

Grand Gesture

Perhaps the most revealing footnote on the unrestricted offer of the six major United States cigarette manufacturers to donate \$10 million to the American Medical Association to finance research on tobacco use and health is that this grand gesture has moved even the American Cancer Society to applause. It's been a long, long time since the tobacco industry and the Cancer Society have seen eye to eye.

It is hoped that the lavish monetary resource placed in the hands of the AMA by the cigarette producers will be instrumental in expanding the frontier of scientific knowledge. It is hoped, too, that the public spiritedness of the cigarette manufacturers will signalize a new approach to the grave problem of tobacco and disease by the tobacco industry and by its antagonists.

Unresolved question . . .

The very fact that the nation's largest medical organization has instituted this research project and has accepted this generous financing from the tobacco industry places dramatic emphasis on the unresolved nature of the tobacco-health question.

It should not be overlooked that the AMA research program is being launched despite the position taken by the Surgeon General and his advisory committee that there exists a causal link between tobacco use and the incidence of lung cancer.

It is pertinent, too, to point out that the Surgeon General and his committee have not closed the case against tobacco by any means. Actually, as Alan Donnahoe demonstrates in his incisive analysis of the Surgeon General's report (*See page 14, this issue of "TOBACCO"*) they have raised more questions than they have answered.

Not enough evidence . . .

It is precisely for this reason that the Congress of the United States is moving rapidly to enact legislation authorizing a crash program on tobacco, its nature and its effect on the human body at a cost of \$5 million to \$10 million.

Apparently, the feeling is widespread among the members of the Congress that not enough evidence on the matter of tobacco and health has been unearthed thus far to warrant punitive action whose effect would be felt not only by businessmen but by large masses of ordinary citizens to whom tobacco is a way of economic life.

"TOBACCO" hopes that the action of the cigarette manufacturers is a harbinger of a new outlook within the industry. There should be more willingness on the part of the industry to face facts squarely and to accept the reality that its problems are, like it or not, very much in the public domain.

Tobacco

WEEK OF FEBRUARY 14, 1964

Liggett & Myers Reports Sales Increased in '63

Liggett and Myers Tobacco Company reported net sales of \$502,683,153 for 1963, an increase of \$2,727,472 over 1962 sales, in the annual report released in New York last Tuesday. The company reported net earnings of \$5.96 per share of common stock, compared to \$6.14 in 1962.

In his letter to stockholders President Zach Toms, stated:

"Domestic unit sales of cigarettes showed an increase over sales for the previous year, while export sales were slightly off. Export sales for the whole industry were less in 1963.

"During the last six months of the year, earnings were affected by heavy expenses amounting to several million dollars, incurred in advertising and promoting the new Lark cigarette; otherwise, we estimate that earnings
(Continued on page 29)

Burley Sales Spurt On Lexington Market

LEXINGTON, KY. — Volume, which took a nosedive here for the past week or so, perked up this week as auction sales of burley tobacco continued strong.

An estimated one million pounds of burley hit the Lexington warehouse floors ready for Monday's sales.

The unexpected move forced a third set of buyers back into action; only two sets of buyers originally had been scheduled to operate here this week.
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EEC Council Rejects Greek Duty Application

ATHENS, GREECE — The EEC-Greece Association Council in its meeting of February 3 in Brussels, at ministerial level, turned down the application of Greece for a further reduction of customs duties on imports of unmanufactured tobacco in the EEC member countries.

In particular, Greece had asked for a 70 per cent reduction of basic duty on leaf tobacco applied on January 1, 1957, instead of 50 per cent actually in force, along with a second review of
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No Strings Attached . . .

Cigarette Producers Donate \$10 Million to AMA Research

See Editor's Forum, page 7: "Grand Gesture"

CHICAGO, ILL.—The six major United States cigarette manufacturing companies have offered \$10 million to the American Medical Association to finance research on smoking and health and the offer has been accepted with no strings attached, Dr. Raymond M. McKeon, president of the AMA's Education and Research Foundation announced here last week.

Dr. McKeon said the offer came in a joint letter signed by presidents of the American Tobacco Company; Brown and Williamson Tobacco Corp.; Liggett and Myers Tobacco Company; P. Lorillard Company; Philip Morris, Inc., and R. J. Reynolds Tobacco Company.

Dr. McKeon previously had announced the appointment of a committee of five scientists to direct the foundation's basic research to determine how tobacco affects health.

Three members of the AMA foundation committee also were members of the United States Surgeon General's advisory committee which last month announced a unanimous conclusion that smoking is a health hazard. They
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Some Cigarette Plants Cut to Four Day Week

GREENSBORO, N. C.—Some sections of the cigarette division operations of the P. Lorillard Company plant here have been cut back to a four-day week. The cut-back became effective at the end of January, Charles Welborn, plant manager, said.

Other information here is that production has been reduced to four days a week at the Louisville, Ky., plants of Lorillard, Brown and Williamson Tobacco Company, and Philip Morris, Inc.

Manager Welborn here and A. J. Cheek, Jr., Lorillard manager in Louisville, both said higher production aimed at Christmas sales normally leads to lower production early the following year. They said the government report on smoking health was not necessarily the reason for the cutback.

Reports from Louisville were that Lorillard's smoking tobacco and cigar divisions were working overtime.—HAD.

Speedy Passage Expected For Tobacco Research Bill

WASHINGTON, D.C.—A resolution calling for a multi-million dollar crash research program into quality and health factors of tobacco was approved last week by the tobacco subcommittee of the House Agriculture Committee. Rep. Harold D. Cooley (D-NC), chairman of the agriculture committee, and author of the resolution, said he expects the full committee to report the resolution favorably without delay and present it to the House for immediate action.

As approved by the subcommittee,

the resolution embraced features of several similar proposals offered following the Surgeon General's report on tobacco and health last month. One of the sponsors was Rep. Horace Konegay, of Greensboro, whose district is both a large producer of tobacco and manufacturing center, including large plants of the American Tobacco Company and Liggett and Myers Tobacco Company in Durham and the large plant of the P. Lorillard Company in Greensboro.

(Continued on page 28)

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Producers Aid AMA Research

(Continued from page 9)

are Dr. Maurice H. Seevers, chairman of the pharmacology department of the University of Michigan; Dr. John D. Hickam, chairman of internal medicine at Indiana University, and Dr. Charles LeMaistre, professor of internal medicine at Southwestern Medical School in Dallas, Tex. Dr. Seevers is head of the AMA foundation committee.

The other two members of the AMA committee are Paul S. Larson, chairman of pharmacology at the Medical College of Virginia in Richmond, and Dr. Richard J. Bing, chairman of medicine at Wayne State University's Medical College in Detroit.

The Surgeon General's advisory committee reached its conclusion linking smoking and disease on a study of reports and research by others.

The AMA's foundation is committed to its own study "devoted primarily to determine which significant human ailments may be caused or aggravated by smoking, how they may be caused, the particular element or elements in smoke that may be the causal or aggravating agent, and methods for the elimination of such agent."

The AMA's House of Delegates in December authorized the tobacco and health research project and the AMA's board of trustees appropriated \$500,000 to get it started.

The tobacco companies, in offering up to \$10 million five equal annual installments, said they understood that such contribution "would be accepted only if given without restrictions."

Dr. McKeon said, however, this money will be used only for research on tobacco and health.

The companies said also it is their understanding that the project is to be "conducted effectively, exhaustively and with complete objectivity by a director having the requisite experience, qualifications and integrity."

In their letter the tobacco company president said:

"The undersigned companies understand that pursuant to action taken by the House of Delegates of the American Medical Association at its meeting last December, the American Medical Association Education and Research Foundation is to undertake a comprehensive

program of research on tobacco and health, devoted primarily to determining which significant human ailments may be caused or aggravated by smoking, how they may be caused, the particular element or elements in smoke that may be the causal or aggravating agents and methods for the elimination of such agents."

"It is the further understanding of the undersigned companies that the project is to be conducted effectively, exhaustively and with complete objectivity by a director having the requisite experience, qualification and integrity.

"The announcement of the project indicated that it would be financed by a substantial contribution from the American Medical Association and that contributions would be solicited from other sources, with the understanding that contributions would be accepted only if given without restrictions.

"In the hope and expectation that the research project proposed will aid materially in finding solutions to public health problems of national and international concern, the undersigned companies are willing to contribute to the American Medical Association Education and Research Foundation for use in financing the research project during the period 1964 through 1968 a total of \$10 million."

The American Cancer Society said it was "pleased to learn that the tobacco companies decided to grant" the funds for the "research project to eliminate whatever element there is in the smoke that may induce disease."

"We hope that some day a safe cigarette can become a reality," the society added. "In the meantime, we would be remiss if we failed to emphasize the causal link, so clearly confirmed in the Surgeon General's report, between lung cancer and cigarette smoking. We cannot forget that this year an estimated 41,000 Americans will die of lung cancer."

The amount given to the AMA is about 10 times the yearly budget of the Tobacco Industry Research Committee, a scientific group organized by the industry to conduct research into tobacco and health.

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Research Legislation Nears Approval*(Continued from page 9)*

Provision is made in the resolution for coverage of tobacco generally, with authority to establish and operate laboratories and field stations located so as to relate research studies and findings as closely as possible to the production and handling of tobacco.

Rep. Cooley said "the resolution authorizes the appropriation of such sums as Congress may from time to time determine to be necessary." It has been suggested that five to ten million dollars would be needed to carry out the purposes of the act. Mr. Cooley and other supporters of the crash program pointed out that this is a minute sum compared to the huge amount of revenue derived by the federal government and the states from tobacco products.

Rep. Cooley said he does not challenge the statistics presented by the Surgeon General's panel, and that he can see the value of the report as a stimulus to initiating research. But he said he regretted that the report is being used in some quarters to condemn tobacco generally and to destroy the tobacco program, "which maintains a decent level of income for our farm families that are engaged in the production of tobacco." He thought "a good many things must be cleared up and that he thought research will do it."

"That is the purpose of the resolution the tobacco subcommittee ap-

proved. We are going to see to it that the people who enjoy smoking have maximum assurances of health."

The resolution authorizes and directs the Secretary of Agriculture to establish and place into operation at the earliest practical date a special program or research into the production, handling, manufacture and use of tobacco.

The special research program would include laboratories and field stations, as determined necessary by the secretary, and located so the most effective use of typical soil, climate and environment factors are available.—HAD.

TIRC Director Hails**Industry AMA Donation**

Dr. Clarence Cook Little, scientific director of the Tobacco Industry Research Committee, Inc., issued the following statement recently in New York when asked for comment on the announcement by the American Medical Association Education and Research Foundation in Chicago of their acceptance of the \$10 million donation from the tobacco industry to finance research in smoking and health:

"I am much pleased with this additional significant industry support of research on tobacco and health under the auspices of the American Medical Association.

"The Tobacco Industry Research Committee which is beginning its eleventh year of a research program in this field, is expanding that program and looks forward to cooperating with the American Medical Association in advancing its proposed new studies.

"An offer of cooperation, made by Tobacco Industry Research Committee to the American Medical Association as well as to the United States Public Health Service by telegram on January 11th, has been graciously accepted by both organizations.

"The rapidly broadening interest in research on tobacco and health should lead to significant progress in filling the many gaps which have existed and which still exist in our knowledge in that field."

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The Surgeon General's Report: Its Inconsistencies and Contradictions*

By Alan S. Donnahoe*

The recent report of the Surgeon General's advisory committee is based largely on statistics of high questionable nature, and is shot through with inconsistencies and contradictions.

If we are to accept the major conclusion that cigarette smoking is a major cause of lung cancer, we must also accept other illogical and sometimes downright ridiculous conclusions that evolve from the same statistical evidence.

In this analysis, no attempt will be made to review all of the evidence in the lengthy report. Rather, an effort will be made to review some of the more glaring contradictions in this evidence, which up to this time have received little emphasis or publicity.

This discussion will be confined to the report itself. No attempt will be made to consider any other evidence, outside the report, even though some of this is quite dramatic in its apparent refutation of the committee's main conclusion.

The advisory committee included eight doctors, one chemist, and one statistician. In view of the fact that most of the available evidence was statistical, it is unfortunate that more statisticians were not included on the committee.

This is particularly important, it would seem, inasmuch as the committee did not undertake any original research but rather confined itself to a review and evaluation of research conducted by others. Such a review of statistical work performed by others is especially difficult for anyone other than a highly competent statistician.

The major evidence before the committee evolved from seven statistical surveys, sponsored by a variety of agencies. In terms of basic method-

Editor's note: Alan S. Donnahoe is the executive vice president and assistant publisher of the Richmond Times-Dispatch and News Leader, With an extensive background in research work, he has published various articles in statistical and other professional journals, lectured in statistics at the University of Richmond, and served on advisory committees to the United States Bureau of the Census, United States Bureau of Labor Statistics, and the American Statistical Association. He is also a steady cigarette and pipe smoker.

ology, by the committee's own admission, these surveys leave much to be desired. Here is the description applied by the committee itself:

"Various reasons dictated the choices made of the seven study populations, considerations of feasibility playing an important role. None of the populations were designed, in particular, to be representative of the United States male population. An answer to the question 'to what general population of men can the results be applied?', must involve an element of unverifiable judgment. The seven studies differ considerably in size. They vary also in the extent to which they are free from methodological weakness."

What this means, in non-technical language, is that the findings of these various surveys, as a matter of sound statistical procedure, cannot be considered as representative of any known population of any kind. Statistically speaking, this is a serious indictment of any survey.

On this subject, a further comment by the committee, dealing with the

percentage of individuals who failed to respond to survey questionnaires, is quite significant:

"In the two American Cancer Society studies it is not possible to present meaningful percentages, since each research volunteer selected her own small part of the study population from among her own acquaintances."

One need not be a statistician to recognize the dangers involved in selecting any sample from among one's own "acquaintances." It would be difficult to suggest a more unscientific sampling procedure.

But this is not all. The committee goes on to say:

"In all five studies that had a clearly defined target population, sizeable proportions of the population were omitted. The major reason was failure to answer the questionnaire; in addition, certain replies were rejected as too incomplete."

Individuals who failed to respond in point of fact, represented 15, 32, 32, 43 and 44 per cent in the five studies. This, again, is a major statistical deficiency, raising the possibility of serious bias in the results. This possibility, at least in part, is acknowledged by the committee.

When we consider both of these factors: (1) the fact that respondents were selected on a haphazard or volunteer basis, and hence were not representative of any known population; and (2) the large percentage of non-response encountered—the result is a statistical melange of unknown and unknowable reliability.

This may account for some of the strange and unexplainable results produced by these surveys. In most instances, for example, the mortality rate after adjustment for age is far below the national average—not only for non-smokers, but often for heavy cigarette smokers as well. In three of the seven studies, the age-adjusted mortality rate of heavy cigarette smokers were lower

*Reprinted from the "Richmond Times-Dispatch," January 19, 1964.

than the average for all males in the United States population, and in one survey was almost 30 per cent lower than the national average!

The committee comments on this as follows:

"It is clear that the seven . . . studies involve populations which are healthier than United States males as a whole. Secondly, the low death rates for non-smokers suggest the possibility that the studies recruited unusually healthy groups of non-smokers."

After pointing out that the exclusion of hospitalized and seriously ill individuals might account for some of this variation, the committee admits that "the sizes of the differences appear surprising." All things considered, this would seem to be a rather remarkable understatement.

Oddities Discovered In Statistical Evidence

There are other oddities in the statistical evidence, such as one finding that men from 80 to 89 who are heavy cigarette smokers have about 40 per cent less mortality than non-smokers, and still another finding in one of the surveys that men smoking less than 15 years have a slightly lower mortality rate than non-smokers.

It is possible that these freakish results evolve from the use of small samples in these sub-categories; but this cannot account for another and far more significant paradox.

If the statistical evidence before the committee is to be accepted and believed in full, then we must conclude that cigarette smoking not only causes lung cancer, but is also a major cause of almost every other type of death from all diseases of all kinds!

The astonishing fact—if we are to believe the statistical evidence cited by the committee—is that lung cancer accounts for only 15 to 20 per cent of the excess deaths attributable to cigarette smoking. About half of the excess is to be found in heart disease, and another quarter of the excess in other chronic diseases of various kinds.

Altogether, if projected to the United States population, this would mean that some 250,000 people die every year from some disease induced by cigarette smoking, and that this occurs without a single one of these deaths being noted as such by clinical test of any kind. As one statistician puts it; only by their numbers are they known!

This rather staggers the imagination, and particularly so when the committee finds no casual connection between these various diseases and cigarette smoking.

The committee does consider some

hypotheses that have been offered on the subject—that smokers differ physically from non-smokers, or perhaps that cigarettes have a generally debilitating effect—but it passes no judgment on any of these.

The statistical evidence is equally paradoxical on the matter of pipe smoking. Here is what the committee has to say on this subject:

"Death rates for current pipe smokers were little if at all higher than for non-smokers, even with men smoking 10 or more pipefuls per day and with all men who had smoked pipes for more than 30 years. Ex-pipe smokers, on the other hand, showed higher death rates than both non-smokers and current smokers in four out of five studies. The epidemiological studies on ex-cigar and ex-pipe smokers are inadequate to explain this puzzling phenomenon."

In other words, the statistical evidence would indicate that it is quite safe to smoke a pipe, but highly dangerous to discontinue the practice! This is indeed a puzzling phenomenon, but if we are to accept the other statistical findings in the report, we must accept this one as well.

Another curious finding in the report shows the relative mortality from all causes, in relation to cigarette smoking and other factors. While such smoking would appear to raise the mortality rate in every instance, the other factors also appear quite potent.

For example, cigarette smokers who take heavy exercise have a lower mortality rate than non-smokers who take none. Similarly, cigarette smokers among married men have just about the same mortality rate as non-smokers who are single. If cigarette smokers are so fortunate as to have long-lived parents and grandparents, their mortality rate is about the same as for non-smokers with short-lived ancestors.

Incidence Varies from One Region to Another

From other data shown in the commission report, it appears that the incidence of certain types of cancer tends to vary from one region of the country to another, and even by individual city, and is inversely related to income level. Among males in the lowest income class, for example, the lung cancer rate is double that of high income males. None of this would seem to have any relationship to cigarette smoking. Other instances cited in the commission report:

Bartenders, waiters and others engaged in the alcoholic beverage trade have double the average mortality rate for lung cancer. This, presumably, has

nothing to do with their consumption of cigarettes.

Among American citizens, men and women born in Ireland have high death rates from oral and esophageal cancers. Polish-born Americans have pronounced excess mortality for esophageal and gastric cancers, and Polish males rank first in lung cancer. Russian-born individuals show high death rates for stomach and (among women only) esophageal cancer. English-born Americans have above-average lung cancer risks.

Whereas none of this would deny a possible relationship with cigarette smoking, it does clearly indicate that the causes of cancer are complex in their origin, and that we are still far from any real understanding of the subject.

Perhaps more significant, in terms of the report under discussion, are its findings with respect to the incidence of lung cancer in other countries. Although the findings is that there is some correlation with cigarette smoking, the data might well justify the opposite interpretation.

Mortality Rate in Britain Is Double U.S.

For example, the report shows that Holland, Switzerland, Finland and Great Britain have a lower per capita consumption of cigarettes than the United States, but that all have higher mortality from lung cancer. Indeed, in the case of Great Britain, the mortality rate is more than double that of the United States. Similarly, Canada, Australia and Denmark all have about one half the United States per capita consumption of cigarettes, but show about the same mortality rate from lung cancer.

Finally, the report is not impressive in the evidence presented to supplement its statistical findings. One would think that the best evidence would be obtained by direct experimentation. In other words, to ascertain the effect of cigarette smoking, experimental animals would be subjected to such smoke for extended periods of time, to see if cancer were induced.

On this subject, the committee's report is succinct and to the point:

"Few attempts have been made to produce bronchogenic carcinoma in experimental animals with tobacco extracts, smoke or smoke condensates. With one possible exception, none has been successful.

"The production of bronchogenic carcinomas has not been reported by any investigator exposing experimental animals to tobacco smoke."

(Please turn page)

Contradictions in Health Report

(Continued from page 15)

In view of the fact that perhaps a billion dollars has been spent on cancer research in the last decade, this would seem to be an astonishing statement. Why have there been so "few attempts" at what would seem to be the most direct experimental approach to the subject?

A possible explanation for this strange lack of effort in what would seem to be the most logical, direct and persuasive form of research may be found in a statement attributed to Einstein. He is quoted as having once remarked that the only way to discover what scientists really believe is not by what they say, but by what they do.

Certainly any scientist who could offer experimental proof of the causal effect of cigarette smoking on any type of cancer would doubtless win a brace of Nobel prizes. Why, then, so little effort in this particular experimental field? The apparent answer: scientists do not believe they can establish any such relationship, and hence are not willing to waste their time in this type of effort.

This may or may not be true, but it is surprising that the advisory committee made no significant comment on the question, and offered no adequate explanation of why more work had not been done in this more relevant and highly important research area.

The reader who has had the hardihood to follow this discussion in full may now well inquire: what does it all mean? The only honest answer would seem to be that no one can say precisely what it all means, which perhaps is the most significant conclusion of all.

Surely this report raises a strong inference that cigarette smoking has an adverse influence on health; but at this stage, it is simply that: an inference, no more and no less, and this it must remain until it can be verified experimentally.

By the nature of public statements, it is to be expected that the major conclusions of the advisory committee would be heavily publicized and widely noted. By the same token, it is to be expected that little attention would be given to the oddities and paradoxes in the report, even though these are quite astonishing in many surprising ways, and yet must be accepted in full if we are to accept the remainder of the report.

It is doubtful that the public will be aware, for example, that one of the most distinguished medical statisticians in the nation, Dr. Joseph Berkson of the Mayo Clinic, has raised many of

the questions discussed here, as well as others, and expressed serious doubt about the statistical evidence on the effects of cigarette smoking, in various articles published by the American Statistical Association.

If, for example, we are willing to assume that non-smokers tend to differ physically and otherwise from smokers—in such ways, for example, as self-protective instinct; and we are further willing to assume certain biases among those who responded and failed to respond to these surveys; then the same type of survey findings could be obtained without any true correlation whatsoever between smoking and health.

In other words, these factors are sufficient to generate the appearance of correlation, although none in fact exist.

In many ways, this is a more plausible hypothesis and is more consistent with much of the evidence available than the one adopted in the advisory committee report. It at least avoids the collateral inference that cigarette smoking is adversely related to almost every known type of disease: a fantastic assumption which cannot be supported by the slightest shred of clinical or experimental evidence of any kind.

In any case, these are things that should be considered, to arrive at any proper perspective on the report issued by the advisory committee. It would be a tragedy if, on the basis of this report, the public were to decide that the issue had been resolved when, in point of fact, the report raises more questions than it answers.

Two immediate steps would seem to be in order. First, an official request to the American Statistical Association to appoint a committee of distinguished statisticians to review and evaluate all statistical evidence on the subject. This committee should also be asked to suggest the framework for all future studies, to insure cogency, significance, and reliability of results.

Second, increased emphasis by all interested agencies, supported by such funds as may be required, on experimental research of all kinds, and particularly on the effects of continuous exposure to tobacco smoke on the lungs of animals: The type of research where, in the words of the committee, there have been "few attempts" up to now. In this, as in all medical areas of knowledge, there can be no certainty until hypotheses have been verified by actual experimentation or clinical test.

In the history of science, many the-

N.Y. Republicans Oppose Cigarette Labelling

ALBANY, N.Y. — The New York State Legislature's Republican leaders are leaning toward a bill that would require merchants to post signs advising that state law bars them from selling cigarettes to persons under 18.

They are flatly opposed, however, to a more drastic measure, advocated by Senator Speno (R., East Meadow) to force cigarette manufacturers to label each package as "dangerous to health."

Sources close to Senate Majority Leader Mahoney of Buffalo and Assembly Speaker Carlino of Long Beach said they believed such drastic action as the labelling bill should be in the province of the Federal Government.—TOLES.

Law Asked to Prohibit Tobacco Sale to Youth

ALBANY, N.Y.—Assemblyman Hausbeck has filed a bill which would make persons under 18 years of age who purchase tobacco—as well as those who sell it to them—subject to misdemeanor penalties.

The proposed amendment also would make it mandatory for vendors to display on each cigarette machine a warning that it is a misdemeanor for a person under 18 to purchase cigarettes.—TOLES.

Canadian Legislator Calls For Cigarette Controls

VICTORIA, B.C. — The British Columbia legislature was asked to force tobacco manufacturers to advertise the dangers of cigarette smoking.

Alex Macdonald a Vancouver lawyer, introduced a bill calling for an act to regulate cigarette advertising.

If approved, it would be the first attempt in Canada to legislate anti-smoking controls. Mr. Macdonald wants cigarette packages labelled: "Warning. These cigarettes have nicotine and tar content and are dangerous to human health."

He wants written and spoken advertising to contain the same warning. Mr. Macdonald, a pipe smoker, could draw considerable support for the measure.—TOLES.

ories have been created and fully accepted for long periods, only to be abandoned, sometimes centuries later, on the basis of new and contradictory evidence. In this light, it may be appropriate to suggest that the final word has not yet been written by the Surgeon General's committee or otherwise, on the subject of smoking and health.

Drivers and Industrial Workers Frequent Lung Cancer Victims

By Max Karl Feiden*

North Rhineland-Westphalia scientists' conclusion that, instead of smoking, pollution of the air by industry and exhaust gases of automobile and Diesel engines is the chief evil leading to the spread of lung cancer, stands out in sharp contrast to virtually all recent reports on the subject.

These reports, published for the most part by British medical researchers, are familiar to our scientists between the Rhine and the Weser, whose investigations are now closing on entirely different conclusions. It was not the tobacco industry that started the North Rhineland-Westphalia scientists on cancer research; the Rhineland-Westphalia college of pathologists launched investigations of the causes of occurrence of lung cancer five years ago.

All the Way Back to 1908

"These projects involved the university Departments of Pathology at Bonn, Bochum, Essen, Dortmund, Bielefeld, Solingen, and of course here," we were told in an interview with Professor Reinhard Poche, Senior Physician in the Department of Pathology under Professor Meessens at the Düsseldorf Medical Academy. The 41-year-old pathologist, in association with Dr. Kneller, a co-worker of Professor Hamperl, head of the Department of Pathology at the University of Bonn, and with statistician Dr. Mittmann of the Bonn medical faculty, had conducted the investigations and evaluated the results.

In those five years, 1229 acute cases of lung cancer were analyzed from every conceivable aspect. Furthermore, to get a basis for comparison over a long period of time, more than 26,000 autopsy records on file with the pathology departments mentioned were reviewed. It proved most fortunate that the Düsseldorf department still has complete records back to the year 1908.

"With the help of this cross section, we have been able to eliminate accidental factors and to cover a mass of data comparing favorably in size with any similar project in the world," Professor Poche stated. The thoroughness with which the job was tackled is evi-

denced by the procedure the scientists used.

Age Peak Unchanged

All participating institutions received questionnaires calling for all details of each case to be studied—history, occupation, residence (industrial or rural district), war record, internment, refugee, smoker or non-smoker. . . . In the case of smokers, exact notes were taken of smoking habits and extent. In the case of deceased persons covered, this information was obtained from relatives. These minute interrogations were carried out by physicians, not laymen.

Analysis of this vast body of information first yielded important numerical data. In 0.4 per cent of all autopsies performed in Düsseldorf in the years 1908 to 1910, a bronchial carcinoma, or in other words lung cancer, was discovered. For men, the percentage was at that time 0.6 per cent. For women, it was zero.

A later Düsseldorf three-year control period (1956 to 1958) showed 8.9 per cent of all autopsies revealing lung cancer; proportion for men 12.7 per cent, for women 2.8 per cent. Similar results were obtained from the Bonn and Solingen figures.

More significant than these findings, which agree with those in all civilized countries, were other inferences from the data. Thus, the North Rhineland-Westphalia scientists found that lung cancer occurs with highest frequency at age 55 to 60, more rarely in later years.

This age peak was found to hold true alike for the year 1908 and for the later groups of years checked. Professor Poche says, "So lung cancer has increased. However, the age peak has remained the same from the year 1908 to this day. This result of our study is the more significant as external influences favorable to cancer have been intensifying sharply through these decades."

The 1200 acute cases covered were likewise broken down according to smokers and non-smokers. "In other words, if the hypothesis that the inhaling of tobacco smoke in using cigarettes is responsible for the increase

in lung cancer is true, one would expect to find differences," Dr. Poche continued. "One should have expected that bronchial carcinoma would occur earlier in life among heavy smokers than among light smokers and especially non-smokers."

Yet the scientists found that among those persons who had lung cancer, there was no correlation between their average age and how much they smoked. At the least, the non-smokers who contracted lung cancer should have been on the average older than the over-all age peak, and the heavy smokers younger. But this was not the case.

Stomach Cancer Declining

There were other surprises in store. The total incidents of different kinds of cancer in men and women shows no movement over the period covered by the study. The percentage has remained about the same in both sexes. What has changed is the kinds of cancer to which the two sexes are most liable.

In other words, there has been a shift of equilibrium. Stomach cancer, which was still leading among men in 1900, has yielded its "place" to lung cancer. Five men contract bronchial carcinoma to one woman. "But neither do we know why stomach cancer has declined in men, nor are we yet able to say for what reasons lung cancer has increased in the male sex," said Dr. Poche.

In their years of endeavor, however, the scientists have made progress towards answering many questions. They have spotted a trend in the tisular microstructure of lung cancer. Of the three types—glandular (adenocarcinoma), undifferentiated, and cover-cell (plate epithelium carcinoma)—the last mentioned especially has been on the increase during recent decades.

Conclusions Regarding Various Occupations

After this discovery, obviously the next step to take was to compute the proportions of the three types among cancers of the lung. It turned out that as lung cancer became more massively

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*Reprinted from "Ruhr-Nachrichten," West German newspaper, January 11, 1964.

Industrial Cancer Victims

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represented in the general research data going back to the year 1908, the more frequent the cover cell type became among the lung cases.

"The increase in lung cancer, then, is linked to a rise in cover cell cancer frequency," Professor Poche stated, portraying the ensuing stages in the five-year series of studies: "The thing to do at that point was to correlate the date on lung cancers with the individual histories." The data was accordingly coded in various ways—by age—by occupational groups—by residential areas—and by smoking habits.

First result: the 55-60 age peak again remained constant! But some very interesting conclusions were to be drawn from comparisons of the various occupational groups. For it proved that lung cancer most frequently attacks three groups of occupations.

According to the team findings, cover-cell cancer has its highest incidence among persons classified by the scientists as "engaged in transit occupations," whether motor vehicle operators "constantly breathing the exhaust of cars ahead through the ventilators," salesmen continually on the road, or traffic policemen. Railroad workers fall in the same group.

They are followed by the group of industrial workers and craft workers in industrial-type trades, such as locksmiths and welders—a group of people, that is, who work in shops exposed to dust and smoke. The third group consists of workers continually out-of-doors and so specially exposed to the elements—construction workers, farmers and gardening trades, often having much to do with Diesel engines or equipment as well.

The proportion is under 50 per cent within the groups of "old-line handcraftsmen" such as bakers, butchers, upholsterers, decorators etc. Least of all, however, the researchers found cover-cell cancer among individuals working in offices (government and white collar workers) or in the home.

Minor Factor

"Precisely in those occupational groups that are least exposed to air pollution by industrial waste or automobile exhaust, but where experience indicates there is the most smoking, we found the lowest percentage of cover-cell cancer," Professor Poche summarized this result.

"So in the end we had three facts that argue against the casual significance of cigarette smoking in the increase of lung cancer:

- "The average age of persons having bronchial carcinoma is the same for non-smokers, light smokers, or heavy smokers.

- "There is nothing to point to a connection between cigarette smoking and the increase in cover-cell cancer.

- "The occupation group in which lung cancers are of least occurrence is the one with the heaviest smoking."

The professor went on:

"I have no connection with the cigarette industry, I am a non-smoker myself, and I do know that smoking tends to encourage other diseases, for example of the heart and circulatory organs, and thereby shortens life. But on the basis of our years of investigation I must assert that smoking, so far as the spread of lung cancer is con-

cerned, is by no means so important as is supposed. Certainly, tobacco contains carcinogenic substances. But these minute amounts are a minor factor, considering the abundance of carcinogenic substances in the contaminated air."

Need for Action

Professor Dr. Reinhard Poche, under whose direction the pathologists' five-year investigations were carried on, closed our conversation with a warning. "Those who claim that cigarette smoking alone is causing lung cancer are acting irresponsibly. For if we were to content ourselves with accepting cigarette smoking as the sole cause (which by the way is untrue), we might be led to neglect the other, greater causes—and there are many of them—and not seek them out to eliminate them. Our researchers, too, were after all intended to intervene in an alarming development and help to arrest it."

Cigarette Brand Rankings

(Continued from page 13)

questions may be that there is probably constitutional difference between smokers and non-smokers. Perhaps the non-smoker is the one who also jumps into bed at the first sign of a cold, always wears rubbers on rainy days, etc. Even this is admitted by the Surgeon General's report, which indicates, "Part may be due to constitutional and genetic differences between cigarette smokers and non-smokers. . . . But, it is not unreasonable to speculate that the kind of men who become regular cigarette smokers, are to a moderate degree, less inherently able to survive to a ripe old age than non-smokers."

"The recent report by R. Poche of the Dusseldorf Medical Academy about specific lung-cancer cases came to the following conclusions, as quoted in the German press: (1) The average age of persons having bronchial cancer is the same for non-smokers, light smokers, or heavy smokers; (2) there is nothing to point to a connection between cigarette smoking and the increase in cover-cell cancer (which is the kind of cancer he frequently sees); (3) the occupational group in which lung cancers are of least occurrence is the one with the heaviest smoking.

"One final argument against the report relates to the cancer-causing agents. The report absolves nicotine from the blame: 'Chronic toxicity of nicotine in quantities absorbed from smoking and other methods of tobacco use is very low and probably does not represent a significant health problem.' Then what is this agent and why hasn't it been found, when over \$1-billion has been poured into cancer research over

the last decade? As the report says, efforts to produce lung cancer experimentally in animals have failed. It is difficult for this writer to believe that, while our scientists are on the verge of discovering the secrets of life itself, if cigarettes were so at fault in causing cancer, the agent or agents could not be found. And if there is a causative agent in smoke itself, why would its effects not be shown in the many animal experiments that have been done?

"There is no doubt this report has had a traumatic effect on the smoking public. It is our opinion that as a result, the future of the industry will follow that of the English. As may be remembered, when the Royal College of Physicians issued its report in early 1962, smoking dropped 12 per cent initially.

"For the year 1962, the British smoked 3.9 per cent less cigarettes. However, estimates indicate that in 1963 their consumption will be about even with that of 1961. But in the latter part of 1963, unit volume was hitting new highs on an annual basis.

"It is also interesting to note that per capita consumption in the United States had been trending downward from 1952 until the publication of reports tying cigarettes to lung cancer in 1954. This trend appeared to have reversed as the American public suddenly became cigarette-conscious, with per capita consumption increasing every year since 1954, with the sole exception of 1962. On this basis, it is our guess that unit volume may be off as much as ten-15 per cent in the first quarter of 1964."

N. C. Candidates Pledge Aid in Tobacco Crisis

RALEIGH, N.C.—The tobacco crisis continues to figure in North Carolina's campaign for governor this year. Candidates for the office, to be nominated in the statewide primary of May 30, are pledging their efforts and energies toward alleviating the situation as far as possible if they should be the state's next chief executive.

Judge Dan K. Moore described tobacco as the lifeblood of North Carolina's economy and said the state could become a "blighted area" like West Virginia unless steps are taken to meet the emergency. He called for support of the state's congressional delegation to resist "impetuous action on the part of the federal government which would damage our tobacco industry."

Judge Moore said "the intensity and gravity of the present situation is unequalled in the history of the tobacco industry. Never before has the need for positive leadership in a crisis been more obvious." He promised that "if privileged to serve this state as its next governor, I will give top priority to the problems of the North Carolina tobacco farmer and tobacco manufacturer."

He urged "greatly expanded research on tobacco, with special attention to the health aspect of the problem." He said he would support such a program at the present time and "insist upon such a program if elected governor."—HAD.

New Coker Variety May Lead the Field

DANVILLE, VA. — Another Coker tobacco variety may be on its way to domination of the field.

County agents said recently Coker 319, a variety introduced just last year, will predominate as the variety planted in their counties this year.

One agent, H. S. (Buddy) Reynolds of Halifax said he is "afraid we're putting a lot of our eggs in one basket."

However, neither he nor Ralph Aldridge of Caswell County thinks Coker 319 will attain the popularity of its immediate predecessor, Coker 316.

Two years ago, Coker 316 was used by so many farmers it was blamed for lagging leaf sales. Buying companies claimed they couldn't find enough va-

riety on warehouse floors.

Coker Seed Co. then withdrew 316 from the market and introduced 319.

One reason that 319 is unlikely to catch on like 316 is it is rated only moderately resistant to black shank, flue-cured tobacco's biggest disease nemesis.

Growers with black shank infestation in their land will be seeking a more highly resistant variety such as Coker 187-Hicks, N. C. 95 and McNair 20.

Mr. Aldridge said he expects most Caswell farmers will be planting 319 this year.—GERARD TETLEY.

Felton Chemical Co.

Promotes Ira B. Kapp

The Felton Chemical Company, Inc. New York supplier of tobacco flavorings announce the appointment of Ira B. Kapp as vice-president and general manager. Mr. Kapp was formerly technical director and has been with the firm since 1949.

Dr. Joseph Felton, president and chairman of the board, also announced the election of Mr. Kapp and J. L. Weisman, executive vice-president to the board of directors.

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