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EDITOR'S PAGE

The international journal ***Oil Shale*** has reached an important milestone. Twenty years have passed since the publication of the first issue of our predecessor, the scientific and technical journal ***Goryutchie Slantsy*** (in Russian), in the then Estonian SSR. Our oil shale researchers and engineers celebrate one more anniversary in 2003: 165 years ago, in 1838, first experiments on thermal decomposition of Estonian oil shale were carried out by G. Helmersen. There followed oil shale researches in Tartu University (A. Kupffer, A. Petzholdt, A. Shamarin).

Systematic studies on oil shale were started in 1920 by P. Kogerman who together with M. Wittlich founded an oil shale research laboratory at Tartu University in 1925.

The world is approaching the exhaustion of fossil fuel reserves. This has brought about a growing interest in oil shale reserves not widely used up to now. As we know, they are rather evenly distributed over the whole world. Oil shale deposits have been found on the territory of almost a hundred states. Kerogen originating from aquatic lower organisms and aged about 500 million years is a potential oil source at its thermal decomposition. Its global resources are estimated to be about $500 \cdot 10^9$ tons.

The last twenty years have enriched our knowledge in both geology and power engineering, as well as in oil shale chemistry and technology. Geologists have obtained new valuable data on the reserves of caustobioliths including oil shales.

Considering the special characteristics of oil shale has enabled power engineers to achieve success in creating new technologies and equipment for oil shale combustion. The last quarter of the 20th century is characterized by intense development of combined power units. Their first generation enables to increase the efficiency of power plants using solid fuels up to 0.46. Making use of such power plants is prospective at combustion of oil shales as well. At the same time the classical high-temperature pulverized firing is being replaced by low-temperature fluidized-bed technology. This in its turn takes us to the field of chemistry, as lowering the combustion temperature and changing the firing conditions as well as the possibilities of using run-of-mine oil shale require detailed studies. In the first place they concern dynamics of heteroatomic compounds at combustion.

Special attention should be paid to sulphur and chlorine compounds. Corresponding investigations are impelled by severe environmental requirements.

The so-called Taciuk technology for oil shale retorting has been of interest as a future technology; our journal has introduced it to the readers ten years ago already. Retorting run-of-mine oil shale without its previous concentrating has doubtless some advantages over former technologies. Internationally acknowledged experts for evaluating the applicability of Taciuk system may be found also among Estonian oil shale chemists and technologists. Studies on application of the methods of so-called green chemistry on oil shale for obtaining initial material for chemical industry are of great interest as well.

The editorial board of the international journal ***Oil Shale*** has always centred its attention on collaboration with researches from abroad. 1990 is the year since when the share of publications originating from foreign authors has been about a quarter of the whole. They stem from fifteen states where oil shales are being studied, mostly from Russia, China, Jordan, Mongolia, Turkey, Hungary, etc. Researches of Russia and China are our most prolific foreign partners.

Analysis of the subjects of papers published in ***Oil Shale*** during the last twelve years reveals that their overwhelming majority (~40%) concern oil shale technology. Analytical investigations and environmental studies follow with an almost equal share. The number of papers dealing with oil shale mining is modest – about 6%.

Let us return to the global problems. Crude oil resources are near to their exhaustion. An intensive search for new motor oil sources is being carried out. Approximate calculations show that cellulose biomass (forest industry, agriculture, domestic wastes) could meet all needs for Otto engine fuel. Modern technology of producing bioethanol involves a complete enzymatic destruction of cellulose and hemicellulose with their subsequent fermentation to ethanol. This process called SSF (Simultaneous Saccharification and Fermentation) enables the prime cost of bioethanol to compete with petrol produced from crude oil.

Considering these facts, our oil shale chemists and technologists ought to concentrate their attention on the use of oil shale kerogen in chemical industry, be it for obtaining polymeric raw material or producing valuable forage protein. Our Russian colleagues have gained excellent experience in the latter field. These studies, temporarily slackened, need a new modern, I should say genetic engineering, approach as almost two thirds of world's population are still suffering from malnutrition.

I wish all oil shale researchers enthusiasm and new findings on this hard but rewarding way.

Jüri KANN