## Book Reviews

**E. Chargaff: Heraclitean Fire. Sketches From a Life Before Nature.** New York: Rockefeller University Press 1978. 260 pp. Hard bound US $ 13

If an eminent scientist writes his autobiography, one expects some disclosure about the background to his discoveries. Erwin Chargaff is an eminent scientist and every geneticist will know his name as linked with the discovery of the base-pairing of DNA, the most important single piece of evidence for the double helix concept of the structure, for which Watson and Crick later won the Nobel Prize. It remains one of the secrets of the Nobel committee, as to why Chargaff, who nobly gives credit to Oswald T. Avery's basic discovery, was not granted the recognition which is considered the highest token of distinction in the scientific community. His hereditary code-script was just as little honored as Avery's transformation work. Is it any wonder that Chargaff is quite bitter about this and wishes to 'Wipe it out'. But there is more bitterness in his life story: sometimes one gets the impression that all his life was a sum of underestimations.

Chargaff's account of his life is as self-willed as his life is normal in terms of an academic career. Without self-praise, it is critical to the point of sarcasm. A few samples: talking about molecular biology, which he calls 'Pop Biochemistry', he characterizes it as remaining 'normative and dogmatic'. Or: 'Nowhere ... is the penalty on even the mildest case of non-conformity higher than in the US'. Or: 'Will the nation be able to produce enough sick people to guarantee to all these doctors the level of comfort to which they consider themselves ... to be entitled?'. Or: 'I do not need statistical word analysis to show me that former President Ford cannot be the author of King Lear'. And so on ...

The specific approach of this biography is that it does not follow a chronological order. It is built up of a number of ingenious essays which demonstrate not only the erudition of the author, who is very well-read in American, and even more so in classical and modern European literature, but also the passionate writer, for whom the word is more than a way of communicating facts. It is not surprising that he considers Karl Kraus to be his most influential teacher. Expression like 'we are all the slaves of our language', 'the advertising jargon of our times', 'the barbarization of our time is nowhere as noticable as in its obtuse indolence about language', 'wordplay is thoughtplay; and play can be a dead-serious business', demonstrate the deeply motivated literary stylist, not the mannerist.

Nevertheless one gets all the information about the life of a homeless, rootless man 'with a stone in his shoe', born in Vienna of Jewish parents, 'being gifted for many things' and coming into chemistry more or less by accident; emigrating to America, but never becoming an adapted American, homesick for Europe, where he never succeeded in gaining an adequate position (why not?), but extremely successful in various aspects of biochemistry. Starting with investigations on the lipids of tubercle and other bacteria he became one of the foremost lipid biochemists of his time. Soon after his emigration to the United States he tackled the chemistry of blood coagulation, a field in which he again delivered pioneering work. Excited by a sentence in Avery's epoch-making paper he came after World War II to the chemistry of heredity, which crowned his life-long fascination with the origins of life. Favoured by the recent rediscovery of chromatography and gifted with excellent collaborators, he was able to solve the miracle of complementary of the base composition of DNA, a regularity which later was called the 'Chargaff rules'. Looking back, this was one of the experimental chemical corner-stones for the Watson-Crick theory, for which it is given credit by James D. Watson (The Double Helix, 1968, pp. 128-132). Chargaff did not join the race for prestige, but his name has to be included in the story of the highlights of molecular biology, even though he himself is sarcastic about it. It remains Chargaff's accomplishment to have shown that DNA represents texts carrying specific information, that these texts had one entirely novel feature in common, namely, a most peculiar and unexpected pairing of the DNA constitutents.

The third part of the biography is more elegiac and full of practical and theoretical wisdom. Under the title 'The Sun and the Death' we find a series of apocalyptic and tragic sentiments, but which are constantly based on sharp observation and a deep human engagement. A few samples: 'the didactic stupidities of the established world', the 'rapid process of dehumanization', the 'malignant growth of all institutions and their concomitant bureaucracies', the 'complete absence of tradition', 'Science has become a spectator sport ... one of the most effective tools for mass cretinization'. Chargaff nevertheless has a small core of optimism, otherwise he would not be able to offer a chance of survival for science. His proposal to maintain science with a human face means 'small science, one for which an individual can stand up, in which a human voice can still be heard, ... that is governed by human conscience, and not merely by scientific conscience'. So all his expectations are directed to a revolution of minds in the scientific community. He believes it can come after his very 'Vanishing into Dust'.

I am sure this biography will become a part of literature, but more: it is a mirror and a passionate appeal for an intellectual and spiritual metanoeite.

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**Bukhari, A.I.; Broker, T.R. (eds.): DNA: Replication and Recombination.** Abstracts of papers presented at the XLIII Cold Spring Harbor Symposium on Quantitative Biology, May 31 – June 7, 1978.

Cold Spring Harbor Laboratory 1978. 124 pp., 5 figs. Soft bound US $ 5.00

The presented abstracts deal with three main subjects:

I. General Recombination: with unwinding, enzymological and structural considerations; models from genetics.

II. Specialized Recombination: with IS elements and transposons, the λ and Mu paradigms, repair and recA function.

III. Replication: priming and Okazaki fragments, small phages and plasmids as replication models, origins, prokaryotic systems and eukaryotic systems I, II and III.

All 124 papers are very short, 200-1500 words, and only some of them present literature references. For most of these abstracts the presented material will be very difficult to understand even if one is familiar with the subject. In fact the booklet is a representation of the programme of the 43th Cold Spring Harbor Symposium in the summer of 1978 and gives information about people who were involved with these subjects at that time.

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