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■ *Phonological Skills and Learning to Read* is by Usha Goswami and Peter Bryant. The authors discuss recent research on reading strategies adopted by children and develop a theory of phonological awareness as a precedent of reading. Publisher is Erlbaum, price is £9.95 (hbk £19.95).

■ Urwin Hyman has recently published *Marine Geochemistry* by Roy Chester. The book offers a fully comprehensive summary of the chemistry of the oceans, their sediments and biota. Written as a textbook for advanced students, price is £34.95 (hbk £90).

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■ *Stars and Galaxies. Citizens of the Universe* edited by Donald E. Osterbrock is a recent addition to the series "Readings from Scientific American". The collection presents research on galaxies, luminous stars and supernovae. Publisher is Freeman, price is £10.95.

■ *The Path of No Resistance* is subtitled *The Story of the Revolution in Superconductivity*. Published by Simon and Schuster as a Touchstone paperback, the author is Bruce Schechter, price is \$8.95. □

Seeds of the past

Benno Müller-Hill

The Wellborn Science. Eugenics in Germany, France, Brazil and Russia. Edited by Mark B. Adams. *Oxford University Press: 1990. Pp.242. £35, \$45.*

For a long time, eugenics has been forgotten by historians of science. Now, when almost all the participants are dead — and just before the Human Genome Project becomes a reality — their interest in the subject is re-emerging. So far, all the books on the subject have concentrated on eugenics in just one country. This one, edited by Mark Adams, differs in that it is the first which attempts an international approach. Four authors deal with four countries: Germany, France, Brazil and the Soviet Union. Four authors are necessary, according to Adams, because scholars in the United States know at best one language in addition to their own. So the approach is necessarily fragmented. Nevertheless, only one-tenth of the countries in which eugenicists were active are dealt with here.

The difference between what has been called eugenics in each of these four countries is tremendous. On one end of the scale is Brazil, where not a single researcher ever actually worked on genetics until 1940, the year the study ends. Eugenics in Brazil was a mixture of sport and hygiene. Nobody there ever thought seriously about sterilization, and nobody was upset by race mixing — everybody optimistically expected the "whitening" of the inhabitants. The article by Nancy Leys Stepan confirms what one may have guessed: eugenics in the absence of geneticists cannot have a strong impact on society.

Strangely enough, according to William Schneider, France was not so very different from Brazil. Before World War I eugenicists in France were inspired more by Lamarck and by Zola's novels than by Mendel. According to Schneider only one geneticist, Cuenot, was active in France before 1930. But the ultimately hopeful world of Zola collapsed with World War I, and a new generation of eugenicists appeared in the 1930s. Curiously, Schneider does not mention the French Nobel prizewinner Alexis Carrel, who proposed the "ideal solution" of "little economic gas chambers" for all those with bad genes in his book *L'homme cet Inconnu* (Plon, 1935). Schneider's account stops at the moment where it would have become the most interesting with the collaboration between the French and the Nazi authorities in 1940. So the Swiss anthropologist Montadon is men-

tioned as "never subscribing to the possibility, let alone the advantage of achieving racial purity". Montadon certainly changed his opinion in his tract "What is a Jew?", which was published during the German occupation and has just been reprinted in France.

Adams paints a fascinating picture of the development of eugenics in the Soviet Union, where the subject was strongly associated with some outstanding mendelian geneticists. Kol'tsov, Filipchenko and Serebrowsky understood and practised genetics. Kol'tsov, who wrote in 1922 "Eugenics is the religion of the future and it awaits its prophets", was an optimist who could not have imagined somebody like Hitler. To propose mass sterilization was out of the question in this devastated country, so Serebrowsky, and later H. J. Muller, proposed sperm donation. But with the rise of Stalin, genetics and eugenics disappeared with the geneticists.

The other country considered here in which geneticists were strong and eugenics was flourishing, Germany, is dealt with by Sheila Weiss. Her article has to compete with Weindling's voluminous book *Health, Race and German Politics 1870-1945* (Cambridge University Press; for review see *Nature* 344, 502; 1990) and does so very well. Germany was the only country where eugenic measures were applied on a vast scale by the government. Weiss concentrates on the different aspects of the various breeds of eugenics. The details of the Nazi variety as propagated by various state agencies are somewhat neglected. But she shows convincingly how just one brand of eugenics was selected by the Nazis and brought into action.

At the end of the book the reader is left with some nagging questions: why was eugenics so different in different countries? Why were eugenicists successful only in Germany? Could some other form of the practice become successful in the future? The reader is reminded by Adams in the concluding chapter that the book deals after all with only four of about forty countries in which eugenicists have flourished. And if the past is so complex, what about the future? I think this volume should be bought and read not only by historians of science but by all those interested in and involved in the Human Genome Project. To know what was thought and what happened in the twentieth century may be helpful for those who will be active in the twenty-first. □


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■ In his last book review for *Nature* (336, 721; 1988), Professor Müller-Hill reviewed *The Bison* by Danil Granin, a novel about Nikolai Timofeyev-Resovsky, the scientist who defied Stalin. Just translated into English by A. W. Bouis, the book is now published in the United States by Doubleday, price \$24.95. □

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