Victorian Cancer News

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

No. 8 **MAY, 1961**

TELEVISION AIDS CANCER DIAGNOSIS

MELBOURNE TV PROJECT

by Carlotta Kellaway

A telecast recorded by a miniature camera not much larger than a matchbox allowed doctors at last year's Victorian Cancer Congress to watch in detail the medical examination of a patient suffering from cancer of the respiratory tract.

It represented a new approach in cancer diagnosis.

Credit for the achievement goes to a Melbourne research team, financed by the Victorian Anti-Cancer Council, which is exploring the possible applications of television as a diagnostic aid in cancer.

The project is directed by Dr. George Berci, Lecturer in Experimental Surgery in the Department of Surgery at the University of Melbourne. His three-man team has its headquarters at the Alfred Hospital.

Dr. Berci and his colleagues have also developed an X-ray Television Storage Unit which, although still in the experimental stage, has had highly successful preliminary tests, and ultimately may radically alter existing X-ray techniques.

In addition to the miniature camera and storage unit, the same research team has developed special television techniques utilising infra-red rays.

UNIQUE MINIATURE CAMERA

The tiny television camera, which weighs approximately 10 ounces, is now in use at the Alfred Hospital. It is designed for use in endoscopy, that is, the visual examination of internal organs of the body such as the lungs, gullet and larynx by means of special optical instruments.

This new technique promises to be a major advance on some of the comparatively limited optical instruments now used in medicine for the diagnosis and location of internal cancers and other abnormal conditions.

The miniature camera has already been coupled with the bronchoscope (used for examination of the lungs and bronchial tubes) and the laryngoscope (for examination of the movement of the vocal cords). It is hoped that at an early stage its use will be extended to other endoscopic techniques.

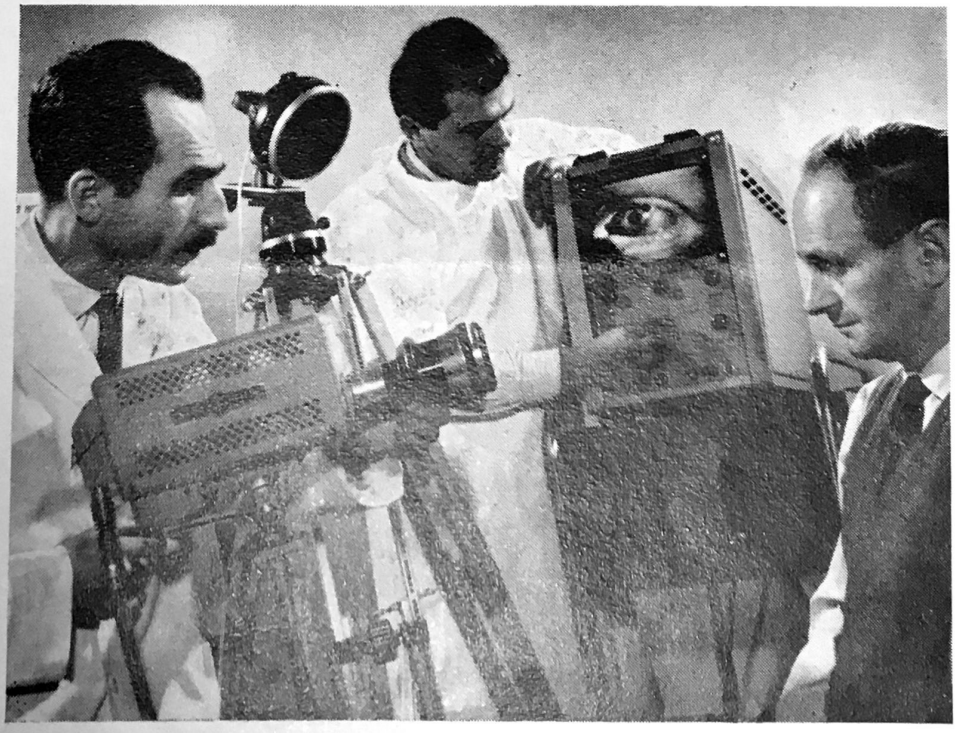
Dr. Berci began the research in his spare time with Mr. Jurgens Davids, a qualified TV engineer at the time employed by a Melbourne television station, and Mr. Leslie Kont, an electronics engineer.

Both Mr. Davids and Mr. Kont have since joined Dr. Berci's research unit. The third member of the team is Mr. F. C. Caldwell, an instrument maker.

A great deal of ingenuity was needed to find the right materials for construction of the camera.

A tiny Vidicon tube was required, and Dr. Berci finally discovered a suitable tube in Western Germany. It was only half an inch in diameter and about the length of a man's index finger. Using this tube the Melbourne team was able to build an adaptable two-part transistor camera which can produce clear television pictures, magnified some 20 times, of a limited area of the organ under examination.

As well as investigating the applications of television to endoscopy, the research workers have also been able to record the endoscopic image in colour movie films and still photographs. Experience in this work is being accumulated and already several documentary and teaching films have been prepared on various aspects of cancer diagnosis.



Dr. Berci (on left) and his colleagues experiment with infra-red television.

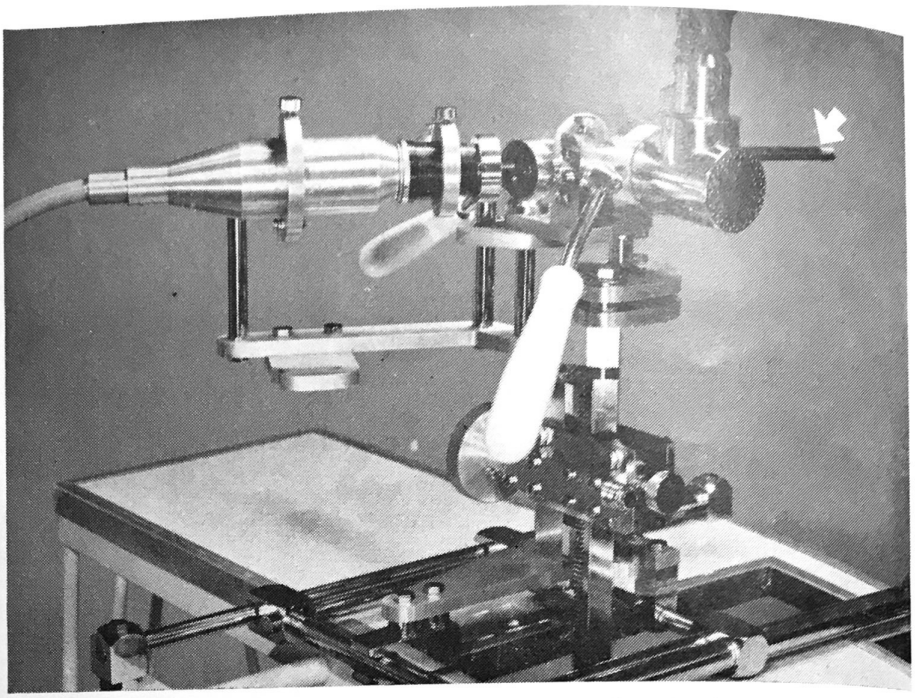
X-RAY IMAGE STORAGE ON TV

The use of X-rays in medicine — and particularly diagnostic X-ray work during surgery — promises to be revolutionised by the X-ray Television Storage Unit. By coupling a television camera and storage unit to a conventional X-ray image intensifier, the new equipment stores the momentary X-ray image and displays it for a prolonged period on the television screen while the surgeon studies it. A special in-built mechanism enables the image to be repeated automatically at pre-selected intervals.

Normally, when a doctor calls for an X-ray during operation he may have to wait ten minutes for the film to be developed. In some cases a series of X-rays may be necessary, and the consequent delay may mean protracted anaesthesia for the patient.

With the help of television this waiting period can be eliminated, for the surgeon is able to obtain an immediate enlarged image, which can be adjusted for brightness and contrast, on the TV screen at his side.

The storage unit was designed by Mr. A. Seyler, a research engineer with the P.M.G.'s Department.



The television camera coupled to a laryngoscope. During use the patient is seated at right with the laryngoscope (arrowed) in his mouth.

RADIATION HAZARD REDUCED

Another important advantage of the storage unit is that it substantially reduces the radiation hazard to which the patient is exposed.

The amount of radiation required to obtain a stored television picture of a thigh bone, for example, is only one-fortieth of that required for a conventional X-ray of the same bone.

Finally, the storage unit has considerable potentiality as a teaching and consultation aid. Pictures may be shown on TV monitor screens both inside and outside the hospital. This may prove invaluable in demonstrating diagnostic and operating techniques in cancer to groups of doctors and medical students.

The miniature television camera.

INFRA-RED TELEVISION

The research team's third major project has been the development of a form of television that can operate in complete darkness and can televise the normally invisible. In this process a beam of infra-red light, invisible to the human eye, is trained on an object in a darkened room. By means of a specially adapted television camera, the invisible infra-red image is converted to a visible one on the television screen.

Since the eye does not react to infra-red rays as it would to ordinary light rays, it is possible by this means to televise a patient's eye at close quarters, obtaining a greatly magnified image on the screen.

The infra-red rays also have the power to penetrate below the surface of objects, and can, for example, show the superficial blood vessels below the skin's surface. Thus this technique may eventually enable doctors to observe the behaviour of tissue at different layers of the skin.

More than £36,000 has been allocated over a two-year period by the Anti-Cancer Council to support the television research project.

WHAT SHOULD THE CANCER PATIENT BE TOLD?

EMINENT SURGEON'S ADDRESS AT CANCER CONGRESS

The cancer patient should be told by his doctor what is likely to be of benefit to him concerning his diagnosis, treatment and future prospects. In doing so it is not proper to dwell on any gloomy features, but if anything hopeful can be said it should be stated clearly and even repeatedly if this is justified.

Sir William Upjohn, eminent Melbourne surgeon, made these points in discussing what to tell the patient, and how, at the recent Cancer Congress.

Patients are more likely to co-operate with the surgeon or radio-therapist, he said, if they have an adequate understanding of the serious nature of their illness, and have not been misled by being allowed to think that their trouble is just an ulcer, cyst or warty swelling.

When a major operation is involved a surgeon should not expect a patient to consent unless he knows that he has cancer, and that anything less than a radical removal of the affected part would be worse than useless.

It would be a shocking thing, he said, for a patient to wake from an anaesthetic and find that extensive operative changes have been made in his anatomy, without his having been warned beforehand that this was contemplated by the surgeon.

A clear explanation of what is proposed should be given to the patient before his consent is sought. If he recoils from such a suggestion it is right to talk to him in order to remove any misconceptions he may have about being able to live a comparatively normal life after surgery.

It is not a surgeon's duty to urge a patient, particularly an elderly person, to undergo some operation abhorrent to him in its effects. It should be enough for him to indicate clearly the benefits likely to follow operation and to correct any erroneous beliefs held by the patient.

EDUCATION CAMPAIGN

Stressing the importance of the public education campaign, which emphasises the necessity for people to consult a doctor if they develop certain disquieting signs or symptoms, Sir William said that the patient who seeks advice although really quite free from cancer must not be ridiculed or told that he has "cancer on the brain" or that he is wasting the doctor's time.

A patient who met with a rebuff from his doctor could be discouraged from again reporting when there might be a real cause for him to seek medical advice.

WHEN NOT TO TELL

It is not right, he continued, to inform a patient that he has cancer if there is any possible doubt regarding the certainty of such a diagnosis. It is right to advise the patient to have tests,. a consultation, or even an exploratory operation to establish beyond doubt that the malady is really cancer, and not some condition closely resembling cancer but requiring different treatment and having a different future course.

Sometimes no useful object is obtained by telling a patient the true nature of his ulcer or tumour.

In old people malignant disease may be very slow in its progress. It may be controllable by means other than surgical operation, or the patient may have some other malady which could terminate life before the cancer becomes troublesome.

In a case such as this no good but much mental discomfort may result from telling the truth.

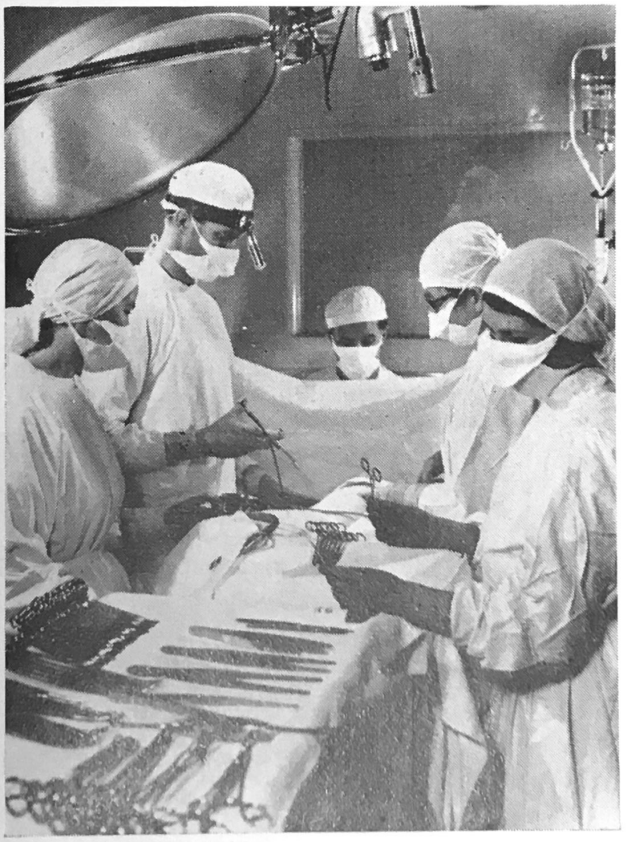
It is not right to misstate deliberately the nature of the disease, but quite often a patient is not concerned about the name of his illness — he is more interested in what can be done about it.

HOW TO TELL

As well as **what** to tell, it is almost equally important to consider **how** to tell the patient.

We must remember, cautioned Sir William, that many patients are fearful, that they do not have the knowledge possessed by medical practitioners, that they may have picked up misconceptions about the disease in conversation or in reading magazine articles.

It is the duty of the physician or surgeon to consider each patient as an individual, to try to understand his personality, his way of life, his domestic and familial responsibilities, and to think upon these matters before deciding what it is necessary or desirable to tell him about his illness.



A major operation in progress at a Melbourne hospital.

Definite prediction about the course and duration of the disease should be avoided as far as possible.

Diagnosis and treatment have their difficulties, but prophecy even by the most experienced doctor may be wildly wrong. Those with an apparently hopeless prognosis may live on, and those with a favourable outlook may disappoint.

If the doctor is obliged by business or family circumstances to give a prediction to the patient, it is better to state what is known to be the average or normal prospect in his type of illness.

However, if the doctor knows of instances in which the survival and course of the disease have been much more favourable than average he should tell the patient. It is remarkable what hope and faith in improvement will do for a patient. After all, Sir William concluded, it is an old and true saying that "while there's life there's hope."

VICTORIAN NEWS

VISIT TO RUSSIA

A group of Australian doctors left Sydney on 19th April on a visit to the Soviet Union to study Russian medical practice, including cancer treatment and research facilities. Their tour included visits to Moscow, Leningrad, Stalingrad, Tashkent and the Black Sea region.

The Melbourne doctors in the group took with them an unusual gift for their Russian colleagues — a tape-recorded transcript, in Russian, of the symposium on breast cancer held last year at Melbourne University, under the auspices of the Medical Postgraduate Committee and the Anti-Cancer Council. The papers given at the symposium were translated and recorded at the University's Science Languages Department.

CANCER SYMPOSIUM

The fifth Cancer Symposium to be conducted by the Melbourne Medical Postgraduate Committee, in association with the Anti-Cancer Council, was held at Melbourne University on 18th March. It was attended by some 400 doctors from all parts of Victoria.

The purpose of the symposium was to inform general practitioners of the latest developments in the diagnosis and treatment of cancer of the colon. Previous symposia have dealt with cancer of the breast, uterus, stomach, and the reticuloses.

CANCER INSTITUTE

A new central block costing £130,000 is now under construction at the Cancer Institute (Peter MacCallum Clinic).

The block will house the Institute's second 4-million volt linear accelerator, at present on its way from England. The machine will enable twice as many patients to receive the benefits of supervoltage radiotherapy, and will also provide a safeguard against any breakdown in the existing machine.

The Institute's rebuilding programme has been assisted by a loan of £150,000 from the Anti-Cancer Council.

RESEARCH FELLOWSHIP

Dr. Saul Wiener, who for some years has been engaged in the study of the immunology of tumours, under grant from the Anti-Cancer Council, has been awarded the first Arthur A. Thomas Research Fellowship.

For many years the Arthur A. Thomas Trust has generously supported the Council's research programme, and this evidence of its continuing interest in cancer research is most welcome.

Dr. Wiener is to visit the United States in August of this year to continue his investigations under the direction of Dr. A. Gellhorn, Director of the Cancer Research Institute of Columbia University, New York. He has also received a Fulbright Travel Grant from the U.S. Government.

ITALIAN CONFERENCE

Dr. Donald Metcalf, the Council's Carden Research Fellow, has been invited by the C.I.B.A. Foundation of London to present a paper at a Symposium on Mouse Tumour Viruses, to be held in Italy in June. Membership of the symposium is limited to 30 prominent workers in the field, and 18 papers will be presented for discussion.

On his way to Italy, Dr. Metcalf will visit leading American research centres to discuss problems relevant to his present work. He is due to return to Melbourne in July.

NEW GUINEA STUDY

Observations made at the Victorian Cancer Congress last year by a New Guinea surgeon, Mr. Frank Smyth, on cancer of the mouth in the native population, have resulted in a visit to Port Moresby by the Professor of Surgery at the University of Melbourne, Professor Maurice Ewing.

He discussed with Mr. Smyth and the Director of Public Health, Dr. Scragg, proposals for a field study of the incidence of mouth cancer in relation to the betel-nut-chewing habits of the differing racial groups in the Territory.

The Anti-Cancer Council awarded Professor Ewing a grant towards the cost of his travel expenses.

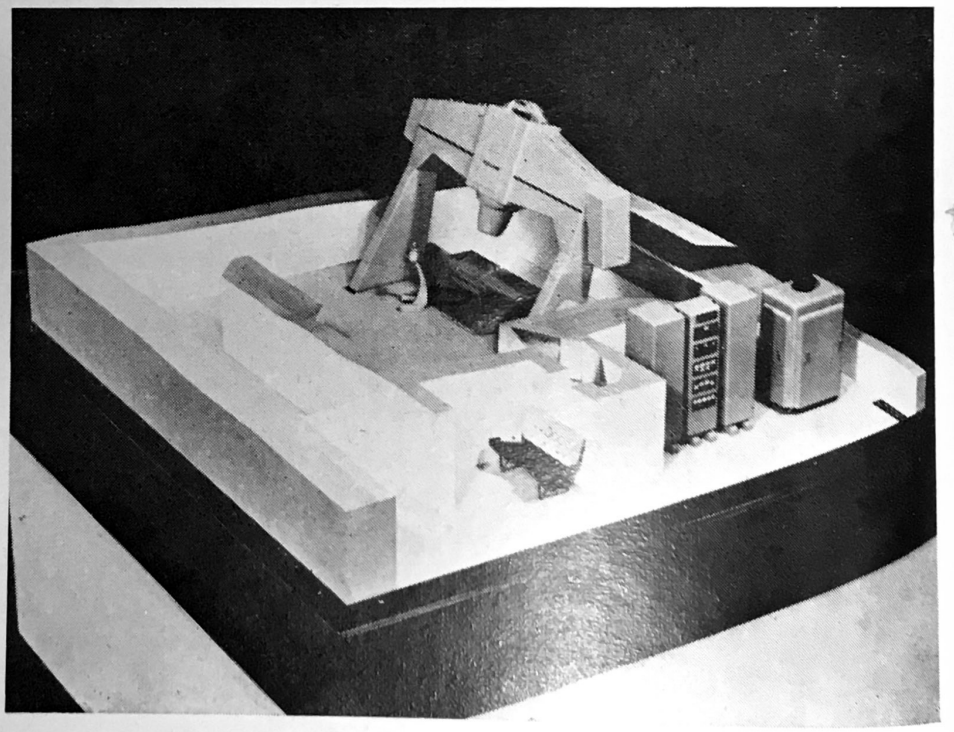
HEALTH WEEK

The early detection of cancer is the theme chosen by the Victorian Health Education Committee for Health Week 1961. The slogan "Early Detection is your Protection" has been selected by the Committee.

A varied programme of activities is being drawn up, and it is hoped that statewide coverage can be assured through the co-operation of State Government Departments and local municipalities.

The Committee is also giving consideration to an anti-smoking campaign in the schools, in an endeavour to alert secondary school children to the potential dangers of the smoking habit.

The Anti-Cancer Council is actively co-operating with the Health Education Committee in the Health Week programme.



Model of the second linear accelerator ordered for the Peter MacCallum Clinic.

REPORTS FROM THE COMMONWEALTH

AUSTRALIAN CANCER COUNCIL

The formation of an Australian Cancer Council was agreed upon by delegates of all State Cancer Organisations meeting in Melbourne on 24th November, 1960. When it is formally constituted, probably in July of this year, the Council will consist of representative members appointed by each State organisation.

The primary aim of the new National Council will be "to foster national and international co-ordination and development of all activities in relation to cancer." In particular, its formation will enable Australia to participate at the national level in the work of the International Union against Cancer.

For the present an interim council, consisting of all delegates invited to the November meeting, has been formed, with Councillor W. J. Kilpatrick of Melbourne as President, and Dr. B. S. Hanson of Adelaide as Deputy President.

WESTERN AUSTRALIA

Perth's new Institute of Radiotherapy, housing a 4-million volt linear accelerator, was officially opened in March.

Built at a cost of £175,000, of which £125,000 came from public subscriptions, the new Institute will be able to treat up to 40 patients a day.

(*"West Australian," 30/3/61*)

NEW SOUTH WALES

The first hostel for cancer patients in New South Wales is expected to open shortly. It will be controlled by the Cancer Patients' Assistance Fund, a voluntary organisation formed by a group of women and medical authorities interested in cancer treatment.

The 20-bed hostel, at Darling Point, will cater mainly for patients from outlying metropolitan suburbs and country areas who do not require hospitalisation while undergoing radiotherapy treatment.

(*"Telegraph," 18/3/61*)

SOUTH AUSTRALIA

The Anti-Cancer Campaign Committee of the University of Adelaide, the South Australian State cancer organisation, has been re-organised as the Anti-Cancer Foundation. Membership of the new Foundation will be open to firms and individuals on the payment of an annual membership fee. It is hoped in this way to interest a wide cross-section of the community in anti-cancer activities. Plans for a public appeal in 1962 are now being prepared.

"BACKGROUND FOR HOPE"

"If it is in order to speak of impressions, the Radiotherapists and the Surgeons who work with some of the more serious forms of cancer have the impression that cure-rates for these forms of cancer are rising. They are, moreover, certain that, in many incurable cases, relief is being effected more easily and to a greater degree than could be done previously. We can never be really happy with less than 100% of cures, and we are still tragically short of this figure; but this is, we hope, a small sign of the improvement which we feel sure will come with the development of our knowledge of, and research into, the causes and treatment of cancer." (*From 1960 Annual Report of the Anti-Cancer Campaign Committee of the University of Adelaide.*)

MOBILE EDUCATION UNIT IN MANCHESTER

The Mobile Information Unit (pictured above), believed to be the first of its kind in Europe, has recently gone into service in the fight against cancer in Manchester, England.

The vehicle, operated by the Manchester Committee on Cancer as part of its public education service, was purchased and is entirely maintained by voluntary contributions.

The gift of Rotary Clubs in the north-west of England, it is felt to be a most encouraging public endorsement of the education campaign. It will be especially valuable in making reliable information available to people who, because they do not belong to any community organisation, cannot hear one of the Committee's lecturers.

The nurse in charge of the vehicle will, after special training, visit offices, stores and factories to give talks and, where convenient, screen short film shows to small groups of workers. If the experiment is successful, it may be the means of saving some of the many people in England — estimated to number some 10,000 annually — who die needlessly of curable forms of cancer because, through fear or ignorance, they put off seeking a doctor's advice until the disease has taken too firm a hold.

COMMITTEE NEWSLETTER

AROUND THE REGIONS

by A. J. Brown

EDUCATION — GOOD OR BAD?

The standard answer to critics of the public education campaign is that education on cancer, with its emphasis on early recognition and treatment, will help to save many lives every year. However, the question can be looked at in a different way.

Let us suppose that cancer associations, doctors, insurance companies and others interested in supplying accurate and factual information to the public withdrew from the field. There would then be a vacuum, into which would rush the proponents of all the myths, superstitions, fallacies and untruths which it has been our business to correct. The public, denied the opportunity to secure information from authoritative sources, would pick up their knowledge of cancer from misinformed neighbours and friends, from faddists, perhaps even from quacks. Such an atmosphere would hardly encourage people to seek the early medical attention that is so important.

These thoughts were prompted by two recent letters to the Council. The first came from a member of the Speakers' Panel, who reported that a woman at one of her meetings had sought her advice about a warning sign. The lady in question, it turned out, had had the sign for several months, but had been persuaded by her neighbour that it could be relieved by a change in diet. However, the new diet had had no effect, but on the contrary the symptom had progressed. Our speaker persuaded the patient to consult her own doctor, and later heard from her that she was undergoing treatment for cancer.

The second letter was received from the President of a women's organisation in the country following a lecture on cancer given to the group. Her letter speaks for itself:—

> "I thought you would like to know that as a direct result of your talk, two of our members are now undergoing treatment for skin trouble of long standing — one by our local doctor and the other is now at the Peter MacCallum Institute receiving 10 days' treatment. Wishing your organisation future success in your fight against this disease."

EDUCATION WEEKS

October and November of 1960 were the busiest months yet in the development of the education programme in the Regions.

The MILDURA Regional Committee organised a successful "Week" commencing 17th October. Eight public meetings were held at Mildura, Redcliffs and Merbein, with a total attendance in excess of 1,500, mainly women. The "Sunraysia Daily," radio station 3MA and the local picture theatres co-operated most generously with the Committee.

In the following weeks the SALE and BAIRNSDALE Committees arranged for the exhibition of the Council's travelling display, and for the screening of selected films at the Sale and Bairnsdale shows. A talk given by Sir Peter MacCallum at a public meeting in Bairnsdale on 3rd November attracted an audience estimated to number 900 people. The press and radio again gave extensive assistance to the committees concerned.

A successful two-day programme was held at SHEPPARTON on 17th and 18th November, under the auspices of the local Regional Committee. Two meetings for women only, featuring the film "Breast Self-Examination," were widely publicised amongst women's organisations and were particularly well attended.

The year concluded with a most satisfactory campaign in WODONGA and district, including Kiewa, Yackandandah, Chiltern and Tallangatta. More than 1,000 men and women attended a series of twelve meetings held during the week commencing 21st November.

A notable feature of the Wodonga Committee's programme was the publication of a special 4-page "Cancer Education" supplement by the "Border Morning Mail." The supplement, wholly financed by advertisements, brought essential information about cancer to the paper's 20,000 readers. The Albury radio stations also gave invaluable publicity to the campaign.

1961 opened with an extensive and extremely successful "Week" in the WARRNAMBOOL Region in February. Public meetings were held at Warrnambool, Camperdown, Koroit, Mortlake, Port Fairy and Terang, with an estimated total attendance of 2,500. At least 2,000 people are believed to have viewed the exhibition, "Victoria Fights Cancer," which was on display in the Warrnambool Town Hall throughout the week.

This exhibition was again featured during BALLARAT'S "Education Week" in March. Public meetings for women only at Creswick and Daylesford were well attended, and in Ballarat itself 500 adults and senior school children were present at the various sessions.

REGIONAL CONFERENCES

The Shepparton and Horsham Committees have both organised Regional Conferences, attended by delegates from the sub-committees, in the past month.

The idea of the conferences was to further liaison between the Regional Committees and their sub-committees, and in particular to brief the latter on their role in the public education programme.

As a result, preliminary arrangements have already been made for an education campaign in the Euroa-Violet Town area. Following the Horsham conference several sub-committees in the Wimmera also expressed keen interest, and plans for a joint "Education Week" are now under discussion.

Dr. H. G. Judkins.

PAST PRESIDENT OF B.M.A. JOINS PUBLIC EDUCATION COMMITTEE

The President of the Victorian Branch of the British Medical Association in 1960, Dr. H. G. Judkins, has accepted an invitation to join the Public Education Committee.

Dr. Judkins has been a member of the Victorian Branch Council of the B.M.A. for the past nine years, and a member of the Board of Management of the Box Hill District Hospital since 1944. His advice and wide experience in general practice will be invaluable to the Committee in its work.

PROFILES

In this and subsequent issues we should like to introduce to you some of the other people in Victoria who work with the Council in promoting its education and welfare programmes in the country.

Their efforts, together with those of the hundreds of other men and women who are devoting their time and efforts to the campaign against cancer, have enabled the Council to help many country patients in needy circumstances, and to distribute essential information about cancer throughout the State.

BENDIGO COMMITTEE

A former Mayor of Bendigo (1950-1), Mr. Norman H. Oliver, Chairman of the Bendigo Cancer Committee, combines a successful business career with a sympathetic and tireless interest in many local charities. He is the present Vice-President of the Association for Hospitals and Homes for the Aged, and is past President of the Board of Management of the Bendigo Benevolent Home.

Mr. N. H. Oliver.

A fellow of the Australian Institute of Management, Mr. Oliver is a past President of the Victorian Federation of Chambers of Commerce.

Mr. Oliver and his Committee pioneered the first country "Education Week" held in Victoria in March, 1960. The result was described at the time by the Bendigo "Advertiser" as a "phenomenal success," with more than 3,000 people attending the public meetings at the Town Hall. The pattern of activities set by the Bendigo Committee has been closely followed in all subsequent "Weeks."

GEELONG COMMITTEE

The honour of C.M.G. for service to the community was conferred on Mr. J. Spencer Nall, Geelong Cancer Committee Chairman, in 1954. Some nine trusteeships of charitable and philanthropic institutions occupy much of Mr. Nall's attention at the present time.

For the past 50 years Mr. Nall has been connected with the well-known Geelong firm of Bright and Hitchcocks (Stores) Pty. Ltd. He commenced as secretary to the company, becoming successively manager, chairman, and finally managing director in 1927. In 1938 he became proprietor of the firm. Twelve years later the business was floated into a public company, which in 1959 was merged with Foy and Gibson Ltd. of Melbourne. Mr. Nall still retains the position of chairman of directors and, with his son, Mr. Kenneth Nall, is joint managing director.

Mr. Nall was chairman of the Geelong Harbor Trust Commissioners for 25 years, retiring in 1958. During that period he was also president of the Geelong Chamber of Commerce and Manufactures.

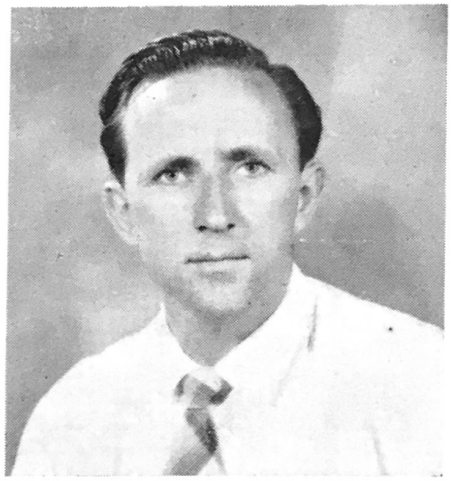
Under Mr. Nall's chairmanship, the Geelong Cancer Campaign Committee in 1958 raised the largest sum of any committee outside the metropolitan area.

In September of last year the Geelong Committee arranged for the delivery of cancer leaflets to some 20,000 households in the Greater Geelong area as a "Cancer Education Week" project.

Mr. J. Spencer Nall, C.M.G.

MILDURA COMMITTEE

Mr. Harold C. McKenzie, Mildura Cancer Committee Chairman, who is Manager-Engineer of the Mildura Urban Water Trust, was awarded a scholarship with Federated British Industries to study design procedure in England in February, 1960, but has not yet been able to accept it. Mr. McKenzie began his engineering career as a student at Melbourne Technical College where he completed his civil engineering diploma course in 1952.



Mr. H. C. McKenzie.

The same year he was appointed Assistant Erection Engineer on the Lurgi Gasification Plant at Morwell by the Gas & Fuel Corporation, and later became Acting Civil Engineer there.

Three years later he joined the Mildura Urban Water Trust as Resident Engineer for construction of the 600,000 gallon elevated water storage, the largest of its type in Australia. The following year he was appointed to his present position of Manager-Engineer.

Father of a family of five, Mr. McKenzie combines many community interests with his work as Chairman of the Cancer Committee. He is President of the Mildura Rostrum Club, Secretary of the Mildura Junior Chamber of Commerce, and a past President of the Sunraysia Kennel Club.

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NOTES ON THE HISTORY OF CANCER

By A. J. Brown

II. GREECE AND ROME

The emergence of western medicine as a profession in its own right is generally dated from the time of Hippocrates, who lived on the Greek island of Cos in the fifth century B.C. Little is known about the man who earned for himself the title of Father of Medicine, but his teachings have been preserved in the Hippocratic books, a collection of 100 volumes inspired by the new spirit Hippocrates brought to the practice of medicine.

In this corpus of classic Greek medicine, the magical rites and incantations of the sorcerers and priests are laid aside in favour of the accurate observation of symptoms and the careful recording of the physical signs of illness. Doctors are instructed to search for the physical causes of disease, which now for the first time is considered as having natural rather than supernatural origins.

ETYMOLOGY

In this new and more scientific atmosphere, it is not surprising that cancer was recognised as a distinctive process and given the descriptive name **karkinos** (the crab). Translated as **cancer** by the Romans, the term has remained in medical use for more than 2,000 years.

According to the Roman writer Galen (died A.D. 203), the term was applied to malignant tumours because "as a crab is furnished with claws on both sides of its body, so in this disease the veins which extend from the tumour represent it with a figure much like that of a crab."

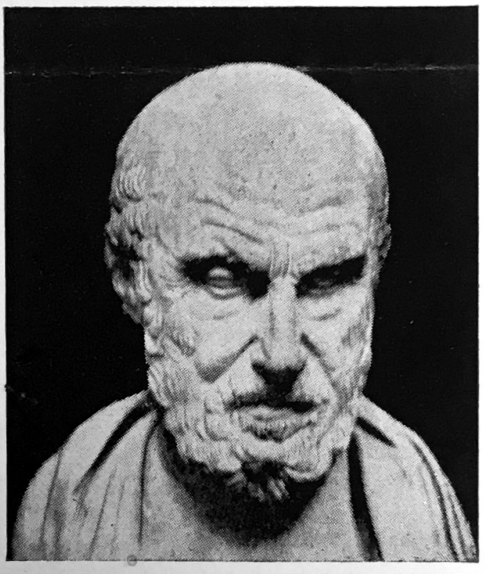
Writing four centuries later, Paul of Aegina (A.D. 625-690), suggested an alternative derivation: "Some say that it is so called because it adheres with such obstinacy to the part it seizes that, like the crab, it cannot be separated from it without great difficulty."

As one of the signs of the Zodiac, the symbol of the crab has an astrological as well as a medical significance. At times the two have become confused, and the superstition has arisen that those born under Cancer are fated to die of the disease. Even today one occasionally hears echoes of this fantastic belief, which is, of course, totally without foundation.

THE FOUR "HUMOURS"

The Greek and Roman physicians were well acquainted with the various forms of malignant disease afflicting the different organs of the body. Hippocrates and his school described many of the external manifestations of cancer, and their attempted classification of tumours still persists.

In the first century A.D., Celsus, the Roman encyclopaedist, observed that cancer "occurs chiefly in the uppermost parts, about the face, nostrils, ears, lips and the breasts of women, but it arises also in the liver and in the spleen." He also described cancer of the penis and uterus.



Bust of Hippocrates (c.460-c.370 B.C.) in the British Museum.

Both Greeks and Romans held firmly to the belief that the human body was composed of four "humours" — blood, phlegm, yellow bile and black bile — and regarded disturbances in the balance maintained between the humours as the basic cause of all disease. The humoural theory, expounded and dogmatised by Galen (A.D. 130-203), remained a dominating influence in medical thinking for more than 1,000 years.

Galen identified black bile (atra bilis) as the offending agent causing cancer. "When black bile is in the flesh, should it be acrid, it corrodes the skin round, and piercing it forms an ulcer, but when the bile is less acrid, it causes the growth of a cancer without ulceration . . . All tumours that are contrary to Nature arise from a superfluity of black bile . . . this humour arises in the liver at the time of sanguification, in the same way as lees are formed in wine."

TREATMENT

Methods of treatment in classical times included surgery and cauterisation, and some of the operative techniques described in the ancient writings are surprisingly advanced. Leonides of Alexandria (ca. A.D. 200), for example, when removing a cancerous breast, resorted to frequent cauterisings, the first "for the purpose of arresting haemorrhage, but the rest with the intention of eradicating the disease."

However, the general acceptance of the humoural theory of disease led to a growing emphasis on the use of drugs, which were believed to possess in varying degrees the characteristics of the four humours.

Treatment consisted in administering the appropriate drug or drugs to restore the lost balance between the humours. Thus a fever would be treated with "cooling" drugs and a chill with "heating" drugs.

Many of the preparations used against cancer were of a caustic or toxic nature, apparently on the principle that poison is the best thing to counteract poison. They included derivatives of toxic plants such as hemlock and the deadly nightshade, and many metals — iron, copper, zinc, silver, gold, lead and mercury. Lead preparations were much in demand, and one in particular was highly recommended by Galen. "When applied to cancers, you will truly marvel at its potency."

Whatever the treatment used, the general result was summed up by Celsus: "Some use caustics, some burning irons, others remove the growth with the scalpel; no medicine ever availed anyone, but burning exasperates and the growth rapidly spreads; after excision, even though a cicatrix be formed, it recurs, bringing with it the cause of death."

However, like doctors of today, Celsus also recognised that "the beginning of a cancer admits of a cure."

NON-MEDICAL REFERENCES

Many references to cancer can be found in classical literature. From the viewpoint of public education, perhaps the most interesting is the story of Atossa, daughter of Cyrus and wife of Darius, told by Herodotus. "Atossa had a tumour on her breast which, after a time, ulcerated and spread considerably. So long as it was small, from false modesty, she concealed it and told no one about it, but when it became troublesome she sent for Democedes and showed it to him."

Human nature has not changed in 25 centuries. The Atossas of today often sacrifice a very real chance of cure when through false modesty they delay their visit to a physician.