

What Our Ancestors Ate

THERE ARE THESE LITTLE ROUND BLACK cookies — you know the ones: two flat hard chocolate biscuits separated by a creamy, sugary interior. You can part the halves and lick the cream. You can take little bites to prolong the ecstasy. Or, following one of my more usual methods, you can try to toss them down by the handful.

This behavior could not occur at a more awkward time. I happen to be collaborating with two other researchers, S. Boyd Eaton, and my wife, Marjorie Shostak, on a book about the diet and life style of early humans. "We just have to let people know that there's a diet we were designed to eat, during the time we were evolving," says Eaton. "Low fat, low salt, low refined carbohydrates."

Shostak continues: "High fiber, high complex carbs, high protein. It's what our ancestors ate."

"It's natural," Eaton says. "Combined with the right exercise plan, which is only natural too. People just have to realize, and then they'll start to shape right up. We have to put the information in their hands."

"But," I shout, glancing at the thick tome we have produced, "The Paleolithic Prescription: A Program of Diet and Exercise and a Design for Living," in our modest attempt to transform America's eating habits" — and dusting the cookie crumbs off the page — "I've been working with you for years on this! I really do believe in it! But I'm eating worse than ever! How come it hasn't changed me?"

"Calm yourself," Eaton says. "You'll do better."

Why, as a matter of fact, is it so hard to eat right?

Picture, if you will, the natural world that was once real for the whole human species. The !Kung San, or Bushmen, with whom Marjorie and I lived for two years, inhabited that world when we met them, as hunters and gatherers in Botswana. Their word for "sweet" is also the name of a certain berry, which they collect laboriously from thorny bushes under the blazing sun: a pit about three millimeters in diameter, a brown dry skin about the thickness of the skin of a kiwi, and in between some pulp — a millimeter or two thick. I guess it's sweet enough, but nothing to write home about. For sheer sweetness, the !Kung's wild fruits go pretty much downhill from there.

They get about 20 to 25 percent of the fat in their diet from game meat. But these lean, mean animals make our leanest cuts of supermarket meat seem succulent, dripping with grease. As for our fat-loaded dairy products — ice cream, butter, cheese, milk — the !Kung, like our own remote hunting and gathering ancestors, have none at all. Nor are there bottles of vegetable oil in the the grass huts, waiting to be added during cooking. As for salt, people living in nature get only a little of it from plants and meat; like the wild game they hunt, they rely on rare encounters with salt licks to supplement these small amounts. There are some tasty nuts with fair amounts of fat, but nothing that really rivals a cookie.

To get this food, you must walk for hours, then port it home. It's harder to get, prepare, eat and digest than the foods Americans know and love. For the game, the men walk until they are in

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The modern diet, with dangerous levels of fat, sugar and other 'sophistications' unknown to our hunter-gatherer forebears, developed with the growth of civilization.

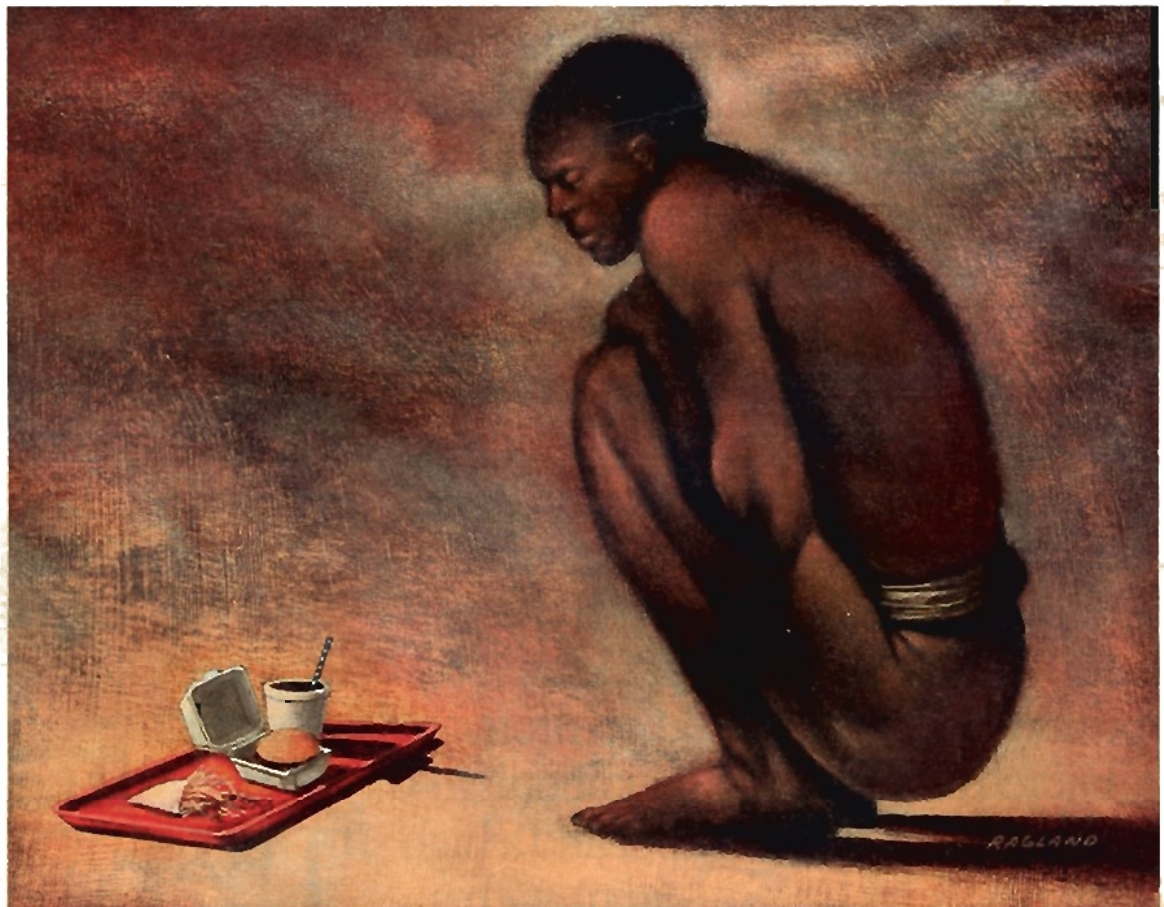
spear or poisoned-arrow range, after which they may have to cross the thorn-scrub wilderness in a dead heat with, say, a kudu — and, if lucky, beat him to the goal of survival. The women may carry 20 to 50 pounds of kids — and on the way back the kids will be sitting on top of a pile of fruits, nuts and vegetables.

Occasionally, there is honey — the only thing remotely resembling the concentrated sweets we routinely eat. But there can be a high price in bee stings; ineptly harvested, honey can even be deadly.

Humans are the product of millions of years of organic evolution leading up to a few thousand years of incredibly rapid cultural change. That evolution has made us, biologically, what we are. During those millions of years, we learned to obtain our food by methods, and with results, similar to those of the !Kung.

Eaton's analysis of 153 species of wild plant foods eaten by hunters and gatherers shows the average protein (4.13 percent) and fiber (12.6 percent) content to be much higher than in our plant foods. Thousands of years of plant breeding and modern food processing have greatly increased simple, less desirable sugars, decreased many needed carbohydrates and increased calorie content.

As for meat, 43 game species relied on by various hunter and gatherer groups averaged only 4.3 percent fats, compared to 25 to 35 percent in supermarket meat. The fat of game meat also tends to be much less saturated, meaning less harmful. Overall, the average diet of hunters and gatherers consisted of 33 percent protein, compared to 12 percent in the modern American diet; an equal percentage (46) of carbohydrates, and 21 percent fat (with a high ratio of polyunsaturates), compared to



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our 42 percent. Hunter-gatherer sodium consumption is estimated at 690 milligrams daily, as compared to between 2,000 and 7,000 for present-day Americans.

Shortages were periodically imposed on the !Kung, so they could not have become obese even if their unavoidable exercise were insufficient to prevent weight gain. Specific measures of body function confirm the conclusions suggested by diet studies. In 5 hunting and gathering societies, cholesterol in blood was found to be extremely low, ranging from 106 in Zairian pygmies to 139 in Australian aborigines. Most American physicians today consider a level below 200 to be healthy; the threshold has been dropping. As for blood pressure, which has at least some relationship to salt intake, 6 hunting and gathering groups and 19 other preindustrial societies were below 120/80, normal for modern Americans and Western Europeans, and unlike us, showed no increase with age.

Our ancestors had to fight off a heavy assault of microbes, which tended to pick them off before old age, but the ones who survived the infectious onslaught lived free of the diseases that bring us low today. Atherosclerotic heart disease and stroke, diabetes, obesity, hypertension, lung cancer, colon cancer and several other "diseases of civilization" — even dental caries — were rare. Again, in those who did not succumb to infection, muscular and aerobic fitness were high. Maximum oxygen uptake from a breath of air, one measure of aerobic fitness, is about a third higher in young men in preindustrial societies than in American men the same age. Their strength and endurance, though not comparable to those of our best athletes, are markedly superior to our averages.

NOW THAT YOU KNOW WE WERE DESIGNED for a more vigorous and Spartan way of life, and that our health depends on getting back to it, you can resist the doughnut or croissant — and I can resist the cookies. And we can get all the exercise we need. Right?

Wrong. And the reason it's not that simple, at least for many of us, lies in that same evolutionary past. Darwin's famous struggle for existence may not have always been desperate, or always red in tooth and claw, but it certainly was an effortful way to get through the eons.

Our egregious taste for fats, sweets and salt is a product of natural selection. The adaptation, built into the taste centers of our brains, says something like: Consume as much of those things as you can. You will never get enough of them to hurt you. As for calories, you'll be stocking up for a rainy day. A shortage will come along and deplete your paltry fat stores, so they won't even be able to slow you down.

Many laboratory and clinical studies point to a built-in set of biological mechanisms. Destruction of the central part of the hypothalamus, at the base of the brain, results in continuous overeating and obesity, whether in animals or humans, so one must conclude that there is a signal that normally stops us automatically from what the brain tells us is overeating. There is evidence that animals can assess how fat they are, probably because fat produces chemical signals that the brain can interpret. This is why normal animals (and people) don't balloon out indefinitely; but they also don't stop at a medically ideal weight. Instead, they go for what was once, under conditions of limited availability, the evolutionary surplus.

Extensive, mounting evidence, most recently in the form of two studies in *The New England Journal of Medicine*, points to a strong genetic component in obesity. But in all likelihood the very obese are only one end of a genetic continuum — not a class by themselves. At the other end are lucky souls who can live in this cornucopia of fats and sweets and sail along thin as the proverbial rail. Most of us have a genetic tendency, from the distant past, to load up on goodies under conditions of abundance.

And here we are in an unprecedented evolutionary situation, surrounded by endless supplies of fat, sugar and salt undiluted by fiber and never exposed to the needed, corrective shortage unless we impose it on ourselves. And this adaptation, foolish as it now is, persists to do us great damage.

So I'm designed to not be able to resist. But I won't knuckle under. Evolution also gave me a reasoning brain, and if I can figure out why primitive people don't get heart attacks, I ought to be able to modify my own hand-to-mouth existence. The struggle may seem comical, but it's our evolutionary legacy. Anguish and all, it's natural. ■