

Victorian Cancer News

Registered in Australia for transmission by post as a periodical.

A Quarterly News Letter issued by the Public Education
Sub-Committee of the Anti-Cancer Council of Victoria

No. 17 • JULY-SEPTEMBER, 1963

THREE KEYS TO CANCER PROGRESS RESEARCH — EDUCATION — WELFARE

A SPECIAL REVIEW

In a relatively small corner of the Walter and Eliza Hall Institute for Medical Research, adjoining the Royal Melbourne Hospital, a handful of people led by cancer research scientist Dr. Donald Metcalf tend — with almost loving care — a colony of 10,000 mice.

A short distance from the Institute, in the Pathology Department of the University of Melbourne, other teams of research workers study in minute detail the lives of large colonies of rats, mice, guinea pigs and rabbits.

To the layman, these somewhat remote investigations probably seem tortuously slow and quite unconnected with the painful daily realities of cancer in the community. But today, these precious rodents are emerging as key factors in the ceaseless quest to shed more light on some of the baffling problems of cancer.

The studies of these two groups, together with unique experimental research being carried out by the University's Department of Organic Chemistry into possible domestic cancer hazards, are but three of the more than thirty important research projects currently supported by the Anti-Cancer Council of Victoria.

To finance this scientific research, together with intensive state-wide programmes of community education and patient welfare, the Council has spent one million pounds during the last five years. Progress made in these three important fields is reviewed in the following article.

A MOUSE-EYE VIEW OF LEUKAEMIA

In common with all research departments of the Walter and Eliza Hall Institute headed by Sir Macfarlane Burnet, the section led by Dr. Donald Metcalf is paying particular attention to the function of the thymus gland and its bearing on bodily resistance to disease.

According to Dr. Metcalf, a few research groups carried out studies of the thymus gland early this century, but then clinical interest switched to other areas of the human body, and only in recent years has there been a revival of research attention on the thymus — a tiny gland that allows the body to produce the anti-bodies which offer resistance to disease invasion in healthy animals. In this specialised field, he says, the Institute is now a world research leader.

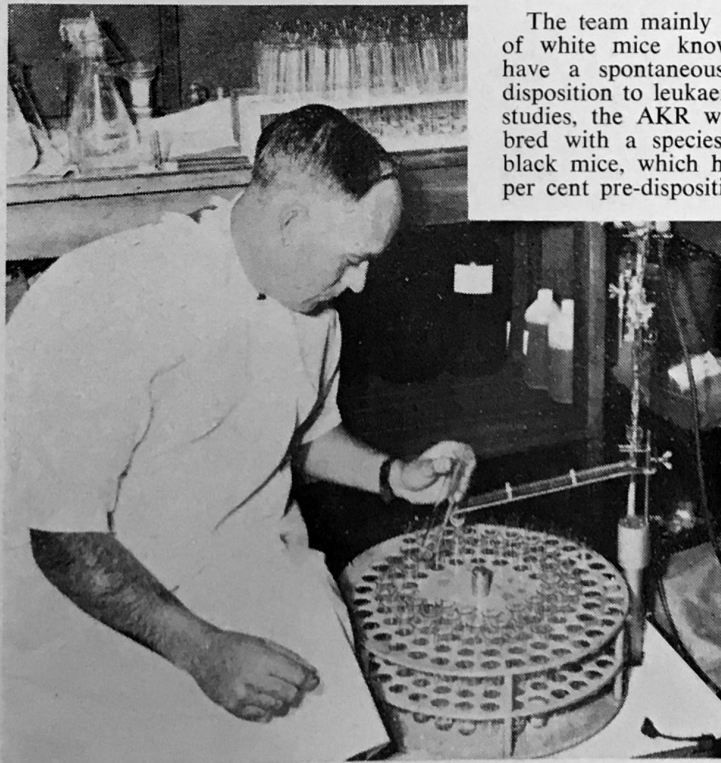
In Dr. Metcalf's case the specific interest lies in the relationship of the thymus to the development of leukaemia.

The use of mice in his studies followed the discovery that removal of the mouse's thymus gland served to protect it against developing lymphoid leukaemia — a form which accounts for about half the present incidence of the disease in human beings.

The section now maintains a constant colony of about 10,000 mice, using about 5,000 a year. The cost per mouse is about 10/- a year, which covers feeding, bedding, accommodation, etcetera.

The mice are bred by mating brother with sister, which ensures a fully inbred strain. Full statistics on each mouse are maintained on a large pedigree chart which permits easy identification of all the animals.

The team mainly uses a special strain of white mice known as AKR, which have a spontaneous 95 per cent pre-disposition to leukaemia. In other special studies, the AKR white mice are cross-bred with a species known as C57BL, black mice, which have a less than one per cent pre-disposition to leukaemia.



The Anti-Cancer Council's W. J. Kilpatrick Cancer Research Fellow, Dr. Peter Hughes, studies experimental samples obtained by means of an automatic fraction collector.

Because of the fractional life cycle of the mouse compared with that of man, the experiments undertaken by Dr. Metcalf and his team on 5,000 mice each year enable the collection of data that would take 20 years to gather in human analysis.

Their research involves the removal of the thymus gland of day-old mice, and the subsequent implanting of these glands in older mice which then become the subject of special leukaemia studies.

It is now known that mouse leukaemia is triggered off by a non-infectious virus that is transferred from parent to offspring. However, the virus alone does not produce leukaemia — it also requires the presence of certain conditioning factors in the mouse, chief among which appears to be an influence exerted by the thymus on lymphocytes (i.e., white blood cells made in lymphoid tissue) to ultimately produce the disease.

In essence, the Institute's investigations are aimed at determining why thymus gland cells divide so quickly (a vital factor in the production of leukaemia), and in tracing and understanding their growth patterns.

Similar studies to those being carried out by Dr. Metcalf's team are concurrently taking place at Canada's National Cancer Institute, Toronto, and at Britain's Chester Beatty Cancer Research Institute in London.

In common with all cancer research work, the mouse-leukaemia project is a protracted, long-term, and unspectacular study.

However, Dr. Metcalf and his colleagues are confident that the time and money already devoted to the present project have brought scientists a good deal closer to understanding the leukaemia riddle.

PATHOLOGY'S EIGHT-PRONGED RESEARCH

Headed by Professor E. S. J. King, chairman of the Anti-Cancer Council's Executive Committee, eight research teams supported by the Council are now working at Melbourne University's Department of Pathology investigating various aspects of cancer causation and development.

Some indication of the considerable cost involved in carrying out many of the department's investigations can be gauged by the purchase outlay for the animal population required for this research. The department maintains a colony of between 1,300 and 1,500 rats, mice, guinea pigs and rabbits a year, with rats costing 15/- each, and rabbits between £4 and £5 each.

Upkeep of the animal colony is important. They are provided with good food and maintained in cages designed to provide a constant, comfortable temperature. In short, the animals are cared for at an almost human standard.

Leading one of the department's research groups is the Council's W. J. Kilpatrick Cancer Research Fellow, Dr.

Peter Hughes. Assisted by Miss Margaret Cunning, Dr. Hughes is examining basic aspects of cancer causation, and in particular the nature of the change occurring in cells that presumably gives rise to cancer.

His studies involve experiments with known cancer-producing chemical compounds (carcinogens) on rats. There are several hundred of these chemical compounds, and it is comparatively easy to make or obtain new compounds and to test them for their cancer-causing activity.

The aim of this analysis is to determine how these compounds act on the cell to produce a cancer. This involves many very complex problems with great technical difficulties.

All body cells, whether cancerous or otherwise, contain hereditary material known as genes. These are carried in the cells' nucleic acid, which acts as a template on which specific proteins are made.

But since it is through the proteins (made by the nucleic acid) and not the nucleic acid itself, that the gene exerts its effects on the various biochemical processes in the body, and it is with the proteins that most carcinogens combine, scientists are concluding that some feedback mechanism exists between protein and nucleic acid, which in turn influences the genes to produce an excessive rate of cell division.

Those engaged in Dr. Hughes' field of research hope that by the use of radioactive cancer-producing substances, and of specific anti-bodies to the particular proteins involved in reactions with these chemicals, a better understanding of the protein function will emerge.

Other important Pathology Department research personnel and activities are:

- **Dr. N. Xeros and Miss Margaret Goodman**, who are studying the factors which control cell growth and multiplication.
- **Associate-Professor G. S. Christie and Mr. R. N. Le Page**, whose research includes a study of the chemical changes that occur in the cells, particularly in those of the liver, following administration of known liver carcinogens.
- **Dr. B. Stratford**, who is engaged in a study of the changes that occur in the very young, and of the malformations that occur in developing people.
- **Dr. A. G. Jabara**, who is making a study of naturally occurring, and experimentally-produced tumours in dogs.
- **Dr. D. W. Menzies**, whose field of research is that of microscopic histology (i.e., a study of the structure of cells), and includes separation of the various cell compounds.
- **Dr. P. S. Bhathal**, who is investigating the factors influencing liver bile ducts. This study involves electron-microscopy analysis in liver disease.

- **Dr. S. Weiner**, who is making electron-microscopic studies of normal and neoplastic or cancerous cells.

These latter investigations require the use of an electron microscope which allows fantastic magnification of the cells. Whereas the normal microscope offers about 2,000 times magnification, this instrument can magnify up to 100,000 times, enabling great resolution and the "pinpointing" of physical differences in the ultra-fine structure of cells — both normal and cancerous.

A BURNING QUESTION

Unusual research experiments being carried out by scientists of Melbourne University's Organic Chemistry Department are shedding light on possible health risks in the home related to cooking and heating fuels.

Led by Professor W. E. Davies and Mr. J. R. Wilmshurst, the team has been examining the problems created when heating fuels are burned in certain conditions, and also when certain foods are overheated. In the former field the group recently has concentrated its efforts on a study of indoor air pollution from kerosene soot.

It is generally acknowledged that the outdoor atmosphere of Australian cities is relatively smoke-free compared with that of many industrial British and North American cities where the main fuel is black coal.

In Australia, kerosene is widely used for domestic heating and to a lesser extent, cooking, and kerosene appliances are seldom equipped with a flue, so that all gases from the burning fuel pass into the room.

Though kerosene is a very much "cleaner" fuel than most coals, and is not normally smoky, small amounts of soot may be formed when the stove or heater is not used under ideal conditions — for example, in a draught.

So far as is known kerosene soot has not previously been analysed, and the Melbourne research team has successfully isolated from it thirteen colourless large aromatic hydrocarbons, including benzo(a) pyrene. The carcinogenic action of coal tar on animal skin is believed to be partly due to this compound, from which it was first obtained.

Since the kerosene room heater is used mostly in cold weather when room ventilation is usually at a minimum, the Melbourne researchers suspect the indoor concentration of soot in these conditions may temporarily approach that in the street atmospheres of large U.K. and U.S. cities, where smoke-removal campaigns are now being vigorously enforced.

The team points out, however, that any possible risk from kerosene stoves and heaters is under the control of the individual user. An almost complete combustion of fuel is attained in the best kerosene heaters used under good conditions.

Meanwhile, the department's experiments with overheated foods are producing interesting results.

The "black" formed when starch is heated to toasting temperatures is also found to contain very minute quantities of benzo(a) pyrene. This colourless substance, which is used for the production of animal tumours in institutes studying cancers, has been shown overseas to be present in the "black" of burnt toast, as well as in the black decomposition products of a variety of other organic substances completely different chemically from kerosene.

It is believed that at these high temperatures (near red heat) the compounds break down to give fragments which can then combine to form benzo(a) pyrene and similar hydrocarbons of a type not present in the original material.

The Melbourne studies, while showing that kerosene soot and the black products formed from starchy materials contain minute amounts of substances capable of causing cancer in experimental animals, have not produced any evidence that they constitute a hazard to human beings.

The problem presented by this research of separating the many aromatic hydrocarbons from each other and of identifying them has been solved by the use of special instruments.

The identification of hydrocarbons was accomplished by use of a Unicam Recording Ultra-Violet Spectrophotometer. The more difficult task of separating the hydrocarbons was achieved by the use of an F and M Gas Chromatograph, subsequently improved in the department.

These two instruments, with spare parts, together cost more than £5,000, provided, like all the other expenses of the investigation, by the Anti-Cancer Council.

CANCER EDUCATION WILL SAVE LIVES

In the past five years the Council's public education programme has employed all the recognised media for mass-communication and publicity — newspapers and periodicals, radio, television, motion pictures, lectures, brochures, leaflets, posters, exhibitions and displays — to reach and influence all sections of the Victorian community.

Broadly, the aim of the campaign has been to alert people to the warning signs of cancer and particularly to the vital need for early detection and treatment. If more cancers can be detected in the early stages it is confidently believed that more lives will be saved every year.

An indication of the high degree of public interest is shown by the fact that since September, 1958, more than 700 lectures on cancer have been given to audiences in all parts of Victoria, with a total attendance of more than 40,000 persons. Speakers have included cancer specialists and research workers, general practitioners, medical officers of the State Department of Health, scientific staff of the Cancer Institute Board, and officers of the Anti-Cancer Council.

This year the Council has begun developing specialised education facilities for commerce and industry, and has intensified its programme to advise children in secondary and technical schools of the health risks associated with cigarette smoking.

The coverage and response achieved in the schools' lecture programme has been impressive. In the twelve months period from July, 1962, to June, 1963, sixty Victorian schools were visited and about 18,000 pupils addressed on the subject of smoking and lung cancer.

A keen interest has been shown in the lectures and many students have asked lively, thought-provoking questions, while others have volunteered frank comments about early-smoking practices.

While it is impossible to gauge the long-term effects on smoking habits resulting from these lectures, there can be little doubt that in many cases they do achieve an immediate positive impact.

COMPASSION IS KEYNOTE

At first glance the role of the Council's patient welfare programme seems straightforward and clearly-defined — the relief of financial and social distress among cancer sufferers.

But a few minutes spent in discussion with the Council's Social Worker, Mrs. Marjorie Esson, soon reveals that the organisation is much more than an impersonal donor of financial relief.

It is true that the Council has advanced substantial sums — more than £60,000 — to financially-distressed cancer patients and their families in the past five years, but much of its aid cannot be measured in economic terms.

In this respect, Mrs. Esson and the 40-odd medical social workers stationed in Victoria's public hospitals are assisting patients and their relatives with a variety of problems arising when there is illness in a family.

Funds for patient welfare are made available in three ways:

- Through the Council's own social work service.
- Through medical social workers in public hospitals.
- Through Country Cancer Committees.

Where no public hospital bed is available grants may be made to cover private hospital fees for patients requiring terminal care. Other assistance is given where necessary, including payments for special surgical appliances, living expenses pending receipt of Government Social Service benefits, and arrangements for transport, accommodation, and any necessary domestic help.

The accent in the Council's social welfare activity is on mobilising all existing community and social welfare services, and supplementing these whenever they prove inadequate or insufficient.

The Council also subsidises the Melbourne District Nursing Service, and similar services in Ballarat and Geelong. According to Mrs. Esson this aid is particularly important, for it enables many terminal patients to be kept at home during the final stages of their illness.

Another step taken to assist cancer patients came with a £50,000 grant for the provision of additional beds for terminal care at the Caritas Christi Hospice in Kew. (See the article "A Special Bond" on page 6.)

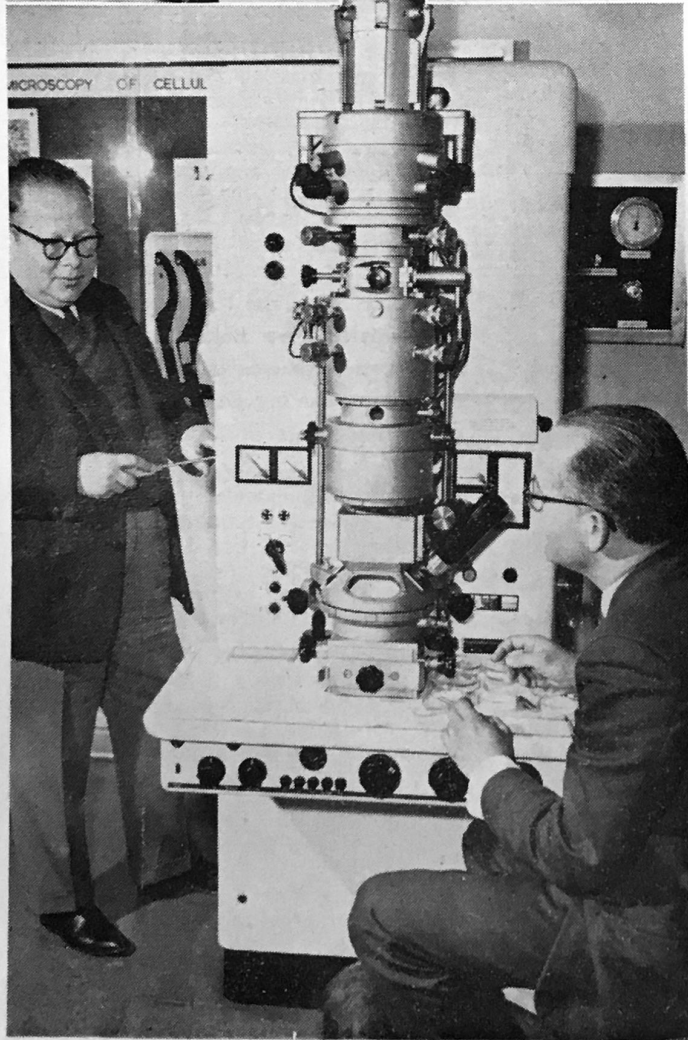
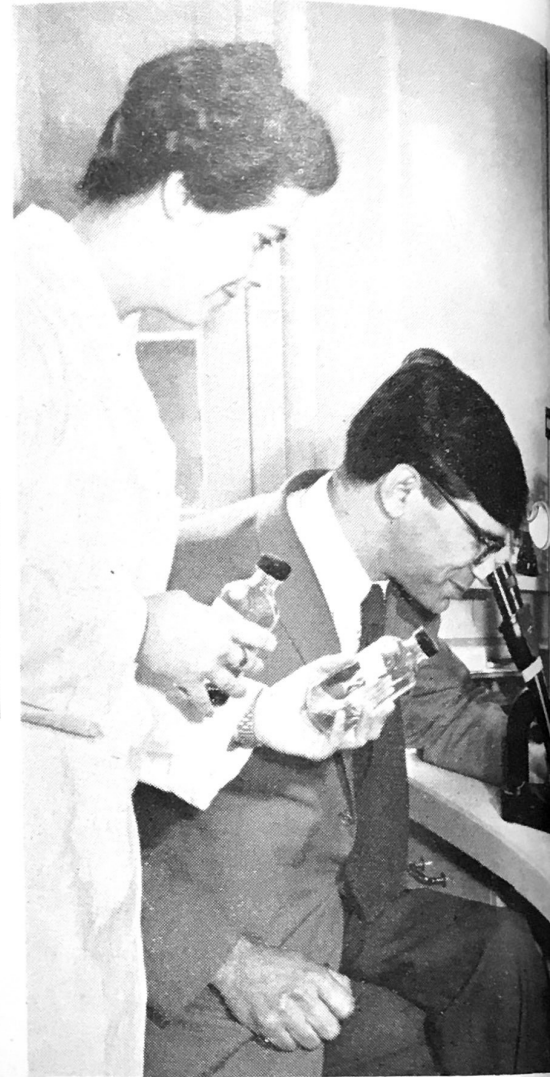
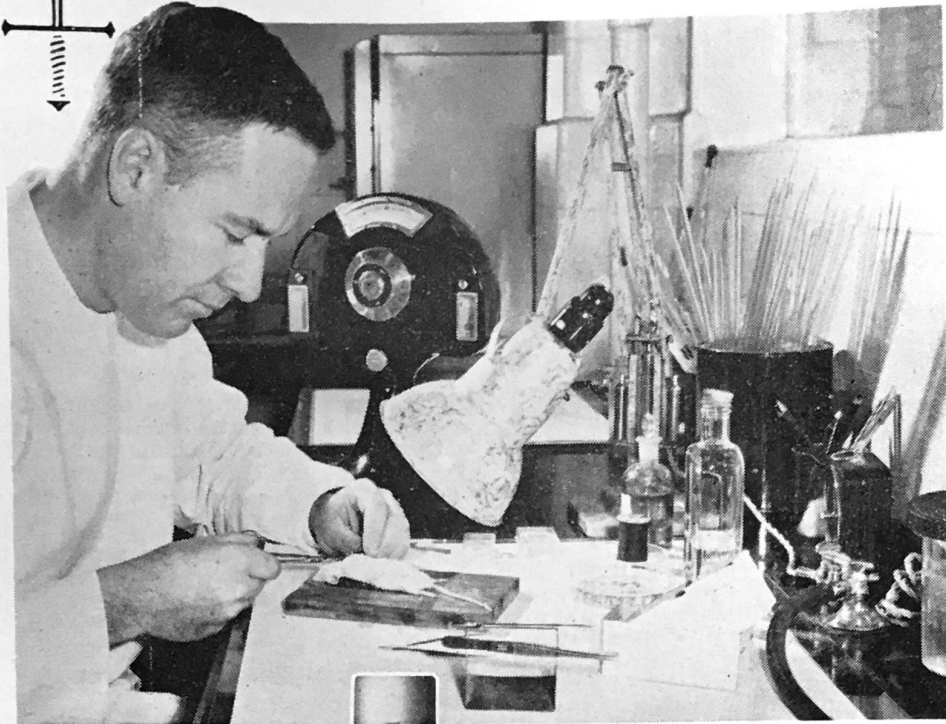
Country cancer sufferers are assisted through the voluntary Country Committees set up in all parts of Victoria following the 1958 appeal.

To the more than one thousand patients who have received assistance from the Council in the past five years, the act meant far more than mere financial aid. It was accompanied by the much greater gift of compassion.



More than 800 students of Swinburne Technical College listen attentively to a talk on the health risks associated with cigarette smoking.

The Anti-Cancer Council of Victoria has spent almost £600,000 on research since 1958, and is at present supporting more than thirty important research projects covering many different aspects of cancer causation and development. The photographs on these pages illustrate some of the promising avenues of research that are being pursued by Victorian scientists in their dedicated campaign against the disease.



▲ The Anti-Cancer Council's Carden Research Fellow, Dr. Donald Metcalf, implants the thymus gland of one mouse into another — an operation in the course of special studies being carried out at the Walter and Eliza Hall Institute on the development of leukaemia in mice.

◀ Mr. N. S. Hohlov (left) and Dr. S. Weiner, with the Pathology Department's electron microscope, which will magnify cells up to 100,000 times.



LATEST CANCER RESEARCH IN PICTURES



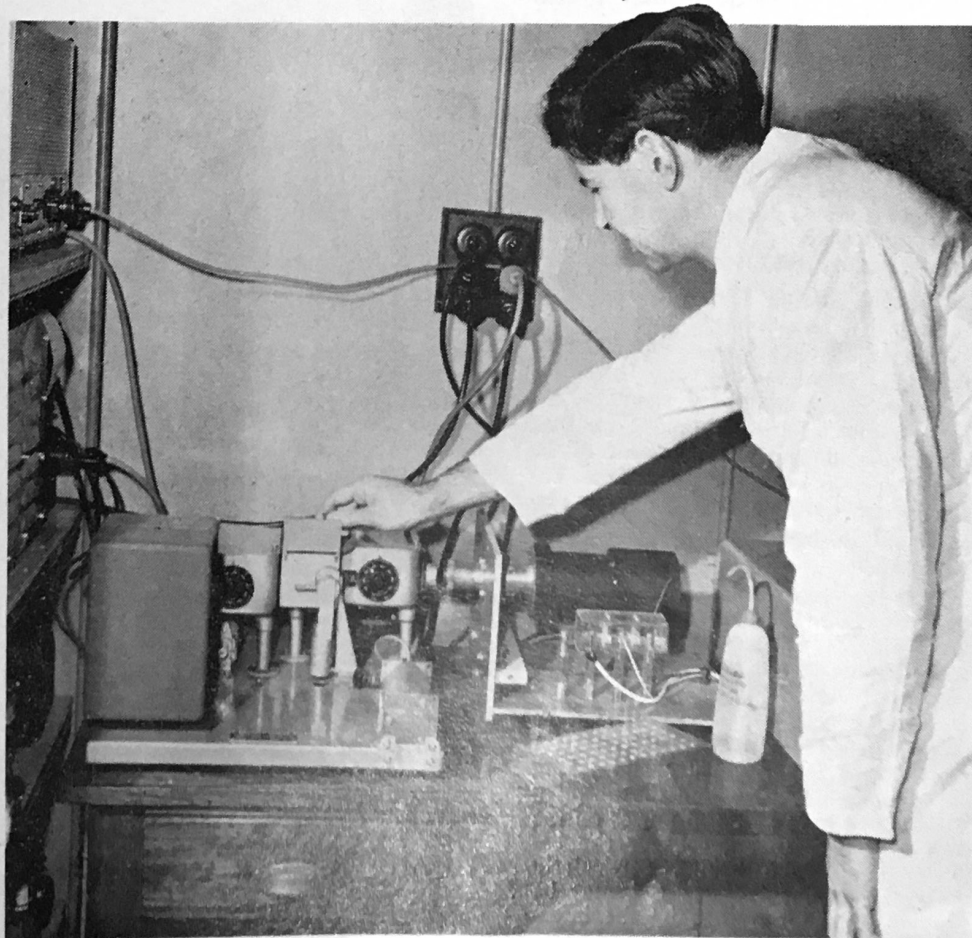
▲ Dr. N. Xeros and Miss Margaret Goodman, senior technical officer with the Department of Pathology, study the growth of tissue culture under a microscope. The team is studying factors controlling cell growth and multiplication.

◀ Miss Margaret Cuning, assisting Dr. P. Hughes, operates a spectrophotometer which focusses ultra-violet light of a set wavelength through a solution of rat protein, and measures the amount of ultra-violet light transmitted in relation to the amount of concentrated protein in the test tubes.



▲ Mr. J. R. Wilmshurst, a senior research officer in the Department of Organic Chemistry, injects a kerosene soot fraction into the Gas Chromatograph. This instrument makes possible the separation of the various hydrocarbons present in the sample.

◀ Mr. R. Le Page, of the Pathology Department, University of Melbourne, operates a spectrofluorimeter to analyse liver cells.



"A SPECIAL BOND"

In former years great difficulty was experienced in providing suitable care for those cancer patients who failed to respond to treatment. With the help of funds provided in the 1958 Cancer Appeal, the Anti-Cancer Council has solved this problem. Financial assistance from the Council now enables such patients to have nursing care either in their homes, or in private hospitals, or at the Caritas Christi Hospice at Kew. In recognition of a building grant of £50,000 to the Hospice, conducted by the Sisters of Charity, has permanently reserved 25 beds for cancer patients. Patients of all religions are admitted, without regard to their ability to pay. As **Carlotta Kellaway** explains in the following article, they are assured of expert and devoted medical and nursing care in the final stages of their illness.

For patients and staff alike the nightly round by the Mother Rectress is a very special time at the Caritas Christi Hospice conducted by the Sisters of Charity at Kew.

This is the time of day, says the Mother Rectress, Mother M. Leo Jones, when she feels most strongly the "special bond" which links her with her patients. After years of nursing she knows how the seriously-ill patient comes to look forward to this final "tucking-in" for the night and to the comforting words which are the daily signs of the real interest and affection felt by the Sisters and nurses for each and every individual under their care.

The bond of trust and confidence between patient and staff has created an atmosphere of peace and serenity within the Hospice which is immediately felt by visitors. The secret of this happy relationship, says Mother Leo, is winning the patient's confidence at the first meeting. He must be made to feel comfortable and relaxed, to feel that he is coming amongst friends, in short to feel thoroughly at home.

The natural anxiety of relatives, too, must be met with the assurance that their dear ones will be among people who are interested in them as individuals; that everything that it is humanly possible to do for them will be done.

A MODEL HOSPITAL

Visitors touring the new wing soon realise that this modern building is a model of what a hospital should be. The spacious wards, attractively furnished and decorated, and long sunny verandahs overlook a panorama of gardens, parklands, and the winding course of the River Yarra, while ultra-modern kitchens and service rooms are splendidly equipped to handle patients' individual requirements.

Both the accommodation provided and the specialised nursing care available make Caritas Christi outstanding in its consideration of the special needs of the seriously ill patient.

Although Mother Leo takes care to make provision for the patients' need for privacy and quiet, laughter and joking are frequent sounds within the hospital. She likes to have youthful nurses on the staff for their tonic effect, for she believes that human beings, particularly the very sick and the very old, may be invigorated and refreshed by the infectious gaiety of the young.

Like members of a large but closely-knit family patients and staff share with one another the happy, quiet or sad moments of each day. The nurses like to make a special fuss of their aged patients; the old ladies in particular enjoy these attentions, and often ask for bows and ribbons to match their eyes, their gowns or the colour scheme of their room.

Other homely touches include the reading of letters and books, the playing of music, and pleasant hours spent together chatting or simply resting in the beautiful Hospice gardens.



A patient at Caritas Christi shares a quiet moment reading with a Sister of Charity.

SHARING PROBLEMS

The emotional needs of her patients are always uppermost in Mother Leo's mind. Patients, particularly those who are very ill, she says, often want to tell someone their life story. They need someone to talk to, to tell the things that are worrying them, to get their problems straightened out.

The younger patients often worry about their children and need to discuss the problems related to their domestic situation with someone who not only can offer sensible practical advice but who **cares**. When they have talked about these things to someone in whom they have confidence, they feel relief. They no longer feel helpless and alone.

Often, however, she says, the relatives are more worried than the patient. Mother Leo is always ready to talk to them too, to comfort them and as far as possible to set their minds at rest.

When she thinks of the Hospice growing any larger, although its extension is a cherished dream of hers, Mother Leo sighs a little.

She scarcely has time at the moment to give what she feels is enough of herself to patients, relatives and friends. If there were any more . . . ?

"AN INNER PEACE"

The controversial question, on what to tell a terminal patient about his condition, is answered very simply by Mother Leo: the truth.

"When they commence to wonder, to ask," she says, "that's when I come to prepare them. I assure them that everything humanly possible is being done for them. How different the atmosphere is once they can accept that! Once they ask questions," she says firmly, "It's not right to withhold the truth from them. I have never known a person to respond to the truth with fear yet. "When they know — it seems to give them an inner peace."

"The very sick have 'a special grace,'" she concludes, "and all at the Hospice consider that to look after these patients is both a privilege and an inspiration!"

CIGARETTE SMOKING AND CANCER

DISSENTING OPINION

Lung cancer will kill approximately 2,000 Australians this year, and is increasing at the rate of 8 per cent per year. All major medical associations in Victoria have accepted the evidence of some thirty scientific studies, made in ten different countries, that cigarette smoking is the major cause of this disease. Spokesmen for the tobacco industry argue that the evidence does not prove a cause-and-effect relationship between smoking and cancer. Their major arguments, and comments concerning these, summarised here, are reprinted from the Spring 1963 issue of "CANCER NEWS", a publication of the American Cancer Society.

1. Since the cause of cancer is unknown, how can it be said that cigarette smoking causes cancer of the lung?

By the accumulated evidence. Many measures for the prevention of disease have been accepted and employed long before the cause of the disease was known: vaccination for smallpox, water purification for the prevention of cholera and typhoid fever, screening against mosquitoes to prevent malaria and yellow fever, the use of citrus juices to prevent scurvy, etc. The role of excessive exposure to sunlight in the development of cancer of the skin is not disputed. Nor is there doubt concerning the value of insulin for treatment of diabetes, even though the cause of diabetes is still unknown.

2. The evidence is only statistical and therefore inconclusive.

This argument is meaningless to anyone familiar with the scientific method, because many conclusions in scientific work are based upon the analysis of data; that is, statistics. Causal relationships in biological phenomena must of necessity be judged on the basis of high correlations and relevant information supporting the interpretation of such correlations. Two recent examples of conclusions based entirely upon human statistical observations are:

"VICTORIAN CANCER NEWS" is published quarterly by the Anti-Cancer Council of Victoria, Public Education Committee. Editor: A. J. Brown. Printed by McLaren & Co. Pty. Ltd., Fitzroy. It will be sent free of charge to interested persons and organisations, who should apply to the Public Education Officer, Anti-Cancer Council of Victoria, 412 Albert Street, East Melbourne.

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(a) The relation of the drug Thalidomide, taken by women during pregnancy, to the birth of deformed babies; and

(b) the risk of developing paralysis — estimated as less than one in 1,000,000 — from the use of Type III oral poliomyelitis vaccine.

3. There may be a genetic factor which causes a person to smoke and also causes him to develop lung cancer.

This is without supporting evidence and inconsistent with established facts. Such hypothesis cannot account for the increase in lung cancer in recent years; for the parallelism between the increase in lung cancer and the increase in cigarette smoking; for the much higher death rates among cigarette smokers than among cigar or pipe smokers; for the reduction in lung cancer deaths among cigarette smokers who have discontinued the habit.

4. The statistical evidence is not supported by animal experimentation.

It is based upon extensive tests with the best possible animal for such an experiment, man himself. The fact that lung cancer has not been produced in animals may be because investigators have never been able to train animals to smoke cigarettes, particularly over long periods of time. However, it would not disprove the conclusion, for it is well known that animals react differently to infectious agents, to toxins and to drugs. For example, carbon tetrachloride produces many tumours in mice but none in rats.

5. It is unreasonable to believe that cigarette smoking could cause lung cancer, cancer of the bladder, coronary thrombosis, chronic bronchitis, emphysema, etc.

Every physician knows that few diseases or poisons affect only one system in the body. Typhoid fever and syphilis affect practically all body organs and systems. Diphtheria toxin causes both paralysis and serious damage to heart muscles. Practically all chemical poisons have multiple effects on the body; e.g.,

phenol poisoning causes disturbances of the digestive tract, nervous disorders, mental aberrations and eruptions of the skin, with death resulting from damage to the liver and kidneys. Cigarette smoke contains several different agents, each with its own possible ill effects.

6. Not all cigarette smokers or even all heavy cigarette smokers develop lung cancer.

To a physician this fact is not surprising because individual differences in susceptibility and resistance to disease are much more common than is uniformity in this regard. Less than two per cent of persons infected with poliomyelitis virus develop paralysis. Yet no one interprets this as throwing doubt upon the virus as the cause of poliomyelitis.

7. There is increasing evidence that viruses may cause human cancer, so how could cigarette smoking also be a cause?

Even if a virus is involved in the development of lung cancer, cigarette smoking could be the mechanism whereby the balance between the virus and the body cells is upset, leading to the development of cancer. This is what occurs with herpes labialis or "cold sores" — a disease caused by a virus that is continuously present in the body but which causes trouble only when the balance between the virus and the cells of the skin is upset by local irritation, by a cold or by sunburn or windburn.

8. Cigarette smoking cannot be the cause of lung cancer because other causes have been demonstrated.

It is true that the inhalation of dusts containing carcinogenic substances, such as radioactive ores, chromates, nickel, etc., can cause lung cancer, and it is possible that research may show that pollution of the air with carcinogenic gases from the burning of gasoline, etc., is also a cause of this disease. Such additional causative factors, however, do not invalidate the evidence implicating cigarette smoking as the major cause of lung cancer. Medical organisations do not maintain that smoking is the only cause.

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WORLD CANCER PRESIDENT IN AUSTRALIA

The President of the International Union Against Cancer, Professor Alexander Haddow, of the University of London, is visiting Australia as guest of the Anti-Cancer Council of Victoria. He will exchange information with local cancer research workers and lecture to the medical profession.

Professor Haddow, who is also Director of Britain's Chester Beatty Institute for Cancer Research, said on his arrival in Melbourne that at present surgery and radiotherapy were the only methods of treatment which could cure cancer completely. The earlier they could be applied the better was the chance for success.



Professor Alexander Haddow.

He added that considerable progress had been made in the past 14 years in developing drugs for treating various forms of cancer. So far these could control the disease only temporarily, and unless there were unexpected developments it seemed unlikely that a single "wonder drug" would be discovered to cure all cancers.

Professor Haddow's research team developed the anti-leukaemic drug Myleran which is now widely used to produce remission of symptoms in this disease. He said research was now concentrating on finding the basic causes of cancer; only when these were known could chemical cures be expected.

CIGARETTES AS CAUSE

The most important factor in the prevention of lung cancer was the reduction of cigarette smoking, Professor Haddow said. Recent research had shown that 80 to 90 per cent of cases of lung cancer could be attributed to this cause.

He added that the risk of cancer varied in direct proportion to the number of cigarettes smoked. Pipe smoking appeared to be comparatively safe so far as lung cancer was concerned.

Professor Haddow, who is accompanied by his wife, is also visiting other Australian states and New Zealand.

CANCER APPEAL CHAIRMAN REPLIES TO CRITICS

The Victorian Cancer and Heart appeals were not only the most successful charitable appeals ever held in Australia but also the most economical, Cr. W. J. Kilpatrick said recently.

Cr. Kilpatrick was chairman of both appeals — the Cancer Campaign in 1958 and the National Heart appeal in 1961. He said audited accounts published widely soon after completion of the appeals showed this to be true.

He was replying to criticisms of the expenses involved in charity fund-raising made at a meeting of the Moorabbin Council on July 1st.

Cr. Kilpatrick added, "We believe that no large-scale charitable appeals anywhere in the world have ever been conducted more cheaply than our Heart and Cancer appeals".

In the Cancer appeal £1,350,000 was raised but expenses amounted to only £25,667, a ratio of about 1.8 per cent. In the celebrated "Campaign Door-knock" more than £300,000 was raised at an expense of only £4,000 or less than 1.5 per cent.

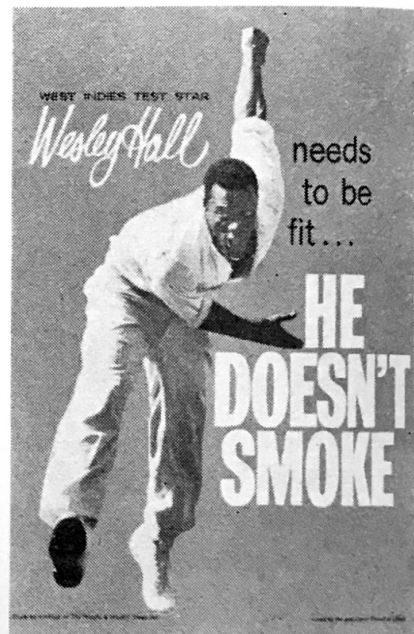
Cr. Kilpatrick said that the Heart appeal which was on a national basis, raised £2,510,745 at a cost of £140,909, or 5.6 per cent.

SPORTSMEN FEATURE IN ANTI-SMOKING DRIVE

Posters and folders featuring three popular sportsmen, all of them non-smokers, are being used to discourage 150,000 Victorian schoolchildren from starting to smoke.

The sportsmen endorsing the campaign, launched by the Anti-Cancer Council of Victoria on August 1st, are Alistair Lord, Geelong League football star and 1962 Brownlow Medallist, Murray Rose, International and Olympic freestyle swimming champion, and West Indian Test Cricket star, Wesley Hall.

The Council has the support of the Education Department in distributing anti-smoking folders among grade V and VI pupils in Primary Schools throughout Victoria. Posters featuring the three sportsmen are being circulated at the same time for display on school notice boards.



One of the posters now displayed in Victorian schools.

Commenting on the campaign, the Council's Medical Adviser, Dr. E. V. Keogh, said:

"There is increasing concern at the prevalence of smoking amongst young people today. Research has shown that the habit of smoking is formed by many youngsters between the ages of 11 and 14.

"In view of the alarming increase in lung cancer, most of which is directly attributable to the smoking of cigarettes, the Anti-Cancer Council considers it is most important to try to influence school children against taking up the habit. We hope that when they see that many of their sporting heroes are non-smokers, they will make up their own minds not to smoke."