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TRUE

THE MAN'S MAGAZINE

JULY 25c

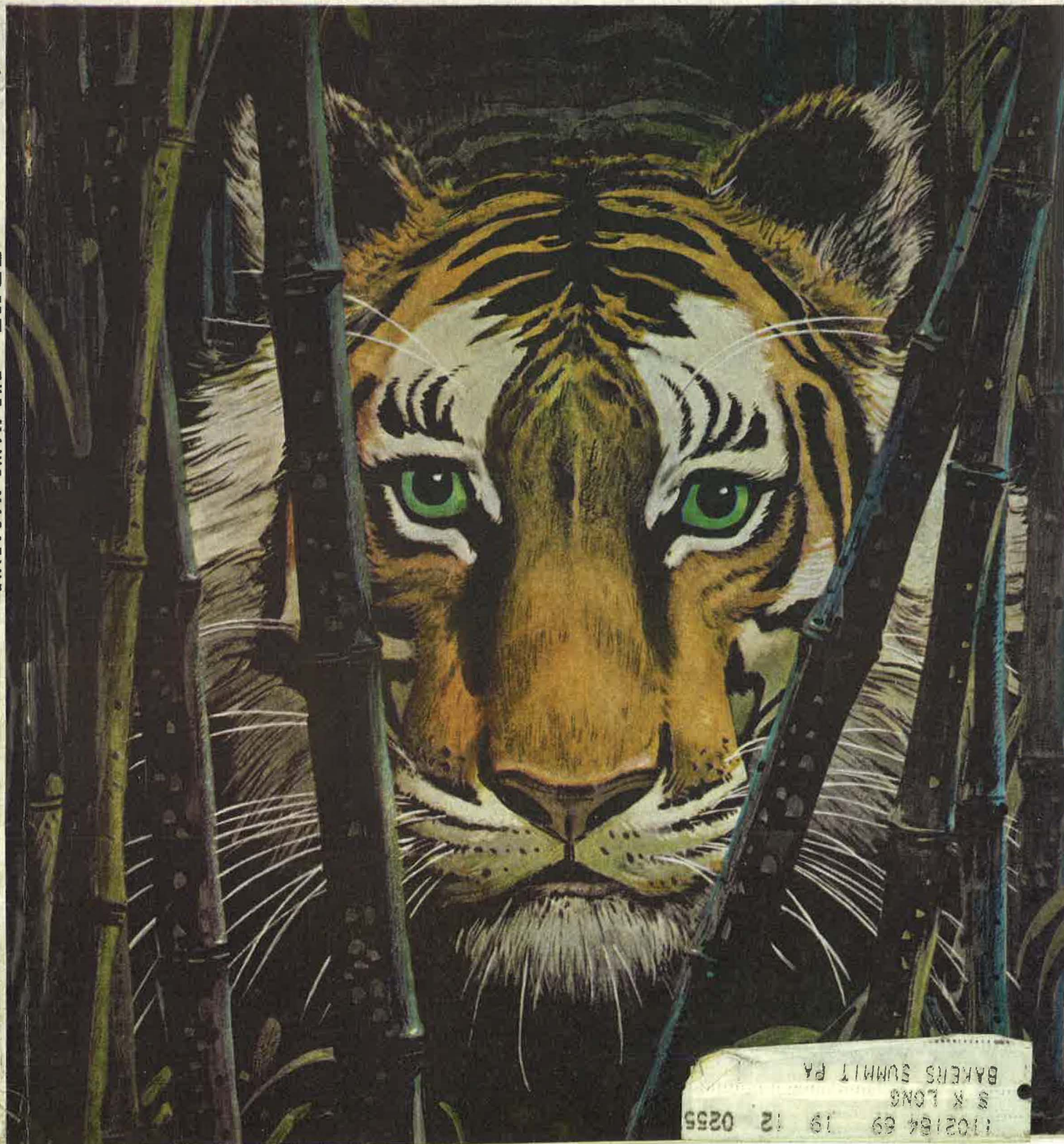
WHO SAYS SMOKING GIVES MEN LUNG CANCER?

See Page 18

plus

Lucian Cary • Ted Trueblood
Alan Hynd • Roy Chapman Andrews

A Fawcett Publication



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TRUE

the man's magazine

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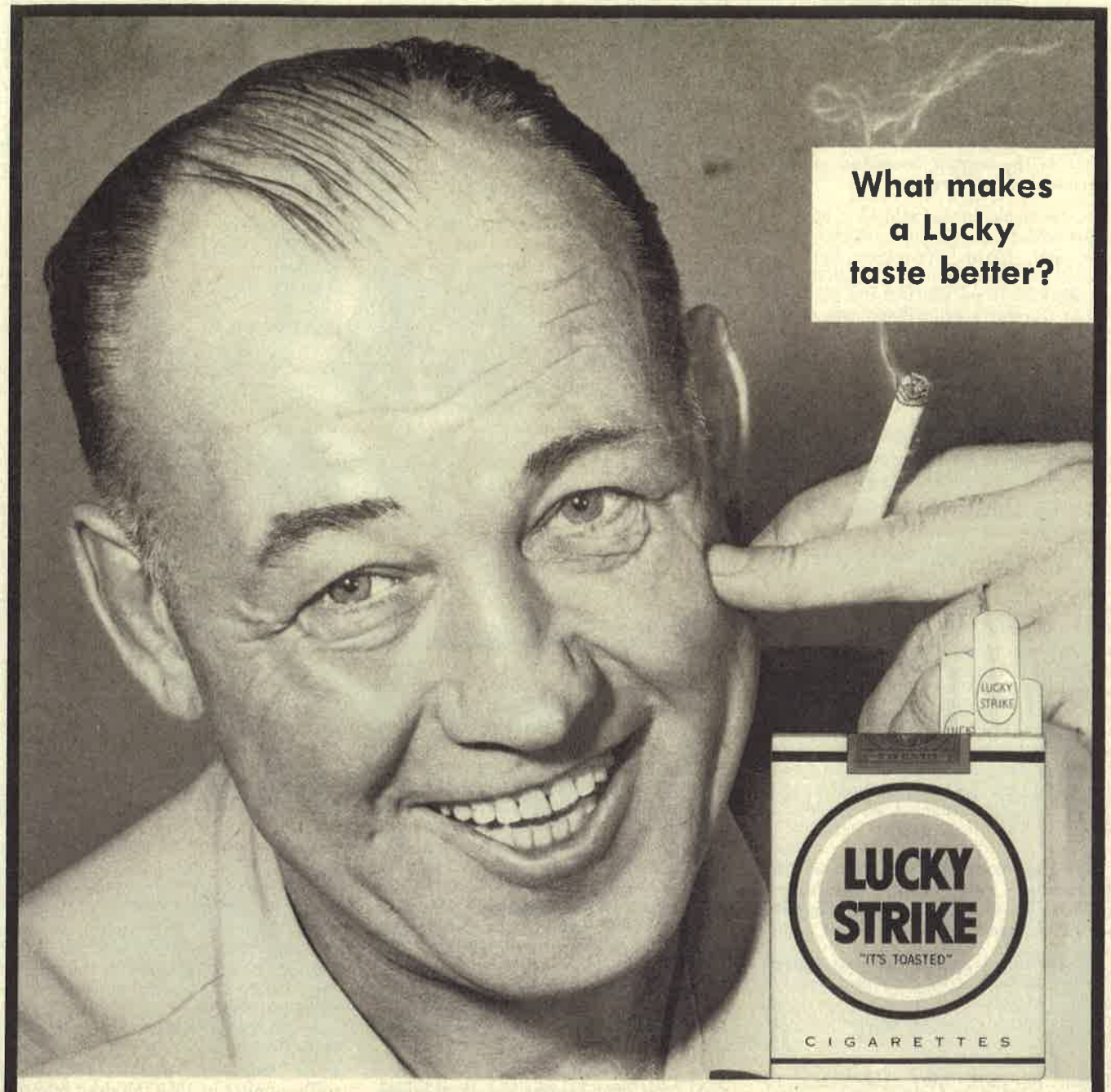


"IT'S TOASTED" to taste better!

"To me, taste is the big thing in a cigarette," says Jack Sharkey, former world's heavyweight boxing champion. *"And Luckies taste better than any of the others."* Luckies taste better for good reasons. First, L.S./M.F.T.—Lucky Strike means fine tobacco. Then, that tobacco is *toasted* to taste better. *"It's Toasted"*—the famous Lucky Strike process—brings Luckies' fine tobacco to its peak of flavor . . . tones up this light, mild tobacco to make it taste even better—cleaner, fresher, smoother. That's our story pure and simple: a Lucky tastes better because it's the cigarette of fine tobacco . . . and *"It's Toasted"* to taste better. So, for more smoking enjoyment, Be Happy—Go Lucky.

LUCKIES TASTE BETTER

CLEANER, FRESHER, SMOOTHER!

WHO SAYS SMOKING CAUSES LUNG CANCER?

In all the uproar over whether there's any connection between smoking and lung cancer, one thing gets more and more clear—that you can prove anything you want with statistics

BY DONALD G. COOLEY

Illustrated for TRUE by Graphics Institute, N.Y.C.

Do you see visions of lung cancer in the smoke that drifts up from your cigarette? Scarcely a smoker is now alive who hasn't read stories about grim medical studies which leave the general impression that "cigarettes cause cancer." You may feel like the man in a current joke, who was so scared by what he read about smoking and lung cancer that he gave up reading.

Some men have quit smoking, too. U.S. production of cigarettes dropped from 438 billion in 1952 to 423 billion in 1953. But because of the swing to king-size cigarettes, pounds of tobacco consumed remained about the same. Multitudes of men have kept on smoking, but something new has been added to their cigarettes: lung cancer worry.

Chances of self-destruction were stated so starkly by several eminent men of medicine that tobacco stocks took a Wall Street nose dive when the headlines splashed. Dr. Alton Ochsner, chairman of the department of surgery at Tulane University School of Medicine, says that "medical men are extremely concerned about the possibility that the male population of the U.S. will be decimated by cancer of the lung in another fifty years if cigarette smoking increases as it has in the past."

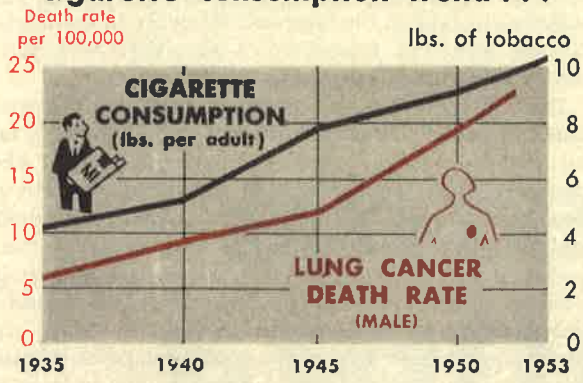
Several other researchers state the case against smoking just as bleakly. How sound is their crushing indictment? Cautious investigators generally agree with Dr. E. Cuyler Hammond, director of the statistical research section of the American Cancer Society, who likens smoking to a suspect located at the scene of the lung-cancer crime. This does not prove that smoking is guilty. It may well be that we have read only enough of a life-and-death detective story to be convinced that a disinherited son murdered old Lord Plushbottom, though it was really the butler who did him in. The trail is confused by baffling clues and a rogues' gallery of shady characters who act like accomplices.

Smoking, a smudged and cringing suspect in the prisoner's box, is now getting its day in court. There has now been time for geneticists, epidemiologists and other experts with specialized knowledge of different segments of the lung cancer picture to weigh the evidence. Nothing they have found suggests that we should take up smoking as an aid to health and longevity. But hardly any of them believes that the case against smoking is as clear-cut, devastating and conclusive as some reports indicate.

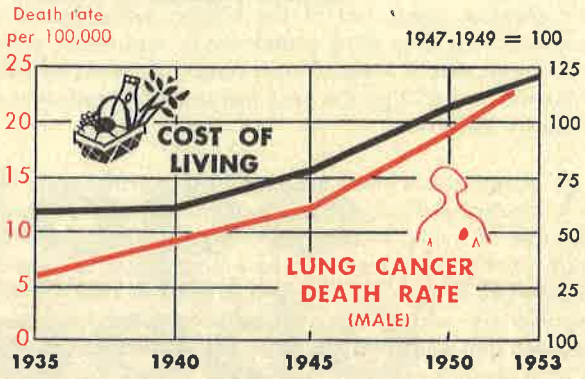
Evidence that links smoking with lung cancer is of two kinds—statistical and biological. Impressive

HERE ARE THE FACTS

Lung Cancer trend has followed cigarette consumption trend . . .

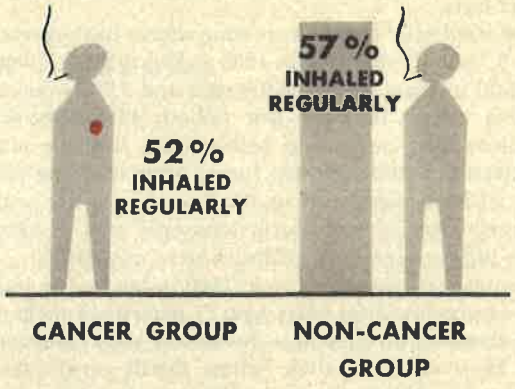


. . . Yet an unrelated series follows a similar trend



Lung Cancer cases most prevalent among heavy smokers . . .

. . . Yet inhaling, which brings more smoke to lungs, does not increase chances of getting cancer



Cancer has been induced in mice by applying tobacco tars to skin...

Recent investigators have reported a significant production of skin cancer in mice painted with tars distilled from tobacco smoke.

. . . But these experiments do not prove that tobacco tars cause Lung Cancer in man

Skin cancer is a completely different entity from lung cancer; the two diseases are not comparable. In addition, skin reactions vary from one animal species to another, so that a substance inducing skin cancer in mice does not necessarily induce skin cancer in human beings.

statistical evidence is obtained by comparing the smoking habits of men who have and do not have lung cancer, and by noting that the increase in the disease runs suspiciously parallel to cigarette sales. Biological evidence derives largely from mice skins, upon which some cancers have appeared after the mice were painted for a long time with tars distilled from tobacco smoke.

Statistics are no substitute for judgment. (You can drown wading across a river with an *average* depth of two feet.) And statistics do not lie—in fact, they do not *say* anything. Asking the right questions of statistics is one of the trickiest enterprises of the human brain, but is engaged in with abounding confidence by multitudes of men who think that if a tossed coin comes up heads 49 times, "statistics prove" that the next toss should be tails—yet the odds are still even.

A glance at the chart on page 19 shows that male lung cancer has increased in about the same proportion as the cost of living. A hair-trigger arguer might assert that four times as many men now have lung cancer because coffee costs $1.20 a pound as against 30 cents in 1930. Or, since incomes rise with living costs, more men get lung cancer because spot-welders in Pittsburgh make high wages. The way to prevent lung cancer would be to quit buying coffee or to reduce welder's wages.

Obviously, the statistics say nothing of the sort. The examples are intentionally ridiculous. Nobody would make such boners, but other statistical pitfalls are much more subtle. For one thing, we must be very sure about just what facts have been statisticized. Some experts doubt that statistics which indicate lung cancer to be increasing contain all the facts.

Reported male deaths from lung cancer have skyrocketed from 0.7 per 100,000 men in 1900 to 19.5 in 1953, more than a 25-fold increase. Some 17,400 men and 3,500 women died of lung cancer in 1952. But nobody really knows how prevalent lung cancer was before 1930. Reliable methods of detecting and diagnosing lung cancer in living patients have all been developed in the past twenty-five years. In the early days of the century, autopsy was necessary to prove lung cancer, and autopsies were uncommon.

Men died of chest diseases in 1900 in far greater numbers than at present. Fifty years ago, 27 percent of male deaths were classified as infectious diseases of the respiratory system. How many of those whose death certificates read "pneumonia," "lung abscess" or "tuberculosis" may actually have had lung cancer is completely unknown. By 1950, largely due to sulfas and antibiotics, only 6 percent of male deaths were charged to infectious chest ailments. About one-fifth of the men who would have died of diseases of the lungs (according to 1900 death-cause expectancies) stayed alive to die eventually of other diseases. Since man is mortal, reducing one cause of death results in a rise of other causes.

Age is an important factor, since lung cancer mainly strikes men who have passed the 50-year mark. Peak age of lung cancer incidence is about 65 years—not far short of average life expectancy. The boy grew older along with our national population. We now have four times as many people, 65 or older, as in 1900. Lung cancer is typically a disease of older age groups.

Physicians, like uranium hunters, find what they're trained to look for. Some medical cynics comment that the lung cancer rate rises in proportion to the number of physicians who care for a population of given size, and others note that the reported cancer rate commonly rises when a hospital installs a pathology department.

Nevertheless, if the effects of age, more accurate reporting and better diagnostic methods are allowed for, the majority of experts believe that a real and absolute increase in lung cancer has taken place. The *amount* of this actual increase is uncertain; almost certainly it is less than raw figures indicate. How much less is uncertain, and some authorities doubt that there is *any* increase.

"The recent ability to diagnose lung cancer plus the fact that it occurs only in older age groups, which have increased tremendously during the past two decades, seems sufficient to explain the increased incidence in the disease," says Dr. Milton B. Rosenblatt of New York Medical College, a specialist in pulmonary diseases.

Dr. D. W. Smithers, radiologist of Brompton Hospital, a famous London center for treatment of chest diseases, rakes his British colleagues over the coals for scarism about smoking: "The startling rise in the recorded death rate from lung cancer is in large part due to change in numbers and age of the population and to improved diagnosis. It is due in part to a real increase, but we are not yet in a position to say how great that increase is. We should ask ourselves how far we are performing a useful public service by helping to make a public issue of a comparatively small change within that group, which may be due in large part to our own method of recording."

Even if a given set of statistics is wholly accurate and complete, we must still ask, "Do they say what some interpreters say they say?" One authority who asks impertinent questions of that sort is Dr. W. C. Hueper of the National Cancer Institute, a division of the U.S. Public Health Service, which has on its staff a number of able cancer researchers who take a markedly "show me" attitude in the cigarette controversy. Here are some conclusions drawn from lung cancer statistics that Dr. Hueper believes are open to doubt:

The annual rise in lung cancer parallels quite closely the annual rise in cigarette sales. This suggests a cause-and-effect association. However, it is generally agreed that lung cancer is preceded, in smokers who have it, by anywhere from 20 to 40 years of smoking. "The lung cancer cases observed in 1950," says Dr. Hueper, 'therefore have no causal connection with the tobacco consumption of the same year but more likely, if at all, with that recorded from 1920 to 1935."

The 20 to 40-year latent period is disregarded by those who think smoking is in partnership with lung cancer because the two have been riding up the same statistical roller coaster. But the latency theory is dragged in to solve a most perplexing mystery about lung cancer—the fact that it is preponderantly a *male* disease, afflicting about six times as many men as women. Some students have a ready explanation of this sex discrepancy. Not enough women have smoked for 20 to 40 years to have earned a lung cancer.

Strangely, the sex-ratio statistics, to the extent that they prove anything at all, strongly suggest that *smoking has nothing to do with lung cancer*. If that sounds like a wild jump to a conclusion, consider the critical reasoning applied by Dr. Hueper. Hundreds of studies have been made of human cancer associated with exposure to cancer-inducing chemicals, or carcinogens as they are known in the trade. Many of these studies are done for industries in which men and women workers are exposed to possible carcinogens in the job environment. All previous studies of this type prove that if men and women are exposed to the same "cancer chemical" in their [*Continued on page* 84]

Who Says Smoking Causes Lung Cancer?

[*Continued from page 20*]

environment, the sexes tend to acquire the disease in equal numbers. If smoking causes lung cancer, the disease should afflict men and women in a ratio that comes closer and closer to 1 to 1. Instead, the preponderance of lung cancer in males has become more pronounced in recent years.

"This observation strongly militates against a predominant causal role of cigarette smoking in the production of lung cancer," says Dr. Hueper. Even if there are not so many women as men smokers, there is little doubt that the habit has increased at a much greater rate among the ladies ever since the social bars against smoking collapsed when flappers began crashing the barricades back in the Twenties.

Sex, not smoking, may have something fundamental to do with lung cancer susceptibility as well as other human vulnerabilities. Turkish women have been smoking cigarettes as indefatigably as gentlemen Turks for at least fifty years. They have had equality of exposure, at least within the harem, quite adequate to span the supposed latency period of cigarette-induced cancer. But in Turkey the male-to-female lung cancer ratio has not evened up. It has increased from 6 to 1 for males in 1935 to 8 to 1 in 1950.

Dr. William F. Rienhoff, Jr., pioneer lung surgeon of Johns Hopkins University, is one expert who thinks sex needs more looking into, speaking of lung cancer. "At the present time women are smoking almost as much as men and there has not been a proportionate increase of cancer of the lung in women," he observes. "Just as in cancer of other organs, there must be a sex tendency. For instance, cancer of the breast is very infrequent in men and more frequent, as everyone knows, in women."

Impertinent women who note that males have about five years less life expectancy than females are prone to remark that men must be made of biologically inferior materials. Despite statistics, most men will demand more proof before they buy that one.

Let us now look at biological evidence advanced as proof that smoking causes lung cancer. We hear little about one piece of evidence, probably because the most plausible (though unproved) deduction is that smoking has little or nothing to do with lung cancer. There has been no significant increase in cancer of the larynx, throat and nasal passages, although these areas are the first to be reached by tobacco smoke, and in greater concentrations than reach the lungs.

Over a period of many years, numerous investigators have painted the backs of mice with tars distilled from tobacco smoke to see if skin cancer could be induced. Most early experiments of this nature were discontinued as failures. An occasional skin cancer appeared, attributed as much to old age as to tar-painting by some workers. Investigators may have lost patience and quit too soon. Recently, Dr. Evarts A. Graham and Dr. Ernest L. Wynder have reported a significant production of skin cancer in mice painted with a condensed cigarette tar.

The report deals with *skin* cancer in *mice*. Some eager believers have snatched the ball, which they think is labeled "*lung* cancer in *man*," out of the scientists' hands, and have raced down the field in the wrong direction. Researchers are well aware that skin cancer (of which many kinds are known) is a different entity than lung or prostate or breast cancer. They also know that skin reactions of one species of animal may not be identical with another species, especially if biological differences are as great as those we like to think separate mice from men. Mouse hide is different from human integument, and your own skin is so different from that of any other man or woman (unless you happen to have an identical twin) that only you can supply skin that can be permanently grafted onto your person.

Cautions against drawing extravagant conclusions from mouse-skin data are sounded by several scientists of the National Cancer Institute. Dr. Jonathan L. Hartwell says, "We do not know whether man is more or less susceptible than mice to particular carcinogens. Some animal species, such as the rat, rabbit and dog, are much more resistant to certain chemical carcinogens than is the mouse, and vice versa, while in the monkey none of the powerful carcinogens has been shown to produce tumors."

"In the mouse itself," say Drs. Murray J. Shear and Joseph Leiter, "it is now abundantly evident that different tissues respond differently to the same compound. The solvent or vehicle may affect results profoundly. Moreover, the sex of the animal is not without influence on the results. Diet, too, may be an important factor."

Mouse skin tests are not *intended* to prove or disprove that smoking causes human lung cancer. They are a research tool, used for possible identification of cancer-causing substances in tobacco. Isolation of just one such substance, carcinogenic to human lung tissue, would do vastly more to prove smoking guilty of the crime than all the present guilt-by-association evidence. There may be such a substance, but up to now it has acted like the little man who wasn't there. *No known carcinogen has as yet been isolated from tobacco.*

Burning possibly produces chemicals in smoke that are not present in tobacco itself, but so far this line of investigation has not produced an indubitably guilty criminal. Experimental lung cancer, comparable to the type most common in human beings, has never been induced by inhaling tobacco smoke. Nicotine seems blameless as a lung-cancer factor. Tobacco tars—mixtures of forty or more substances—look more suspicious. Nicotine and tars are trapped to some extent by filter tips and cigarette holders (which vary greatly in efficiency) according to impartial studies by American Medical Association experts. The swing to filter-tip cigarettes is the biggest thing to hit the industry in years. Thousands of smokers must feel that filter-tips lessen their chances of lung cancer. Such hope may be in vain, for nobody knows what carcinogens should be filtered out, if there are any. A completely efficient filter, says a high-dudgeon editorial in the Journal of the American Medical Association which lambastes some manufacturers' claims, would leave the smoker inhaling nothing but hot air.

A more curdles-some thought comes from a pessimistic investigator who points out that

tobacco smoke possibly contains a built-in defense factor that shouldn't be wasted. The smoke is largely composed of finely divided carbon particles. Many chemical substances adhere to fine particles of carbon and become deactivated. Toxic chemicals in tobacco may adhere to smoke particles. They may be carried into and out of the lungs as free-riders. If that is true, filters and holders that screen carbon particles out of tobacco smoke may do more harm than good. This idea, like so many assertions about lung cancer, remains unproved, but it shows how a crystal-clear subject gets clouded up when scientists start looking into it.

Smokers who inhale ought to be more liable to lung cancer than those who don't. Inhaling increases the intensity and duration of lung exposure to tobacco smoke. All studies of environmental cancer involving known carcinogens agree that cancer incidence increases directly with intensity and duration of exposure. If smoking does cause lung cancer, the practice of inhaling is a remarkable exception to an otherwise universal rule. For Doll and Hill, in their famous studies, concluded that inhaling (contrasted with smoking but not inhaling) did not seem to influence the likelihood of acquiring lung cancer. In the opinion of Dr. W. C. Hueper of the National Cancer Institute, this suggests that smoking must be of very minor influence in causing lung cancer, if it has such an effect at all.

Another strange discrepancy is the seeming fact that pipe and cigar smokers are not nearly so likely to acquire lung cancer as cigarette smokers. Doll and Hill concluded that "it certainly appears that the risks are less in pipe smokers." Data collected in a New York State study by Drs. Levin, Goldstein and Gerhardt, indicate that pipe and cigar smokers have no higher incidence of lung cancer than nonsmokers. Since many men smoke anything combustible, over a lifetime, data concerning smoking habits may be rather cloudy. While many researchers feel that cigar and pipe smokers are less threatened by lung cancer than cigarette smokers, there is no unanimous agreement. Some feel that pipe and cigar men simply smoke less tobacco on the whole. Others point out that most cigarette smokers inhale, and most cigar and pipe smokers do not. But if inhaling does not significantly increase lung cancer incidence, lack of inhaling could hardly explain a relative immunity.

A different possibility is advanced by Dr. W. G. Frankenburg, director of research for the General Cigar Company. All cigar tobaccos are air-cured. Most cigarette tobaccos, except Maryland and Burley, are flue-cured. The two types deviate fundamentally in chemical composition. "There are, for instance, some 25 percent of carbohydrates in flue-cured tobaccos compared to approximately 2 percent in a typical cigar tobacco," says Dr. Frankenburg. "The quantities of nitrogen compounds in both tobacco types differ by a factor of about two. The smoke of flue-cured tobacco is acidic whereas cigar tobacco is alkaline. I mention these facts to illustrate the drastic difference between flue-cured cigarette tobaccos and air-cured cigar tobaccos as far as their basic chemical make-up is concerned and to point out that these differences may conceivably cause different physiological effects."

Seeming differences between cigar, pipe and cigarette smokers may not be real but may arise from unknown errors in gathering statistics. Yet the possibility that a cancer-causing substance might be contained in tobacco products, but not in tobacco itself, intrigues many energetic minds. The tobacco industry may be on the verge of invasion by new products which will bid for the smoker's trade on grounds of less irritation, less toxicity or less worry.

A Donnybrook Fair slugging match of claims and counterclaims can easily erupt from freewheeling speculations about substances contained in match heads, lighters, cigarette paper, flavoring agents, moisture-controlling additives and so on. Cigarette paper is viewed with suspicion by Jimmy Rand, the fabulous Cleveland inventor who developed a low-priced Bendix washing machine, a light-weight fabric ten times as warm as wool, a vacuum-cup machine to

"Be right back, sir—I just remembered we do have *one* suit your size."

massage hearts that stop on the operating table and other successes. Rand has been developing a new kind of cigarette wrapper which is about ready for commercial exploitation. I have smoked a couple of cigarettes wrapped in Rand's experimental product. They looked, tasted and puffed like ordinary cigarettes. The main difference I noticed was that the cigarette went out rather quickly when I laid it on an ash tray—no doubt an advantage for smokers who are startled by housewifely yelps if a smoldering butt happens to scorch an old Sheraton tabletop.

Rand's wrapper, like regular cigarette paper, contains chalk enmeshed in cellulose fibers. Rand uses methylcellulose, a substance that swells into a soft gel when wet. It is an ingredient of some bulk-forming laxatives and appetite-suppressors that fill the stomach without calories. Regular cigarette paper uses cellulose from flax (not rice). All wrappers, including Rand's, need other substances to overcome bitterness, control burning speed, or keep the cigarette from going to pieces when wet.

Down through the years, U. S. patent history records dozens of claims for "improved" cigarette wrappers. Why another? Behind-the-scenes excitement is stirred mainly by the work of a single investigator who is said to have induced an appreciable percentage of *skin* cancers in mice by painting them with tars distilled from cigarette paper smoke. This work has not been published in a research journal. Presumably, if cigarette papermakers had reasonable reason to believe that a manufacturing change would remove something unhealthful from their product, they would switch over in an instant from economic if not from humanitarian motives. One mad genius of my acquaintance suggests that cigarettes be wrapped in mouse skins. The product would be fantastically promotable on the basis of statistical evidence that mouse skins absorb carcinogens!

Extraneous ingredients that come along for the ride with tobacco smoke have been suggested as possible cancer factors. Arsenic is a known carcinogen, and tobacco is likely to contain arsenic residues from insect sprays. This promising clue petered out when it was found that reported lung cancer increase in Turks is about the same as in other countries, although Turkish tobacco is practically arsenic-free.

Radioactivity is a notorious cancer-inducer. Tobacco contains minute amounts of radioactive potassium—but so do we. In fact, whether we smoke or not, we're all about as radioactive as we can stand to be. A. T. Krebs of the Army Medical Research Laboratory at Fort Knox finds that "the amounts of radioactive substances deposited in the body exercise an irradiation burden on the body close to the accepted tolerance figures." We get radioactive from our own potassium content and from bombardment by cosmic rays. "Such radioactivity as is present in cigarette tobacco remains in the ash and very little, if any, is transferred in the smoke," is the conclusion of a study by Professors F. W. Spiers and R. D. Passey of the University of Leeds.

Smoking has been located at the scene of the lung-cancer crime but the most rigorous frisking has been unable to produce any concealed weapons. At least one other suspect has been caught carrying a very deadly weapon indeed. It is benzpyrene, a known cancer-causing chemical produced by the incomplete combustion of hydrocarbons. Auto engines, coal and oil and gas furnaces, the dust of asphalt roads and rubber tires, contribute possible carcinogenic factors to pollute the air in ways that look very suspicious to statisticians. Lung cancer incidence is higher in urban than rural areas, higher in industrialized than in agricultural states. One study of railroad workers disclosed that three-fourths of those who had lung cancer were exposed to inhalation of soot from coal-burning engines. The number of lung cancer deaths in English towns is reported to increase in proportion to the number of chimneys per acre.

Ten years ago, the U.S. Public Health Service showed that cancer could be produced in animals by extracts of tarry matter collected from the air of eight different United States cities. The New York City Department of Health estimates that 176 tons of solid matter, including more than half a ton of tarry materials, settle onto each square mile of Manhattan every month.

If you work in a dirty section of a city, and labor outdoors, your lung cancer risk is sharply greater than if you are an indoor worker in a relatively clean part of town. At least this is true of Chicago, in the opinion of Dr. Clarence A. Mills, professor of experimental medicine at the University of Cincinnati. Dr. Mills, an authority on effects of air pollution, analyzed the lung-cancer death statistics of various Chicago districts. "Physical workers, expending the greatest amounts of energy and breathing the largest amounts of dirty air, face the greatest hazards," he concludes. Outdoor laborers have death rates from lung cancer 2½ to 3½ times higher than professional groups, in both clean and dirty Chicago areas. The lung cancer death rates among laborers who work in dirty districts are almost twice as high as in those who labor in clean districts.

Such statistics—which do not prove that polluted air causes lung cancer, any more than similar statistics about smoking—are well known to cancer researchers. Many of them feel that the smoke screen raised by the cigarette controversy may impede a very important search for suspicious carcinogens. With few exceptions, relatively little is done to lessen the air pollution of cities. To the extent that we drive cars, heat our homes, use electricity from fuel-burning power plants, we all contribute a little to nest-fouling. The tobacco octopus is easier to kick and, moreover, some people seem to derive comfort from smoking, an added incitement to the evangelistic.

What smokers want to know, of course, is whether the habit threatens to shorten their lives. A fair way to state the situation in the light of present knowledge is as follows: Many studies suggest that smoking may be an additional lung-cancer factor in men who have lung cancer.

Does that sound like double-talk? An almost completely ignored factor in lung-cancer studies makes it meaningful. This factor may compel scientists to throw most of the current scare statistics out the window and start over again. Men who have lung cancer are obviously susceptible to the disease. We do not know whether men who do not have lung cancer are similarly susceptible. To compare the smoking habits of the two groups may be irrelevant. It may amount to comparing groups that are fundamentally

unlike in the basic ways you are trying to prove are alike.

Vastly more is known about hereditary tendencies toward lung cancer in mice than in human beings. One scientist who knows so much about mice that he has begun to wonder about men is Dr. Walter E. Heston, head of the general biology section of the National Cancer Institute. Speaking of mice, he says: "The role of genetic factors has been demonstrated more clearly in the development of lung tumors than in the development of any other type of tumor. It has been shown that multiple genes are involved in the inheritance of lung tumors, and the effect of specific identified genes has been demonstrated." These particular "cancer genes" seem to act only in the lung and have no effect in other body sites.

Such "clear-cut observations on the inheritance of pulmonary tumors in mice point to the need for genetic studies on lung cancer in man." Some men and women who never smoked in their lives develop lung cancer; others who smoke like chimneys for years die in old age of some other cause. The large number of chain-smokers in our population, and the very small proportion of these millions who actually acquire lung cancer, suggests that some mysterious mechanism protects the body, if tobacco has any influence as a cancer-igniter. We have practically no scientific answers to such speculations.

A startling report about mysterious hereditary factors in another kind of cancer comes from Dr. Ian Aird and his group at the University of London. They find that cancer of the stomach is significantly more common in persons who have blood type A than in those who have blood type O. Blood groups are of course inherited.

Three-fourths of the mice used in cancer research in this country come from the famous Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine. The laboratory breeds about a million mice a year, of "fixed" genetic strains. Dr. Clarence C. Little, director of the laboratory, is a world leader in the study of hereditary susceptibilities or resistance to a host of diseases. "If smoke in the lungs were a sure-fire cause of cancer, we'd all have had it long ago," he states. "The cause is much more complicated than that."

Dr. W. C. Hueper, who perused some 900 bibliographic references in preparing a monograph on lung cancer, says: "It may be concluded that the existing evidence neither proves nor strongly indicates that tobacco smoking, and especially cigarette smoking, represent a major or even predominating causal factor in the production of cancers of the respiratory tract. . . . If excessive smoking actually plays a role in the production of lung cancer, it seems to be a minor one if judged from the evidence on hand."

If you have smoked for many years, will it do any good to stop? Lung cancers have developed ten years or more after a man stopped smoking, which might indicate irreversible lung damage, or that smoking had nothing to do with the disease. Dr. Alton Ochsner, who is convinced that lung cancer is going to increase by leaps and bounds if men don't stop smoking, feels that it makes little difference whether a man who has smoked for twenty years swears off.

Dr. Walter B. Martin, president-elect of the American Medical Association, is fatalistic. "I've smoked long enough to have incurred all the possible dangers and don't think I will stop now."

Perhaps we confirmed smokers should strive for the nobility and aplomb of Sir Walter Raleigh, who introduced smoking into England and once had his head doused by an excited onlooker who thought he was on fire. An old account of Sir Walter's execution records that "He tooke a pype of tobacco a little before he went to the scaffolde."—**Donald G. Cooley**