

Acerca dos métodos e condições de trabalho no laboratório durante este período, pode dizer-se o seguinte: o trabalho científico realizava-se aí, em geral, individualmente. Era ainda a fase artesanal da investigação científica.

Se a actividade científica era pouco remuneradora financeiramente e ao mesmo tempo oferecia poucas garantias de estabilidade aos que a ela se entregavam, tinha, em contrapartida, o encanto de ser uma profissão apaixonante e autenticamente livre. Não havia horário de trabalho nem férias para os investigadores; mas isso não impedia que cada um trabalhasse o mais que pudesse pois todos estavam animados pela curiosidade científica e pelo desejo de atingir os resultados ambicionados o mais cedo possível.

No final deste período o laboratório estava em uma fase crucial do desenvolvimento da Radioactividade e da Física Nuclear. Acabara de se descobrir a fissão nuclear e a possibilidade de realizar reacções nucleares em cadeia — quando eclodiu a segunda Grande Guerra conduzindo a breve termo a ocupação da França pelos nazis. Era o princípio do êxodo de uma grande parte dos cientistas que nele trabalhavam e cuja vida era posta em perigo pela presença do ocupante.

O abandono do solo da França impôs-se a Rosenblum.

(Conclui no próximo número)

J. SANT'ANA DIONÍSIO

(Attaché de recherches do C. N. R. S.)

C. T. R. Wilson, C. H., F. R. S., Nobel Laureate

By the death of C. T. R. Wilson at the age of 90, the last link has been broken with the remarkable group of physicists working in the Cavendish Laboratory, Cambridge at the turn of the century.

«C. T. R.», as he was universally known, was the son of a sheep farmer in the Pentland Hills near Edinburgh. He originally intended to become a doctor but his interest was diverted to physics when he went to Cambridge University. Throughout his long life, he loved to wander among the Scottish mountains and it is not surprising that the whole course of his scientific work developed out of experiences on mountains. The ideas that led to the creation of the cloud chamber were conceived in 1894 on the summit of the highest British mountain, Ben Nevis, as he watched the brilliantly coloured rings of the Brocken Spectre round his shadow, cast on cloud or fog. On his return to the Cavendish Laboratory, he began experiments designed

to investigate the optics of the Brocken Spectre. The cloud necessary to reproduce the phenomenon in the laboratory he produced by expanding moist air in a closed vessel. He was immediately led away from his original intention by the accidental discovery that even when all normal condensation nuclei had been removed, he could still produce some droplets provided the expansion was sufficiently great. Soon he had shown conclusively that the condensation nuclei were ions.

Even in their early days, he had begun to consider the possibility of making the ions visible in the positions they occupied immediately after their production and so revealing the tracks of ionizing particles like α and β rays. But it was only after years of experimental work, performed with the highest experimental skill and most remarkable patience that he eventually produced in 1911 that instrument of surpassing elegance, the cloud chamber. His

early cloud chamber photographs are as fine as any produced today and are of great historical significance, for the Wilson cloud chamber was to play a vital part in the development of nuclear and cosmic ray physics.

The discovery in the early condensation experiments that ions were continuously produced in the air even in the absence of any obvious ionizing agency led C. T. R. into another field of research, atmospheric electricity. He devised a series of electrometers to measure the surface density of the earth's charge in fair and disturbed weather and the electric field and field changes in thunderstorms. We owe to him much of our knowledge of the interchange of electricity between the earth and the atmosphere and the explanation of the fact that the electric charge on the earth remains negative and practically constant.

Actually it was an experience in a thunderstorm on the summit of another Scottish

mountain in 1895 that drew his attention to the magnitude of the changes in the electric field, that he was later to study so effectively.

After he retired from the Jacksonian Chair in Natural Philosophy at Cambridge in 1934, he returned to Scotland and eventually came to live in a cottage in the hills near his birthplace. He remained very active both mentally and physically. Only three years ago, he published a long paper on thunderstorms in the Proceedings of the Royal Society. Until last year, he continued to make quite difficult climbs in the mountains and took part regularly in meteorological flights with students from Edinburgh University.

C. T. R. was the most gentle, modest and serene of men and inspired in all who knew him a deep and lasting affection.

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