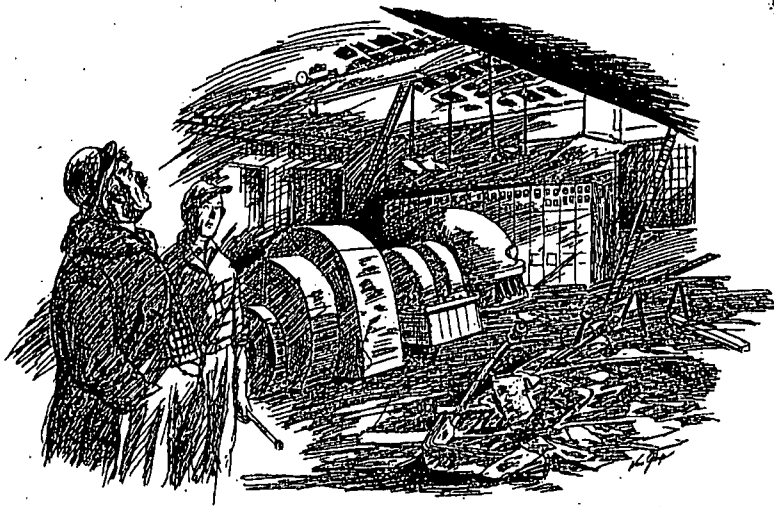




"Fifteen minutes later I was looking at one of the worst fouled-up plants I ever saw."

Marmaduke 'Dehydrates'

► LAST WEEK when George Edwards came to town Phil Swain reserved one of our private dining rooms on the 33rd floor, and all us editors had an interesting time swapping experiences during lunch.

George came up with one that I wanted to get Marmaduke Surfaceblow's ideas on. So next morning I stopped in at the old consulting engineer's office above O'Houlihan's Machine Shop & Engine Works.

The old boy seemed a little annoyed as he looked up from his roll-top desk and saw me.

"George Edwards told us about some fancy trouble-shooting I'd like to get your comments on," I began.

"BULGEWATER ON TROUBLE SHOOTING," roared Marmy, popping his saleties. "I'll tell you about a plant that needed dehydrating—and I'm the guy that did it—in record time."

With that the old gent shoved aside *The Racing Form* he had been studying, plopped his feet up on his desk, and blasted away.

"Back in 1932 I was a boiler inspector down in Maine. One of my plants was a small paper mill. The chief engineer was out the first time I called, so I doubled back on my tracks a few

weeks later because I wanted to meet him and point out a few dangerous things I found in his plant.

"Arriving in town that evening, I called him at his home from my hotel. I introduced myself and mentioned some of the things I wanted to see him about next day. He answered the phone, said he had just arrived home and had a tough day.

"Then as an afterthought he said, to my utter surprise, 'Glad you called, inspector, because the turbines, motors, switchboards and cables in the main engine room will have to be dehydrated.'"

"DEHYDRATED?" I yelled into the receiver, thinking I was dragging my anchor. 'SAY THAT AGAIN.'

"That's right," he came back talking as if a little tired. "You see, sir, the sprinkler heads opened up under the roof right over that equipment."

"The heads opened up?" I echoed. "Why?"

"Well," he said calmly, 'the roof ought on fire last night, so we had to break out the hose and put the roof fire out—but that fire is what opened up the heads.'

"Now, wait a minute," I cut in, getting up a full head of steam. "How come the roof was on fire?"

"It's like this," he explained patiently. "That short in the bus bars, in back of our 15-panel main switchboard, set on fire the temporary plywood shield that we put over the bus!"

"Hold it again, Mac," I yelled. "Hold it. Now—what in hell did you say about a SHORT?"

"Maybe you noticed those bus bars are 1/4 inch thick and four inches wide," he explained. "Well, 15 of them burned away completely for about two feet of their length!"

"Batten down the hatches for a second," I cut in again, "and tell me why those bars burned."

"That's easy," he answered. "They burned because so much moisture collected on the bus structure that the bus bars shorted explosively and knocked out all the power in the plant."

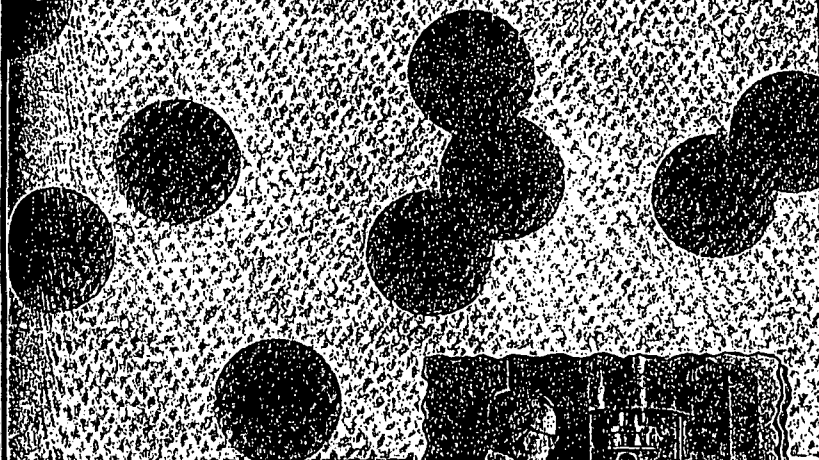
"By that time I was fanning myself with my derby and sweat was pouring down my face as though I had taken a 'green one' over the bow."

"Listen," I hollered into the receiver. "How did moisture get on those bus bars in the first place?"

"How?" he repeated, a little annoyed. "Why, it just couldn't help getting on the bus bars because it was

(Continued on page 220)

MARBLES for MICROBES



Above—100,000X enlargement of latex spheres used to calibrate electron microscope in Nalco Laboratories. Actual diameter of spheres is 0.35 microns—.00000973 inch. Right—inserting specimen holder in vacuum chamber of Nalco electron microscope.

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PERHAPS even too small to make good marbles for microbes, these tiny spheres help Nalco Scientists in their investigations of the microscopic realms of matter only recently made visible to the human eye by the electron microscope.

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New reprint of A.S.M.E. Paper No. 32-A-30: *Experimental Studies of Boiler Tube Metal Temperatures: Effect of Heat Transfer Rate and Deposit Thickness*, gives technical data on high-heat-transfer-rate effects (140,000 to 300,000 Btu/sq. ft./hr.) at pressures from 250 to 3500 p.s.i. 16 pages, with tables and diagrams. Author: C. Jacklin, Director, Engineering Research, National Aluminate Corporation.

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