

## The Skeptics SA guide to

## **Firewalking**

The Titan Prometheus, according to Greek mythology, was the giver of the sacred flame to mankind and is a common myth known to many peoples.

Fire has long been venerated variously as the seed of life, the agent for purification and renewal, and as a sacred element.

An essential function of many practitioners of the paranormal is their demonstration of man's mastery over the fire element by walking on burning embers or holding red hot irons without apparent injury.

In general, firewalking is confined to walking over glowing embers, and ancient accounts by Virgil and Pliny speak of these firewalks in Cappadocia (a region of Asia Minor) over two thousand years ago.

As recently as fifty years ago firewalking was practised in China, Japan and Bulgaria and can still be seen today in Sri Lanka, Fiji, India, Malaysia and North Africa.

It is awe inspiring to see bare-footed humans pass over glowing embers or super heated stones unscathed, particularly when, even as a spectator standing some distancefrom the fire, the intense heat radiating from it can be felt. In recent times, motivators have been conducting seminars purporting to teach people how to overcome their fear of being burned. By teaching them how to control their minds they claim that they are able to overcome any limitation they have created in their lives whether it be fear of failure, rejection or heat. One particular American motivator teaching mindover-matter was Robert Young, who claimed that he could lead people over fires with a temperature of two thousand degrees Celsius and whose techniques are being applied to help disadvantaged children. He further claimed that the US Army has adopted his theories and that when you turn fear into power, you can do anything.

Demonstrations of firewalking by those who have undertaken Young's courses of instruction would certainly seem to bear out his philosophy. After repeatedly going over the mental state required of the participants, which included confessing one's innermostfears both verbally and in writing, all successfully negotiated the hot coals unharmed. However, far from being mind over matter, the ability to seemingly endure the unbearable has a simple scientific explanation.

At one time or another most of us have picked up a hot cinder and dropped it back into the fire without feeling any discomfort. It was done quickly and probably preceded by licking the fingers. The principle involved in firewalking is the same, the natural moisture on the soles of the feet and the short period of time that they are in contact with the hot coals precludes the possibility of being burned. A simple analogy is to imagine a cake baking in an oven at 200°C. The temperature of the cake, the tin and the air are all the same. Touch the tin and you'll be burned, touch the cake and although it feels hot you'll be safe, hold your hand in the air above the cake and there will be little discomfort. The embers in the fire have low heat content and poor thermal conductivity, so if you don't dally too long on each step vou won't get burned.

One scientific investigation carried out by Chas R Darling, and reported in *Nature*, September 28, 1935, consisted of pressing a thermal junction on to the fire intermittently so as to imitate the period of contact of each foot and the interval between each step, a number of separate trials showed a rise of  $15-20^{\circ}$ C in the junction: conclusive proof that the feet of the performer would not be hot enough for blistering to occur. It should be noted that in most

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firewalking demonstrations there is much hype going on prior to the demonstration during which time the coals have cooled considerably. More often than not, participants also step from a wet or damp patch of ground on to the hot embers and off the other end on to another wet patch.

There are also chemical preparations which can be applied to the soles of the feet to provide additional insulation. Likewise, red-hot metal can be handled or held between the teeth without harm provided the necessary precautions are taken.

Summed up, there is nothing mystical about firewalking, fire-eating or handling red-hot metal: it requires only an elementary knowledge of physics.

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## **Skeptics SA**

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