

De artikelen, waarvan hieronder samenvattingen volgen, zijn gepubliceerd in de Nederlandsche taal in „Verslag van de gewone vergadering der Afdeeling Natuurkunde van 24 Juni 1944, Deel LIII, No. 6”.

The articles, of which summaries follow below, have been published in the Dutch language in „Verslag van de gewone vergadering der Afdeeling Natuurkunde” of June 24th, 1944, Vol. LIII, No. 6.

Les articles dont les résumés suivent ci-dessus, ont été publiés en langue néerlandaise dans le „Verslag van de gewone vergadering der Afdeeling Natuurkunde” du 24 juin 1944, Tome LIII, No. 6.

Physics. — CLAY, J.: *The energy in showers and impacts in cosmic radiation*, p. 365.

Ionisationbursts and extensive showers, which according to our observations of coincidences belong together, give us an indication of particles of very high energy occurring in cosmic radiation.

The results are given of the simultaneous recordings in four ionisation-vessels of 22, 28, 40 and 40 l, during about 21.000 hours of bursts which had a density between 10^4 and 2.10^5 paths per m^2 , simultaneously in two or more vessels. It appears that the frequency of these bursts fits in the integral energy spectrum found by the absorption in thick layers of water, $N = N_0 E_m^{-1.9}$ on the understanding that as may be expected for increasing density of the paths the decrease of the frequency is smaller than for lower densities. This is connected with the fact that for the highest densities the frequency in the unarmoured is higher than for the armoured in opposition to the burst of lower densities. As in these bursts the shower is in the later stage of development the average energy of the particles is smaller than in the smaller burst where the energy is still more concentrated in the mesons, the penetrating part of the shower.

When we take into consideration that these very concentrated bursts are a part of a shower of great extension, which is measured in the same place we calculated that sometimes there must be particles with an energy of at least $5 \cdot 10^{15}$ evolt, but that this frequency is as low as one in 1000 hours or even less p. m^2 .

Physique. — CLAY, J.: *L'énergie dans les grandes gerbes et les chocs dans la radiation cosmique*, p. 365.

Les chocs d'ionisation et les grandes gerbes, qui se correspondent d'après nos mesures de coïncidence, révèlent qu'il doit se trouver de temps à autre des particules douées d'une très grande énergie dans la radiation cosmique. Nous relevons les résultats d'enregistrements simultanés dans quatre