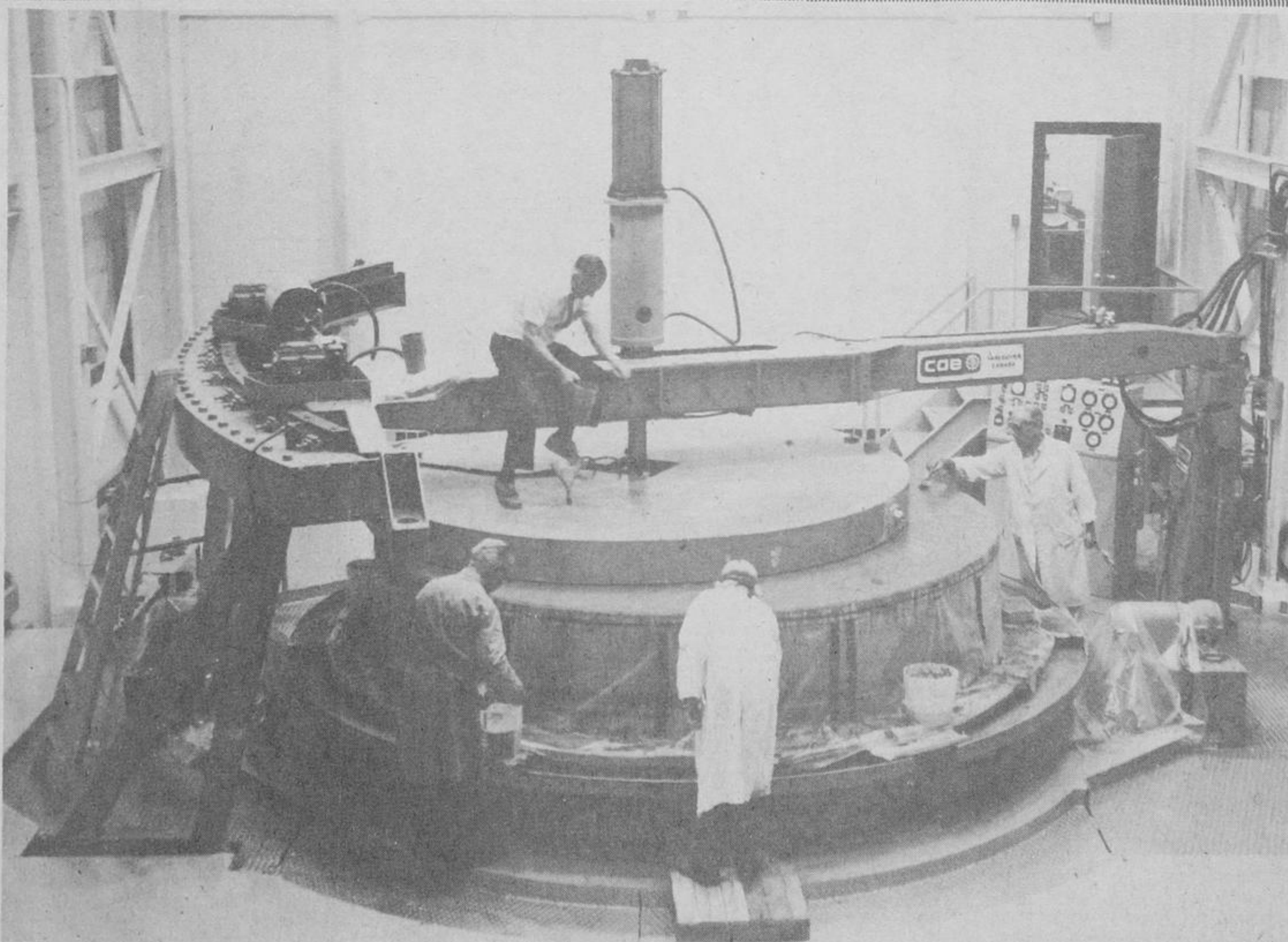


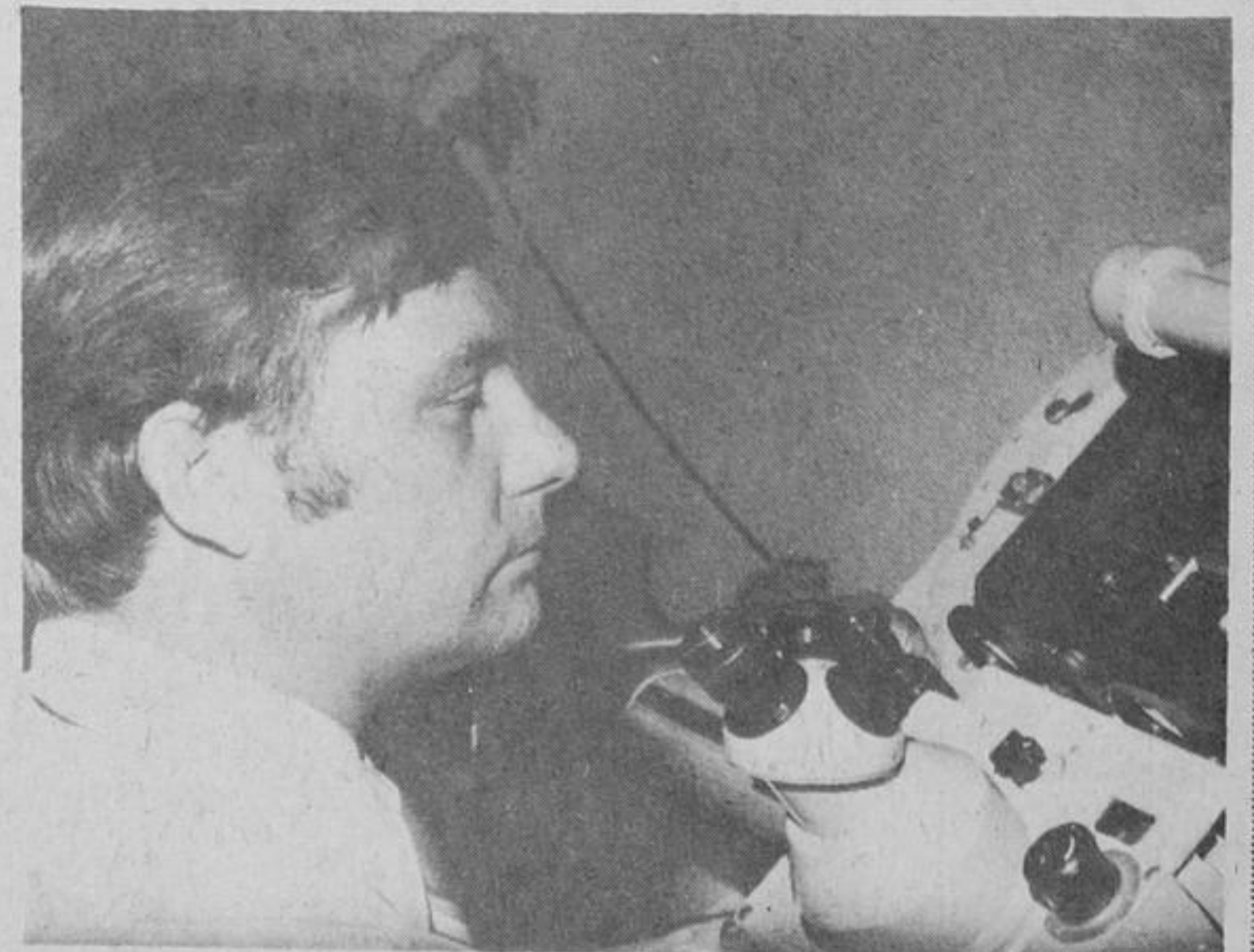
Wednesday, August 20, 1975



Chief Optician Roy Dancey (at the top of the photograph), checks the final figure of the 140 inch mirror that will be installed in the Mauna Kea telescope in Hawaii. The

mirror is two feet thick and weighs 2½ tons. Above, opticians are engaged in the final grinding and polishing of the rear surface of the mirror at the Dominion

Astrophysical Observatory in British Columbia.



Dr. Rene Racine, a staff member at the Dunlop Observatory is involved with the

instrumentation level for the Canada-France-Hawaii telescope.

Dunlap astronomers build telescope in Hawaii

By Denise Romberg

The scientists who inhabit the Dunlap Observatory in Richmond Hill are trying to get closer to the sky.

The plan is a Canadian joint venture with France to install one of the world's largest telescopes atop the presumed extinct volcano, Mauna Kea in Hawaii.

When the telescope opens in 1978, the star gazing scientists will be able to take full advantage of a virtual astronomer's paradise.

The observing site is set 14,000 feet above sea level. The location provides the ultimate in atmospheric conditions and although it may sound like a nice place to visit, astronomers have experienced some difficulty getting used to the height.

Upon first arriving at the site, directly from sea level, the visitors may experience a certain light-headedness.

It may take a day or two at the living quarters 4000 feet below before the astronomer is ready to begin his work at the site.

Cloud free site

The peak of Mauna Kea is almost cloud free. In fact, when compared to other observing sites, Mauna Kea has the greatest number of viewing nights, or as the astronomers refer to them, photometric nights.

At the Dunlap Observatory, the viewing hours range between 1000 to 1200 hours per year, while at Mauna Kea, the average is over 2500 hours.

The lack of humidity at the summit will permit extensive work in the field of infra-red astronomy.

"The site permits the study of cold objects like new born stars and the study of quasars, which have infra-red rays but can only be observed from a dry site", explained Dr. Rene Racine, a professor at the Univer-

sity of Toronto's Astronomy Department.

Dr. Racine has been working on the instrumentation level of the telescope in Mauna Kea. One area of his interest is the photometric equipment that will be used to measure the brightness and color of stars.

From his office at the Dunlap Observatory he explains the plight of the modern scientist.

"You are never satisfied as an astronomer. You always want a bigger telescope to see fainter stars".

National project

The telescope at Mauna Kea became a national project a few years ago when Canada entered an agreement with France to cooperate in the field of science.

At the time of the agreement, they had no specific project in mind but later the French approached Canada to consider the \$18 million joint venture atop Mauna Kea.

The University of Hawaii has a 15 percent interest in the project since they supplied the water and the hydro, plus the road that winds to the top of the mountain. Hence, Canada and France will share the other 85 percent of the viewing hours at the site.

"The external shell, which we call the dome, is being constructed under Canadian auspices", explained Dr. Donald MacRae, Director of the Dunlap Observatory.

The structure will rise 100 feet above the site and is designed to withstand winds which can reach up to 100 miles an hour at the mountain's peak.

Dr. MacRae is one of four Canadians on the board of directors of the Canada-France-Hawaii Telescope Corporation, a company set up to supervise the building of

the Mauna Kea telescope.

Going first class

Dr. MacRae talked about what the site at Mauna Kea means, both to the Dunlap Observatory and to Canada.

"In Canada at the present time we have two major telescopes, one in British Columbia and one here. They are essentially the same size."

"Although originally they were large telescopes by world standards, they are no longer large telescopes and that means if we are to do first class astronomy we must have access to a first class telescope, by world standards, and a first class site, by world standards. And that's what we're going to get in Hawaii as a result of this big telescope."

He explained the mirror for the telescope is also being prepared in Canada at the Dominion Astrophysical Observatory in Victoria, British Columbia.

There some of the best opticians in the world have been preparing the surface of the mirror which measures 140 inches at its diameter.

3-year polish

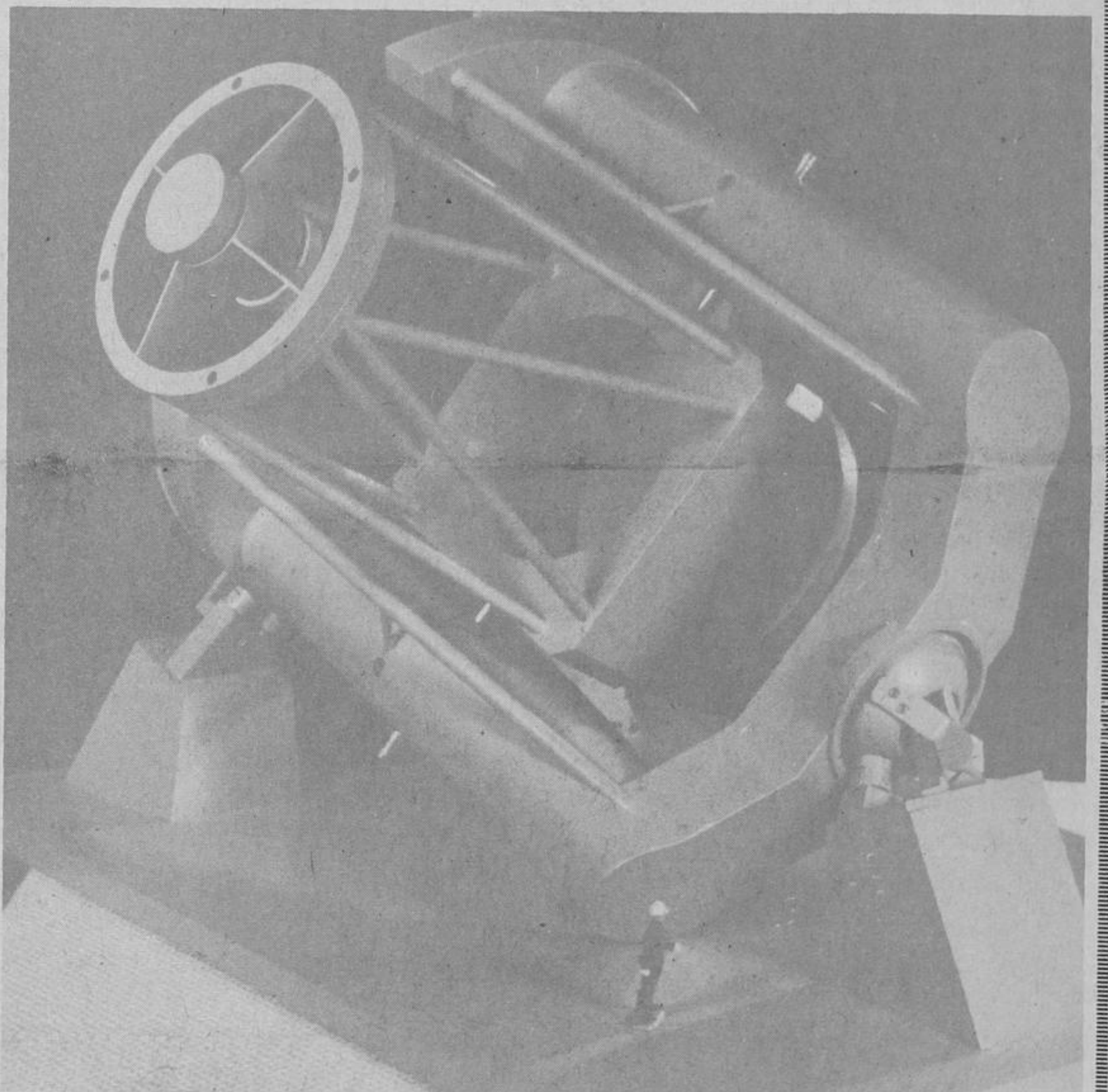
"They started grinding the front surface in October of 1974, and they hope to finish in September of 1977. The grinding and polishing takes three years, essentially", said Dr. MacRae.

"The first part of that is very course grinding, or curve generation and that phase is just about over now. They're just about to begin the grinding and polishing stage which is expected to last for a good two years".

The project will not be the first on the top of Mauna Kea.

The University of Hawaii has installed two telescopes, the British are presently considering the site.

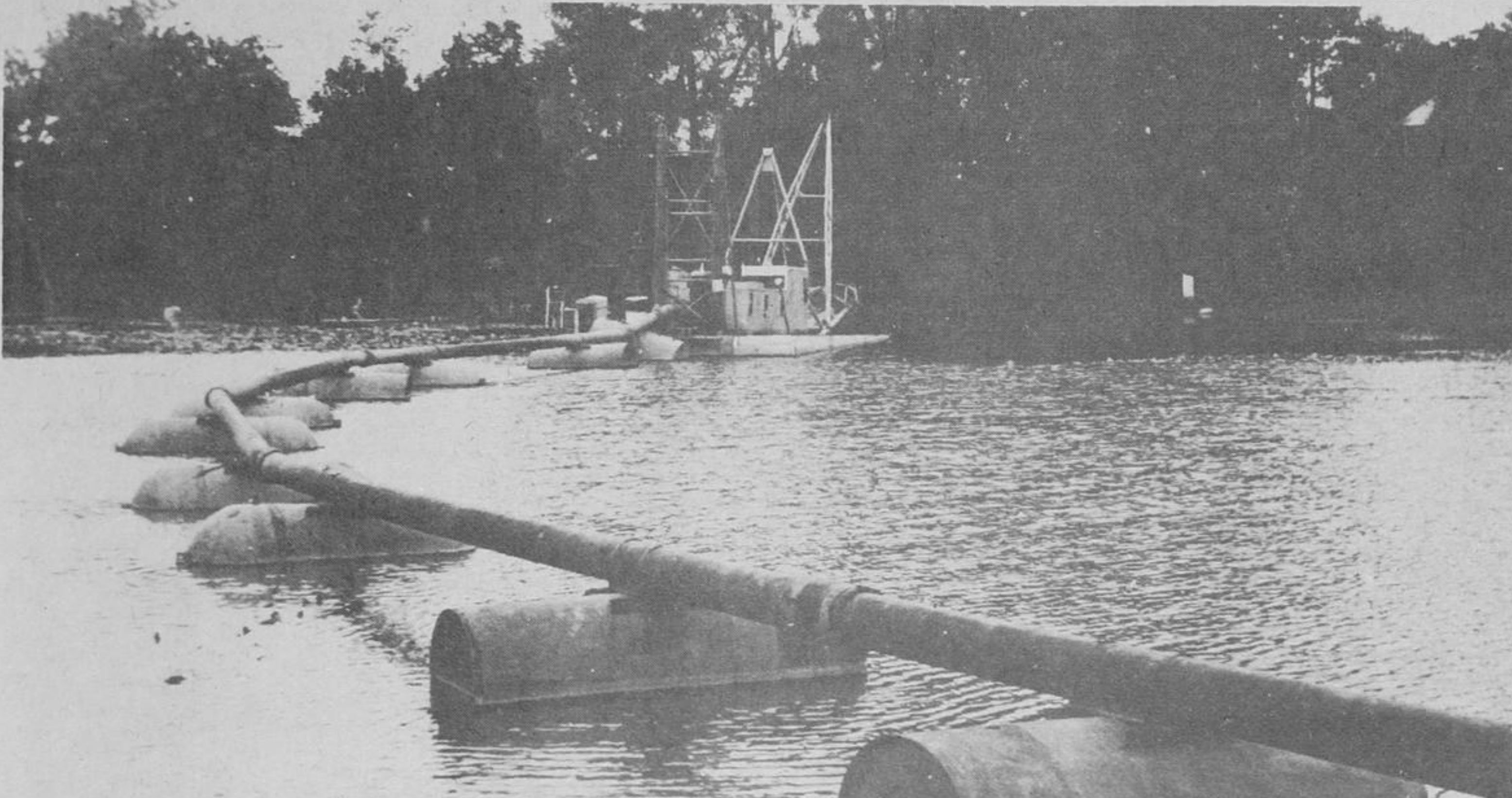
NASA, a U.S. agency, already has one telescope there and is considering a second one.



A scale model of the 140 inch telescope that will be installed at Mauna Kea in 1978. This telescope is a joint venture project between Canada and France

and will be used for research in infra red astronomy and spectroscopy.

No evil Mill Pond dragon found yet



The big pump, its pipe and pontoons seen above, many not be uncovering any treasure trove in the depths of Richmond Hill's Mill Pond. But it is creating a

treasure of a rejuvenated, revitalized beauty spot for the residents of this area. When the remedial work is done this fall and the water creeps back to its normal

level, fish can swim, ducks and geese can frolic, and children can sail their toy boats in an idyllic setting.

By Michael Tenant
What evil lurks in the murky depths of Richmond Hill's Mill Pond?

Pirate treasure? Missing persons? A bottomless hole?

No, probably there is nothing so news-worthy hiding beneath the town's popular attraction.

But the question is a fascinating one, particularly for all the hapless anglers who have lost hooks and lines there each year.

For the curious, the dredging project, now nearing completion, provides a certain satisfaction.

The plan is to take four to five feet of yucky stuff off the pond's bottom — as though in preparation for a giant diaper change.

Thus far, the team of dredgers has not disturbed the sleep of a terrible monster that might destroy the town, as in an old Boris Karloff movie.

Snapping turtles

But according to David Hamilton, the town's director of parks and recreation, the dredgers have aroused several mean Snapping Turtles.

Luckily they have not been quite big enough to threaten the peace.

Two major finds to date are a wagon wheel and some wooden pipe.

Allan Bales, who has lived beside the pond for more than 50 years, can account for both discoveries.

"Back about '21, when the pond had clean water, they had a pump house (near the south side of the pond)," he said. "But the actual pond water got too warm in the summer, so they ran some

pipe to the stream at the north end."

As for the wheel, Mr. Bales said that in the days the wagon was used there was no dam at the south end and the north end was high and dry.

Someone could have abandoned a wagon on the shore of the stream where it was covered when the water level rose, he said.

It is known an old furnace from the town hall also found a resting place there, but so far has not come to light although there have been other finds besides mud and the typical plant growth found in ponds.

A large pump on a raft, working in the centre of the pond, sucks up the sediment from the bottom and forces it through a large pipe to the north end.

Occasionally a clanking noise can be heard in the pipe and a black lump is spewn out, along with the thick black liquid from the bottom.

The pipe looks large enough to accommodate a basket ball.

Muddy feast

To the ducks' liking, it makes no difference what is down on the bottom. They seem to enjoy swimming in the current created by the output stream or hunting for a meal in the smorgasbord of mud.

Though Mr. Bales does not think there is anything much on the bottom, Mr. Hamilton believes there could be "a few items."

The town's people of years gone by may not have been so environment-conscious as today, he said.

There is just no telling for sure. All we can do is watch and wait.