

## I

### *Overpowered and Underworked*

Man has built up, through the ages, a huge fund of physical energy with which to maintain himself against the hostile forces of his environment. He possesses more than three times as much, for each pound of his body weight, as any other mammal which has yet been measured. For each pound of flesh in a horse, cow, dog or cat, there is considerably less driving power through adult years than there is in five ounces of human flesh. (The exact ratio seems to be about 2 : 7.75, according to Rubner.)

But even this great advantage has not satisfied man. He has developed cunning devices for the better use of his energies. He makes a calorie go much further than any other animal can. His brain and his endocrine glands make this economy possible in many ways, some of which have been described here. Above all other devices must be ranked his skill in logical analysis and mathematical calculation; for out of these have arisen all the technologies of modern chemistry, physics, and engineering. Tapping energies outside of his

skin has become one of our chief passions. It ranks with the tapping of inner energies and has made much greater progress during the last century than any other technique. The Technocrats have recently been massing statistics to show the millions of slaves which the engineers have added to our working population in the form of generators and motors. Nobody pays the slightest attention to the Mayor of New York City when he pushes a button in his office and starts a big factory running in Detroit or touches off a huge blast of dynamite on some dam site in the Rocky Mountains. Such energy controls are commonplace. We are, however, just beginning to take notice of a serious complication growing out of such prodigies of energy tapping. We see it is subtly changing—and perhaps aggravating—the technique of tapping man's inner energies. Here is how it works out.

Scientists and inventors develop ingenious mechanisms for tapping physical energies in coal, petroleum, wind, and water. Profit-seekers adopt these and sell them to consumers. In time the widespread use of the inventions saves a tremendous amount of labor. Hence people use up less and less of their inner energies on their jobs. Incidentally the same tricks of labor saving are applied to the activities of play—and even of physical exercise. A good talking machine enormously reduces man's efforts to hear good music. The radio reduces it

still further. The whole world of events and opinion is brought to one's bedside at a turn of a dial now—this being already a commonplace. In a single generation the energy consumed in common labor has dwindled by fully one-half, while that consumed in the most popular pleasures has declined perhaps by at least 25%.

But babies go right on being born with the same million-year-old pattern of energy equipment. By their twentieth year, those who weigh 150 pounds have nearly 53,000,000 calories of reserves to be used up to the day of natural death, while those who weigh 200 pounds have about 70,000,000 calories. In normal work and play only a small fraction of such energy can be used nowadays. But the ancient urge to use it persists; and, if thwarted, some trouble flares up. People therefore seek new outlets. This appears in a restless striving toward new excitements and ever widening variety. And this induces profit-seekers to make and sell all sorts of novelties, each one of these being designed on labor-saving lines. The outlets for energy increase in number, but the volume of energy each discharges declines; so that little improvement in man's situation results. At the same time, many ways of using up much energy have become either impossible or difficult for the city dweller. Automobiles crowd the highways and make walking a discomfort if not a dangerous sport. Horses are too rare and too expensive. The city boy finds no place to

play baseball. The clerk, growing stiff on his stool, craves tennis; but he must travel five miles from house to court, and that is not easily managed with regularity. So what happens?

Nervous ailments multiply as never before in history. The Mayos have reported that one-half of all the beds in American hospitals today are filled with patients suffering from some kind of nervous breakdown or disease. In New York State alone five people are sent to asylums every four hours of the twenty-four, year in and year out. Insanity, suicides, crime, perversions, and milder upsets increase with every passing season. Cults, fads, and quackeries arise to serve those who seek outlets but have not yet broken down. Observers who see only the surface of events often attribute all this to the ancient Puritanism of New England. Nothing could be further from the truth. The greatest single influence in turning America into a madhouse and a den of degenerates has been the money-maker's peddling all the labor-saving devices to a people sprung mainly from robust pioneers who were accustomed to use their big muscles fourteen hours a day outdoors. No doubt the outcome will be a finer civilization. But the price we pay is pretty stiff—millions of shattered creatures poisoned by pent up forces.

Nobody has hit upon a method of releasing normal energies within the flimsy walls of a city flat nor under the whirling shafts of a

great factory whose every effort is to lighten the strain on muscle. Even love life is largely thwarted by the cost of living and the insecurity of jobs in an industrial order whose so-called leaders understand nothing about its management except in so far as their personal profits are concerned. And sensory existence is perturbed by shrieks, groans, squeaks, rumblings, screechings, whistling, and all the rest of the urban pandemonium, which upsets many a stomach almost as much as the ears.

The shrewd man, finding that such an environment cramps his style by braking his energies, arranges his affairs so that, for a good part of his working year at least, he lives in a more wholesome place. Few well-to-do New Yorkers spend much time in Manhattan outside of the unavoidable working hours. The ruling classes of America all live mainly in distant suburbs or in the country as much as possible.

What, though, if you can't move out to live, work, and play as you like? Most of us can't. We must accept our neighborhoods and associates pretty much as they are. The adjustment grows more difficult daily. For today we are caught in the bitterest struggle for existence of this generation. Most of us are opportunists perforce. For the next few years in America, the average man must live, not by free choice, but by whatever good chance comes along.

Never before was it so important for you to operate your motor at peak efficiency. Hence our next problem is to survey the workshop. Here you stand or fall by your own efforts on the job. An automobile motor may fail from any one of a hundred or more structural weaknesses or poor design. Man may fail from any one of thousands. He is enormously more intricate than an automobile. To make his task still worse, hundreds of his flaws cannot be seen nor heard nor felt by himself or by a lay observer; and many others cannot be spotted, even by the best specialists, with high reliability.

There is, however, one common symptom of workshop trouble which anybody may readily observe. It indicates that something is being done wrongly, perhaps in any of a thousand ways. We call it fatigue. We recognize it in many forms and through many signs, such as increasing clumsiness, mind-wandering, a slowing down, drowsiness, and so on. So, before we pass on to the details of the workshop, we may profit by a bird's eye view of this broad maladjustment to jobs.