GENERAL SCIENCE

California

Science Service Medical Writer Takes a Vacation By Visiting Laboratories of Astronomy and Physics

By JANE STAFFORD

BARON GRIMM, the man who wrote Snow White and the Seven Dwarfs, had a world-famous idea about a looking glass which has kept its appeal for little girls and grown women for several generations.

Modern astronomers with their real mirrors, however, have out-stripped story-teller Grimm by a much greater distance than the difference between the one-and-a-half-inch mirror in your vanity and the towering 200-inch reddish thing they told me was a mirror when they showed it to me in one of the "shops" at the California Institute of Technology. By way of identification, this giant looking glass is the mirror for what will be the world's largest telescope, to be mounted on Mt. Palomar, 200 miles to the south of Pasadena.

It might be very nice to look into a mirror that tells "who is the fairest in the land," especially if you have a sneaking suspicion, as Snow White's murderous step-mother had, that you are that fairest person. But think of looking into a mirror that turns back time as nothing else in the world can do, and that wipes out space with the speed not of lightning but of light itself. This is a mirror, moreover, that will thumbprint the farthest stars and at the same time give a clue to the structure of the tiny, invisible atoms which, bulked together, make up you and me and the sun and the stars and the 200-inch mirror itself and the tiny bit of glass in your vanity and everything else in the world.

Related to Baking Dishes

This famous 200-inch mirror looks nothing like any mirror you ever saw or looked in. It stands about three times as tall as the average person. I looked down on it from a balcony at the end of a room that seemed as vast as a cathedral and even at that distance the thing—it is hard to call it a mirror after you have seen it—looked huge. It is made of Pyrex glass, related to but not the same as the Pyrex baking dishes.

I was warned I would be disappointed when I saw it. From the standpoint of a woman looking at a mirror, it is disappointing. It does not even look like glass. It has more the appearance of a huge circular slab of concrete which has had rusty water spilled over it. Of course, the mirror surface was turned away from me, but it would look the same from the other side at this stage, because it has not yet been polished. The scientists are still "figuring" it, meaning they are still measuring and calculating its size and shape and reflecting power down to the last fraction.

Dustless Garb

Greatest care is being taken of it. No one except the crew working on it is allowed in the same room. Everyone else—even such distinguished visitors as former President Hoover—must view it from the same glass-enclosed balcony I stood on. The men working on the mirror must change from street clothes to special white uniforms and soft-soled shoes every time they enter the room containing the mirror, just as surgeons change before entering an operating room. This is because the slightest bit of hard material, even a grain of dust or sand, might spoil the giant mirror.

When it is finished and all polished, it will be the shiniest mirror in the whole world, I am sure, judging from the gleaming bits of other astronomical mirrors I saw lying about the shops at the offices of Mt. Wilson Observatory, not far away in the same city. Even when it is finally polished, I doubt whether anyone will look at his reflection in the giant mirror, and though rouge (jeweller's rouge) is used for the polishing, I am equally certain no woman will touch up her lips or powder her nose in front of this truly grand looking glass.

To Catch Starlight

It will be used to catch the light from stars so far away that they could not be seen even by looking into the powerful telescope itself. These stars are so far distant that it has taken hundreds of millions of years for their light to come near enough our earth so that there is a chance it will be caught by the 200-inch mirror when it is finally mounted and turned toward the sky. While it will thus extend the boundaries of our universe some three times their present limits and open up an unexplored sphere about thirty times the volume of that which has already been sounded, its greatest value will lie in the new

THE CYCLOTRON

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