

"Supplementary" paper
for Pugwash 1978,
conceived during an
empty spell.

The Neutrino Bomb
A New Weapon of Mass Destruction

E. Broda (Austria)

The neutrino, a new elementary particle conceived by the later Nobel Prize winner Wolfgang Pauli in 1931 during a visit to his home town of Vienna in a coffee house and characteristically developed in Fascist Italy by E. Fermi, is potentially a most suitable weapon of mass destruction. The general principle of its use might be the following.

An enormous flux of neutrinos in the mega-electronvolt range, and therefore carrying a power of many megawatts, is emitted by a nuclear reactor. The rays are bundled and concentrated by systems of suitable lenses and mirrors against sensitive structures in the terrestrial crust, e.g. against the San Andres fault in California where stresses are released. In this way earthquakes are generated and large areas are destroyed. In the release of the enormous amount of seismic energy an extraordinary multiplication factor is obtain.

It might be objected that the absorption and scattering cross sections of neutrinos are low, and so the probability of action is insufficient. This objection is invalid. P.A.M.Dirac, Cambridge, another Nobel Prize winner, has shown that the physical laws and therefore also cross sections are time-dependent, and thus it is just a question of judicial choice of the point in time when the button is pressed.

Incorrigible pessimists might hold that the rate of change in natural laws is low. This shortsighted, indeed dumb, objection forgets that long ago Albert Einstein, one of our founding fathers, showed that time depends on the state of movement. If therefore the neutrino source were moved, the needed values of the cross sections could easily be obtained at any given time, for instance on the birthday of the President.

The results of Einstein were obtained after a rich Serbian meal provided by Frau Milena in the Einstein home in Bern. Thus it might be doubted whether we are not faced with another Balkan conspiracy to set fire to the world. After all, the First World War did start in Sarajevo.

It is clearly necessary to convene a Pugwash workshop to deal with the immediate threat of the neutrino bomb. It is suggested to appoint Scoville and Milshtein as co-chairmen.

