

ISR 6/4 *Germany's Losses and Lessons* Title 303 A

Unquestionably the greatest loss to German science in the period of 1933-1945 and particularly during Hitler's senseless war of aggrandisement was the deadly loss of a generation of young men, idealists and scientists of great promise. Equally serious were the anti-semitic Nazi regulations which drove Jews, many of them Germany's leading university professors, to seek safety and employment abroad. That their gifted children, their children's children, and further generations were no longer Germans, was an equally serious loss.

The second great change is that the German language ceased to be the language of science, now internationally replaced by English. If a comment is needed, a German university professor may take three days to prepare a German contribution to an international congress, but may have to spend three times as long to write it in English, if he wants his audience to understand him.

No one would ever state that Hitler's Third Reich had brought any tangible or long-lasting benefits to Germany. However, the post-war experience that Government control is unnecessary for the freedom of great scientific institutions, although financially dependent on official sources, was valuable.

The lessons to be learnt are twofold. In Germany itself, scientists have understood from bitter experience that they must share political responsibility with all others and cannot remain in a state of 'Golden Innocence', as Walter Scheel, President of the Federal Republic, has criticised the scientists of the pre-Hitlerian area. Their loyalty to the State was completely uncritical and subservient. The exceptions were few, Albert Einstein the most notable.

The second lesson concerns other countries, also forced to build, or rebuild, their science: Insistence on excellence in all research, free and independent scientific institutions and small beginnings in simple laboratories, must have absolute priority. The rest will follow, as was exemplified by Chaim Weizmann who started in 1934, setting up a small chemical research laboratory in the deserts of Palestine. It grew to the famous Weizmann Institute in Rehovot. Weizmann recommended frequent exchange visits to other research laboratories abroad. In all re-constructions, hard work is another essential prerequisite, although Liebig's admonition need not be taken verbally: "Ruin your health through hard work as a student, if you want to become a chemist".

My ISR article was translated into German by Professor Roswitha Schmid and published as a paperback of *Naturwissenschaftliche Rundschau* with the title *Wissenschaft in Deutschland—Niedergang und neuer Aufstieg*, 1983. Dr Schmid added many photographs and a list of eminent scientists.