

O P E N I N G C E R E M O N Y A D D R E S S

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By Dr. H. Yukawa
President of the Conference

Honored guests! Ladies and gentlemen!

It is a great honor for me to have an opportunity to say a few words as the President of the Conference. The whole group of theoretical physicists in Japan have been waiting for this day with great expectations. It is indeed a rare occasion for us to have such an impressive group of distinguished scientists here in Japan, which is so far away from most of the countries where scientific researches have been done most actively, and where many of the Japanese scientists visited, stayed and learned so much. We heartily welcome our distinguished guests who took the trouble of travelling a long way from their own countries to our country which are so different from each other in many respects. On this very occasion I cannot help feeling the happiness of being a scientists. Such a gathering could have never been realized, unless all the physicists participating. This Conference have^d the one common aim of searching for the universal truth.

The subjects which we are going to discuss during the five days main session in Kyoto and those which were already discussed at the symposia in Tokyo and Nikko are diverse. They consist of the subjects relating to the atomic nuclei and elementary particles and those relating to extra-nuclear phenomena. At

the present stage of theoretical physics, these two parts look very different from each other. In the case of extra-nuclear phenomena, we have been trying for many years to apply known principles (quantum of) mechanics with great confidence and in fact, with great success. There are still many interesting phenomena in this domain to which theoretical physicists may apply quantum mechanics and quantum statistical mechanics without doubting their foundation. In the domain of nuclear physics, the situation is entirely different. As for the low energy nuclear phenomena, which will be taken up on the last day of the main session A, the shell structure model for the nuclear^{us} which was proposed by one of our distinguished guests, Mrs. Mayer, turned out to be remarkably successful. However, we do not have yet the convincing argument how such a model could be derived from a more fundamental theory of elementary particles. As for the medium energy nuclear phenomena, in which π -meson^s come into foreground and which^{ill} would be discussed on the third day, and as for the problem of nuclear forces which is supposed to be intimately related to π -meson^s and which will be discussed on the fourth day, we do not have yet a quantitatively satisfactory solution, although a qualitative interpretation based on quantum field^s theory has been familiar to all of us for a long time. The situation becomes still worse, if we go over to the high energy nuclear phenomena, where we have to deal with a great variety of newly discovered^s unstable particles. We have no well developed theory at hand which enable us to understand why such and such par-

ticles exist in nature. Our main concern on the first and second days is to what extent the present quantum theory of fields is useful in this high energy domain on the one hand, but on the other hand, we are well aware of the necessity of modification of the present fields theory in such a way as to ^{come closer to a} approach more comprehensive and consistent theory of elementary particles, although we are not ^{yet} at all certain as to which direction we are to proceed. We are in the dark and what we can do is to go ahead in various directions. I personally feel that this is the time when each of us may proceed in the direction of his own choice, until we shall be clearer of which would be the right direction. For that reason, I hope that free exchange of opinions is particularly instructive. Perhaps I have talked a little too much about the subject of my own concern. I would like to end my address by hoping sincerely that both our distinguished guests and our fellow physicists in Japan would have a ^{very} pleasant time not only in the Conference rooms, but also [^] everywhere in Japan, where the Japanese people in general are so eager to welcome you.