cover of this issue of the SCIENCE NEWS LETTER.

Under the guidance of the American Institute of Structural Steel, a series of tubes have been installed in the four faces in the outside walls of the actual Empire State building at three different floor levels—the 36th, the 55th and the 75th. Attached to pressure-recording devices, these tubes measure approximately the wind pressure and suction on the building. The location of the instruments is such that while pressure is

being measured on the windward side of the building, the pull from the partial vacuum is being recorded on the leeward side.

Dr. Dryden tells just how Uncle Sam goes about checking up his model tests with the actual measurements being conducted on the full size structure. He says:

#### Saving for Builders

"Our model was put in the ten-foot wind tunnel so that we could measure pressure conditions and wind speed at the same places on the model's surface that are being measured on the building itself. Experience in wind tests has taught us that the corresponding pressures and speeds ought to be substantially the same. If this is so, builders of great skyscrapers of the future will not need to go to the expense, trouble and labor of putting wind and sway measuring instruments in the buildings at strategic points. For models will do the work quicker, cheaper and more efficiently.

"However," Dr. Dryden continues, "in this connection it should be borne in mind that our government is not testing the strength of the model under examination, but is simply measuring the effect and force of the wind on the model. We can simulate wind conditions in our wind tunnel up to 70 miles an hour.

"We fastened the model securely in the wind tunnel and measured the pressure at a number of widely distributed pressure holes for different wind speeds and wind directions. We also attached the model to suitable balances and measured the overturning moment and its point of application."

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