THEY SIMPLY WATCH THEIR STEP

Explaining Away The "Miracle" of Fire-Walking

THE cables told us a few days ago that an R.A.F. Squadron-Leader and a friend had walked unscathed through a 15ft. trench of burning embers at a Mohammedan festival in Rangoon. Actually the performance merely confirmed the conclusions which scientific investigators have already arrived at concerning fire-walking. Saying, according to the cable, that "faith alone is enough," the pair, anxious no doubt for a new experience, removed their boots and socks and accomplished a "miracle" which, despite Indian showmanship, has nothing to do with faith.

In 1937 Harry Price, honorary secretary, University of London Council for Psychical Investigation, tackled this ancient mystery in very thorough fashion. He wanted to know everything possible about it so, using highly scientific apparatus, he made a series of experiments with the help of others interested. Some of these tests were broadcast and televised by the BBC.

In his book, *Fifty Years of Psychical Research,* Price describes his experiences and says that the experiments proved, once and for all, that no occult or psychic power, or specially-induced mental state is necessary in a fire-walker.

Though fire - walking has always puzzled researchers, he says, no attempt was made to solve the mystery until he decided, in 1934, to test such professional walkers as were willing to be examined scientifically. He advertised for subjects, but received no replies. Twelve months later he heard that a young Kashmiri, Kuda Bux, who was doing trick blindfold reading in a London cabaret, was willing to be tested.

Fire trenches were made to Bux's specifications and at the final demonstration the one walked on was 11 feet long, six feet wide and nine inches deep. To make the fire, which was lit at 8.20 a.m., seven tons of oak logs, one ton of firewood, a load of charcoal, ten gallons of paraffin and 50 copies of *The Times* were used.

The fire was ready by 3 p.m. Tests showed that the heat of the surface was 430 degrees Centigrade and the interior 1400 degrees. Bux walked barefooted over the fire twice, each time in four strides, and at both attempts each foot was in contact with the embers twice. He was quite unharmed, but some amateurs who duplicated the feat were burned—not severely.

Where'er You Walk

The experiments established the fact that a man weighing 120 pounds, with chemically unprepared feet, can take four rapid steps on charcoal at 430 degrees Centigrade without injury, the average time of contact for each step being half a second. It was not clear why the amateurs were burned, but as they were nervous and floundered, that was thought to be the reason.

Ahmed Hussain and three volunteers doing the fire-walk at Carshalton, April 7, 1937 (surface temperature, 575 degrees Centigrade)

But that did not wholly solve the secret of fire-walking, so further experiments were made. A Moslem from Cawnpore, Ahmed Hussain, a "magician" by profession, walked over a surface 575 degrees Centigrade. He was quite unburned. Hussain claimed that his immunity could be conveyed to others, so five amateurs were chosen to walk the trench. Among them was an Englishman, Reginald Adcock, who weighed 160 pounds.

They were specially examined and their feet tested for possible chemical preparations. They lined up behind Hussain. After some prayers, Hussain instructed them how to walk, and they crossed the trench in 1.5 seconds. Hussain failed to impart his immunity to the amateurs, who were all slightly burned.

The BBC Took Part

The next experiments were at Carshalton in 1937 and the BBC broadcast a running commentary. This time the surface temperature of the fire was 740 degrees Centigrade and the trench 20ft. long. Hussain muttered the usual prayers, stepped into the trench and had his feet blistered. Then Adcock walked and was slightly burned.

During a second demonstration Adcock walked the 20ft. trench in dry, rope-soled shoes, taking seven steps in 3.6 seconds. The soles of the shoes were quite unburned. The sole of one of the shoes was then wetted and placed in contact with the fire. Some seconds elapsed before steam was seen rising from the sole, proving that the "spheroidal state" (sometimes called the "caloric paradox"), a popular explanation of such facts, does not occur in fire-walking.

It became quite clear that, whether done by professional or amateur, the limit of walking on a really hot fire was two steps per foot, with contact-time of about half-a-second each. Confidence had a great deal to do with it, for Adcock, who walked the most steadily of the amateurs, was burned the least.

Tests Televised

Final tests in the grounds of Alexandra Palace in 1937 were both broadcast and televised. The trench was 12ft. long, four feet wide, and nine inches deep. Four tons of oak logs and the usual other ingredients were used. The surface temperature was 800 degrees Centigrade (water boils at 100 degrees). Hussain walked, taking four steps in 1.6 seconds and was uninjured. Adcock took 1.8 seconds and three steps (right foot on embers twice) and was not burned in any way. Adcock proved himself a better performer than either Bux or Hussain because the minimum mean time of contact for each of his feet was 0.60 second against Bux's 0.55 and Hussain's 0.40 second. Adcock's feet had been in contact with the embers longer than the feet of the professionals.

Asked for his reactions, Adcock said that he felt great confidence when about to start his last walk—confidence born of two previous attempts. There was no pain; merely a tingling. Another of the amateurs was slightly burnt where a piece of red-hot charcoal stuck to his instep. Neither professional nor amateur walkers were burnt on the ball or heel of the foot. Any injuries were on the instep or sides of the feet where they sank into the embers.

Largely a Matter of Confidence

In the 1937 experiments it was found that the secret of fire-walking lies in (a) the short contact-time of each foot with the embers, with a limit of immunity of two steps per foot; (b) the low thermal conductivity of burning wood or burnt embers; (c) the confidence and steadiness in walking. Damp feet are a disadvantage, as hot embers stick to them. But no support was found for a theory by Sir Leonard Hill that in the case of Bux, the increased immunity from burning was due to a power of controlling the activity of sweat glands of the feet so that they were abnormally dry.

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Reginald Adcock, an English "amateur," doing a fire-walk during televised experiment at Alexandra Palace, April 20, 1937. He was quite unburned. Surface temperature, 800 degrees Centigrade