

A Fantastic Voyage

at the Adams

Noel Cooper

1966

In order to convey some indication of the unique technical challenge represented by “Fantastic Voyage,” including the never-before-encountered photographic problems which it posed, it becomes necessary to present a brief synopsis of the extremely off-beat story:

Grant, a special American agent, delivers Czech scientist Jan Benes to an airport in the USA after helping him escape from behind the Iron Curtain. The entire Secret Service is involved in getting Benes safely from airport to city. But still the enemy manages to make one last desperate attempt to destroy Benes and the precious secret he carries in his brain. Benes suffers a severe head injury. A normal brain operation is impossible.

CMDF, “Combined Miniature Deterrent Forces,” an ultra-sophisticated scientific organization working from secret subterranean headquarters, decides to do the repair job on Benes’ brain in the only way possible, from within, using a ruby laser.

CMDF’s plan is to miniaturize an experimental submarine, the Proteus, along with its crew of scientists and doctors, to microbe size, invisible to the human eye. The sub, powered by a microscopic nuclear particle, would be injected into Benes’ bloodstream at the base of the neck and make its own way to the brain. The specific target, the damaged area, is the thrombus—less than half a degree off-center in the mid-brain. The exact route of the Proteus, planned on a wall-size illuminated map of the bloodstream, is from the carotid artery through the arterial system to the brain, then back by way of the venous system through the vein of galem, down the sinuses, into the jugular vein to the base of the neck, to be removed, as it was injected, by hypodermic syringe. Benes’ bloodstream will be slowed down by hypothermia from its usual 40 mph speed to enable the miniaturized sub to maneuver in the body’s internal currents. Surgeons and scientists in the operating theatre will follow the Proteus’ path through Benes’ bloodstream via a radio-active tracer in the sub and keep constant check via three-way television. The entire operation must be completed within 60 minutes.

The crew of the Proteus includes: Dr. Duval, top brain surgeon at CMDF who will perform the internal operation, Cora Peterson, his attractive and competent assistant, Dr. Michaels, a circulatory system expert who will act as navigating guide for the voyage, Captain Bill Owens, Navy officer who designed and will pilot the sub, and Grant, whose official chores will call on his wartime experience as a frogman and communications expert.

From their control tower, which overlooks the main miniaturization chamber, the operating theatre where Benes lies under a thermal blanket, General Carter and Dr. Reid watch as the sub starts to shrink, keeping tabs from various tracking stations, as does their communications aide. From inside the Proteus, the walls of the miniaturization chamber seem to fly away into space. The floor suddenly falls away, creating an airborne effect, and the technicians outside the sub turn into giants.

When the Proteus is only a few inches long, miniaturization is halted so the sub can be lowered into a large glass ampule containing saline solution. Then miniaturization is continued until the entire ampule is only a few inches long, the size of a hypodermic needle, which is exactly what it becomes.

The now-microscopic Proteus is injected into Benes' arterial system. As the sub speeds down the length of the needle into the vertebral artery, it suddenly enters a dazzling world of color and beauty, a floating wonderland of huge red corpuscles, whirling globules, platelets and other particles in the straw-colored stream.

To save time, the voyagers decided to take the Proteus through the heart. Because the normal beating of the heart would cause a turbulence that would severely buffet, and finally crush the sub, the surgical team tending Benes' still body in the operating theatre has to "turn off" Benes' heart for 60 seconds, to allow the sub to race through. As the Proteus enters the vena cava, the deafening beat of Benes' heart sounds like artillery fire. On the last beat before the 60 second cut-off, the Proteus speeds through the parachute-like' tendrils of the tricuspid valve in to the bluish stream of the right ventricle. Now all is silent as the Proteus glides through a forest of tendrils and chordae tendinae, huge roots extending into the heart walls. As the precious seconds tick by, the sub, bathed in weird St. Elmo's fire, steams toward the semi-lunar valve and is finally swept through the aperture into the pulmonary artery by the first thundering surge of Benes' re activated heart.

When Owens' controls show that the sub is losing air from its left tank, Grant and the scientist climb into their skydiving suits and drop out through the sub's escape hatch into a capillary. They drag the sub's snorkel tube to the wall of an alveolus leading into Benes' lung in an attempt to "steal" some much-needed air.

Floating corpuscles careen into them to make the work more difficult. At their miniscule size, even Benes' slowed down breathing creates a tremendous wind-tunnel effect blowing them upward with every inhalation, downward with every exhalation.

In the control tower, tension mounts as the clocks show only 32 minutes left before the sub and its occupants will start to grow back to full size inside Benes's body.

While short-cutting through a lymphatic node, the Proteus runs into a full scale battle between bacteria and antibodies. The antibodies hook up to completely encase the bacteria and the sounds of the battle are audible in the vibrating sub.

A detour past this battle, the Proteus heads for the inner ear. Any sound from the Operating Theatre during this improvised leg of the voyage would cause vibrations that would shatter the sub. Absolute silence is ordered by General Carter, and the doctors and nurses freeze in their places.

But the trip through the lymphatic system has clogged the sub's propulsion vents with seaweed-like reticular fibres. The now powerless vessel sinks to the floor of the inner ear. Grant, Cora and Michaels drop out of the sub's escape hatch and begin to frantically tear at the clinging fibres. While they are wasting valuable seconds in a desperate attempt to clear the sub's vents, a nurse in the operating theatre accidentally drops surgical scissors. The sound causes sudden severe vibrations, and the miniaturized humans are hurled against the walls.

Meanwhile, Duval, using a transistor and a length of wire taken from Grant's wireless, has been working desperately to repair the shattered laser, without which the operation cannot be performed. With their radio dismantled, the submarine is no longer able to communicate with the control tower. They are now completely on their own, with only 12 minutes to go.

With the Proteus bathed in bright light seeping through Benes' eardrum from the outside world, the scientists plan their last desperate dash to the brain, the cathedral of the human body.

The clock shows only six minutes remaining when Grant, Duval and Cora leave the sub to attempt to clear the brain clot, carrying a laser which may or may not work.

As the clock reaches Zero, and with prayers that the ruby laser has sufficient power left to do its curative job, Grant fights to finish it, while the submarine starts to grow and is attacked by masses of macrophages that crush and devour it. Grant and the scientists are already working desperately on borrowed time when the "Fantastic Voyage" comes to an unexpected and shocking conclusion.

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