

# UA Meteorologist Outwalks Troops In Trek To Test Desert Dehydration

By JOHN RIDDICK

A University of Arizona scientist has outwalked seasoned troops under summer desert conditions—without water.

During World War II, the Army found that the best its troops could do after tanking up with water in a desert sun was 18 to 20 miles.

Dr. William D. Sellers, a meteorologist in the UA Institute of Atmospheric Physics, recently walked 24 miles—without drinking any unusual amount of water before starting.

The Army was trying to find if you could train troops to fight in the desert on less water.

But after testing soldiers in the desert, the Army concluded that with a certain body weight a man is going to need a certain amount of water—no matter how much he has trained.

Like a lot of people, Sellers—who in his college days was captain of the cross-country team at the University of California at Los Angeles—disagrees.

"I think maybe you can learn to tolerate losing water," Sellers said.

His colleague, Dr. James E. McDonald, has been persuaded by the Army point of view—some men will take more punishment than others but their water needs are the same considering weight.

McDonald was wondering last summer if a man could walk out from under the mushroom of an atomic bomb before the radioactive debris settled on him.

The bomb might cover a radius of 17 miles, which—if the wind were now blowing—would have to be covered in three hours before the radioactive death came down.

McDonald drank water until he was nauseated but managed to walk only 12 miles in three hours before collapsing.

Then on a challenge from McDonald, Sellers decided to see what he could do in the desert sun. He covered his 24 miles in five hours which may or may not have put him out from under the theoretical mushroom.

One of the Army's findings was that it doesn't make any difference whether you fill yourself with water before you start or drink it along the way. You get the same benefit from a given amount of water.

To get its information, the Army took troops to the California desert. At the time, it was concerned about fighting in Africa.

The soldiers were put under every imaginable condition and weighed for water loss before and after stress.

The conclusion was that it's all a matter of physiology. To use up

a certain number of calories of heat in the exertion of walking means the loss of a definite amount of water.

Moreover, the effect on the body of losing water through winds blowing—or gaining heat through hot winds—is definite.

So that finally, it's a simple matter of balancing the budget.

When a man has lost 5 per cent of his body weight, he begins to get irritable. When he loses 10 per cent, he refuses to walk any more.

And when he loses 20 per cent, his blood becomes so thick his heart won't pump it and he dies.

Along that route, thirst is not a very good gauge of the body's need of water. A man will be dryer than he knows. Fatigue, on the other hand, is a good sign of dehydration.

A small man on these terms would need less water than a large man. So it might be best to send a small man on an important mission. On the other hand, a large man might be able to carry more water if it were available and this would put him ahead.

But two men of the same size

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