slavery, that clearly is not what Reich had in mind.

As a wistful medievalist, yearning for lost simplicities, weary of rat-racing, television commercials, super-highways and other industrial pollutions, Reich is not alone, even among the over-thirties. But that is not his full meaning. The poet-historian Toynbee, perhaps not an infallible guide but possessed of an expressive vocabulary, says that in disintegrating societies there are heroes and there are truants; there are men who defend the permanent things and there are men who "surrender to a sense of promiscuity"—in the largest sense, "abandon" for short. Toynbee's truant "realizes with dismay that the regiment has now lost the discipline that his hitherto fortified his *moral*, and in this situation allows himself to believe that he is absolved from . . . duty." As for abandon, "it is a state of mind in which antinomianism is accepted —consciously or unconsciously—in theory or in practice." Consciousness III—and consciously so—is antinomianism in theory and practice, in core, essence and impact. Those who teach it, especially the drug courses, and even more especially in law schools, are surely truant. And Toynbee's own hard answer to the inevitable next question was, *Si monumentum requiris, circumspice!*

Reviewed by C. P. IVES

Genetics and History

The Evolution of Man and Society, by C. D. Darlington, *New York: Simon & Schuster, 1969. 753 pp. $12.95.*

ADVANCES in the life sciences in recent decades have made it possible for the first time to attempt a philosophy of history—that is to say, an interpretation of the rise, fall and structure of civilizations—in terms of the interrelationships between history and the biological disciplines. In this massive volume of about half a million words, Dr. Darlington successfully grasps the nettle. His qualifications include being Sherardian Professor of Botany and Regius Professor of Biology at Oxford, Director of the Innes Horticultural Institution, author of over a dozen books on botany, cytology, genetics and the relationship of science to society, one of the world's outstanding living geneticists, and a man who challenged mechanistic approaches to gene theory when it was unfashionable to do so.

The scope of the book under review is too vast for systematic treatment. In his chapter on "The Expanding Species," for instance, Darlington stresses such unfamiliar phenomena as the impact on primitive man of prey overkill; that speech, language, hence the structure of thought are physiologically and genetically conditioned among races; that blood-group patterns are adaptive to different habitats, are the price of survival in areas of endemic disease (sickle cell anemia), and are variable in rate of change between sedentary and migratory stocks. In the spread of disease with interracial contact, Darlington finds the smaller parasites more virulent to the new, unhybridized, nonimmune human stocks. Color is viewed as evolutionary adaptation to climate, creating optimum survival balance between such pathological conditions as rickets, on the one hand, and sunstroke and skin cancer, on the other.

The overwhelming bulk of Darlington's book concerns the spread of civilizations from neolithic to modern times. The *Leitmotiv* is the moving balance between inbreeding and outbreeding, which when seriously upset destroys civilizations. Such empires as the Persian and the Ptolemaic were casualties of intensive inbreeding, the pile-up of deleterious double recessive genes. The Caliphs and other rulers of Islam negated the genetically beneficial effects of royal polygamy by securing their succes-

sion through total extermination of their siblings.

Darlington views the elaborate Papal prohibitions of incest, defined broadly enough to bar the marriage of third cousins twice removed in the *Schema Cognationum*, as a beneficial coercive extension of royal breeding demes. The lapse of these prohibitions and their rejection by the Reformation led to the genetic decline of the Hapsburgs and Bourbons and, in more modern times, to the royal affliction of haemophilia.

Throughout most of history, Darlington believes, the deme, or breeding population, has been too small to maintain genetic vigor. Culturally desirable hybridization is introduced by wars and conquests, in which the defeated males are killed and their women appropriated as concubines and wives. However, this may destroy societies by decapitation as in the Irish and Amerindian cases. Such classes as smiths, armorers, artillery makers and priests tend to survive these vicissitudes, to be mobile, and to be incorporated into the breeding stocks of the victors. The artisans were absorbed because of their utility; the priests, before the era of religious intolerance, because of syncretism. In discussing the selective processes shaping ancient Jewry, Darlington stresses that the Jews taken to Babylon during the Captivity were the royal family, priests, warriors and skilled workers—in short, those useful and those feared. The common folk were left behind in Judea to relapse into idolatry and to be sedulously excluded from the Jewish breeding community upon the return of the exiled elite. Other winnowing processes have operated to shape the human leaven of history.

Social stratification, Darlington finds, is an essential ingredient of sound breeding patterns, provided lack of upward and downward mobility does not freeze classes into castes. Urbanization historically has been both a cauldron into which new hybridizing stocks are injected and a seedbed of class stratification. The mobile classes —craftsmen, warriors, priests, scholars and bureaucrats—proliferate with the demand of great cities for their services, enrich the gene pools and facilitate hybridization. In this moving genetic equilibrium between the lethal extremes of incest and panmixia, the clergy performs the function of maintaining genetic integrity through direct barriers against incest, such painful initiation ceremonies as circumcision, and dietary rules (people who can't eat together don't often sleep together.)

As Darlington sees it, the characteristic founders of dynasties and civilizations are hybrids. William the Conqueror was also addressed as William, Duke Bastard. Lenin was a quarter Russian, a quarter Tartar, a quarter German, and a quarter Jewish. As dynasties congeal, they lose vigor and even sanity through inbreeding.

A work of such immense scope, erudition and originality inevitably occasions some critical comment. The stress on the genetic value of hybridization may well be historically valid. As applied to modern populations, Ernst Mayr of Harvard has argued cogently that contemporary breeding populations are so large that further hybridization *per se* would cause only minimal genetic improvement. The goal of hybridization frequently conflicts with those of eugenics. In contemporary society, the eugenic need is more compelling. Secondly, Darlington has not stressed the impact of dysgenic catastrophe on civilizations.

The Evolution of Man and Society is a landmark in the effort to provide history with structure. It is sounder, truer and more important than such prescientific or anti-scientific attempts in this area as those of Hegel, Spengler and Toynbee. In addition it is written in a style admirable for clarity and brevity. Its influence on the humanities and the social sciences would be enormous if their practitioners were less ignorant of the biological sciences.

Reviewed by NATHANIEL WEYL