

has been appointed to the chair of chemistry in the University of Aberdeen in succession to Professor Frederick Soddy.

SIR J. J. THOMSON, master of Trinity College, Cambridge, who recently resigned the Cavendish professorship of experimental physics, has been elected into the newly established professorship of physics. This professorship is without stipend, and will terminate with the tenure of office of the first professor unless the university determines otherwise.

### DISCUSSION AND CORRESPONDENCE FIRE-WALKING IN JAPAN

DURING my four years' residence in Japan I had several opportunities of witnessing the spectacular religious or quasi-religious ceremony periodically observed at the Ontake Temple, Tokyo, in the course of which the officiating priests walk barefoot over a bed of live charcoal, throw boiling water over themselves and climb a ladder of sharp swords set edge upward. All these pretended miracles, however, are susceptible of scientific explanation, and it is only with regard to the first-mentioned—the fire-walking—that I venture to ask the privilege of making a brief statement in SCIENCE.

To the great mass of the spectators in the temple enclosure, who do not usually include more than the merest sprinkling of the more intelligent and better educated classes of the Japanese people, the supposed miracles are the clearest demonstration of the supernatural power of the priests, who would have it believed that it is solely to their incantations that they owe their protection from injury. But it is not necessary to be a very close observer of their movements to perceive that the priests are not content with their perambulations, genuflexions and prayers, but are careful to rub their bare feet with salt, *ostensibly for purificatory purposes*, before walking over the fire. This fact brought to my recollection the occasion, forty years ago or more, when Tyndall astonished a distinguished audience at the Royal Institution by plunging his bare arm into molten metal, the then Prince of Wales, afterward King Edward VII., who was

present, being prevented from following Tyndall's example only by the determined opposition of his wife.

So sure did I feel of the efficacy of the salt as a protective agent that on my second visit to the temple I determined to follow the priests in their apparently hazardous adventure, and so after rubbing my feet well in the pile of salt, I walked rapidly over the bed of glowing coal, some eighteen feet long. My confidence was not misplaced. In my feet I felt only a sensation of gentle warmth, but my ankles, to which no salt was applied, were scorched.

After a careful examination of such of Tyndall's works as I had access to at the Yokohama Club, without finding any reference to the demonstration at the Royal Institution, I wrote to Sir William Crookes, who not long before had mentioned to me his association with Tyndall in some of the experiments that preceded the delivery of the latter's famous "Lectures on Light." In due course I received Sir William's reply, in which after reference to certain matters of no special interest in this connection, he said:

I do not know of any published account of Tyndall's putting his bare arm into molten metal, but I can well believe it, as I myself have plunged my hand into molten, almost red-hot, lead. I was in a profuse perspiration at the time, and, immediately before, I dipped my hand into strong ammonia, to increase the spheroidal effect. I do not think the extra precaution was of much use, but I did not like to take a risk when looking at the cauldron of hot metal.

To physicists there is nothing new in all this, but not every scientific man is a physicist, or hypnotism would not have been suggested to me, as it has been, as the secret of the remarkable immunity I experienced.

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### MARCHING IN STEP

TO THE EDITOR OF SCIENCE: In regard to Walter Moore Coleman's note in the April 18 number of SCIENCE concerning variations in phase in the step of a column of soldiers it