

### *Sodium Deprivation and Low Urinary Output*

Although coastal New Guineans have no dearth of salt in their diet, the landlocked people in the interior mountain valleys of New Guinea, not unlike those in the continental mountain ranges of Asia and of the Andes in South America, live in a sodium-scarce environment. Unfamiliar even with the existence of the oceans, they do not know of sea salt; yet they prepare a condiment of their own by burning sheets of pounded bark fibers which have been soaked in mineral springs, or from complex leeching of salts from ashes of burned reeds and bark, which contain more potassium and calcium salts than salts of sodium. It is not surprising, therefore, that we have found in these people a complete reversal of expected values for urinary sodium and potassium excretion from those of the civilized peoples of the world. In fact, so dramatic was this finding that, when we stumbled upon it, our laboratory technicians thought that the labels of the sodium and potassium value columns had been interchanged through clerical error. Their daily intake of NaCl of 40-70 mg is less than 1 percent of what is considered normal elsewhere. Their potassium intake is over four times that in civilized societies. Urinary K/Na ratios are often 200-500:1, or 400 to 1,000 times the expected so-called normal values.

Similarly, sweat of New Guinea highlanders contains less than one-tenth the amount of sodium found in normal

people elsewhere in the world.

The excessively low salt intake, coupled with a daily protein intake often under one-third that which on European standards would be minimum daily requirement, leads to low values of nitrogen excretion, extremely low values of amino acids in the urine, and low urine sodium excretion. Thus, the astonishingly low urine output for many Highland peoples, and their lower sweating, can be more readily understood. In fact, lactating women and men on long journeys often drink little or no water, and inapparent evaporative loss through skin and respiration leave little water for urine production. Daily output values have been recorded at so low a level that one would anticipate uremia in a European on an average diet within a few days.

### *Optimal Habitus for Heavy Work Load*

Life in the fortified stockaded hamlets, built on high narrow ridges for security against raids, is rigorous. Steep descents and ascents of over 1,000 meters must be made to the garden sites and sources of drinking water and firewood. Heavy loads of sweet potato and other tubers, firewood, and water-filled bamboo cylinders are carried up to the villages. A woman who weighs only 45 kilograms may carry a load of over 20 kilograms down and up the

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### *Excerpts from . . .*

## **Socio-Genetic Influences of Chromosome Complements**

by Kennedy McWhirter

Accurate diagnosis of genetically influenced behavioral disorders is fundamental to the treatment of any kind of deviation. That these ideals have lapsed in a number of areas invites grave criticism of administrators, lawyers, politicians, and, not least, of the opinion-forming public . . .

The whole current concept of criminal responsibility rests on a logical fallacy, which has been incidentally exposed by the unresolved arguments over the status of subjects with the abnormal XYY chromosome complement. I propose a shift in the onus of proof from those who argue for some genetic component in criminality to those who claim that there is *no* genetic component . . .

For years, various sociological writers have quoted each other to the effect that crime is due to poverty. Several nations have enormously increased their standards of living recently, yet crime has not abated. This experience should have been enough to make the environmentalist penologists and sociologists reconsider their position—but this they show no signs of doing. Environmentalist penology has become a vast self-perpetuating and self-fulfilling industry . . .

Once we recognize that penology has no right whatsoever to assume completely environmental causation of crime, the way is opened for new and, we hope, more fruitful concepts. If we make the minimum assumption of some genetic influence, we are ethically precluded from dressing up our penal proceedings in terms of righteous indignation and retribution. Instead, our main concerns are the restitution of victims' losses (for the state has failed to protect its sub-

jects), rehabilitation of the offender, and prevention of further offenses . . .

Where XYY subjects have developed a criminal subsyndrome, the uselessness of present "rehabilitative" methods has been acknowledged. It may not be different with appreciable portions of the far more numerous XY convicts . . .

The interactionist philosophy, of course, requires that society should not tolerate environmental conditions which can be shown to be conducive to crime. But society should also not tolerate the lazy acceptance of a system that is continually providing its own pernicious failure. Like so many other areas of behavioral studies (for instance education, alcoholism, and drug addiction) penology must now be converted into an interdisciplinary science. The exclusion of the natural sciences from such fields invariably leads to inefficient and inhumane policies.