

VOL. VI

250

MEDICO SURGICAL
SUGGESTIONS.

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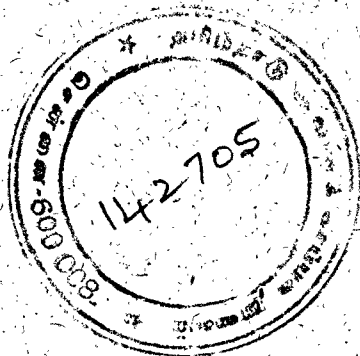
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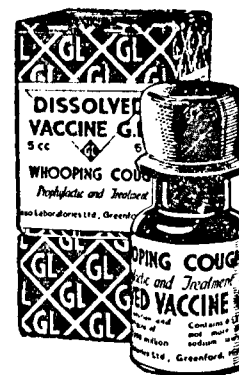
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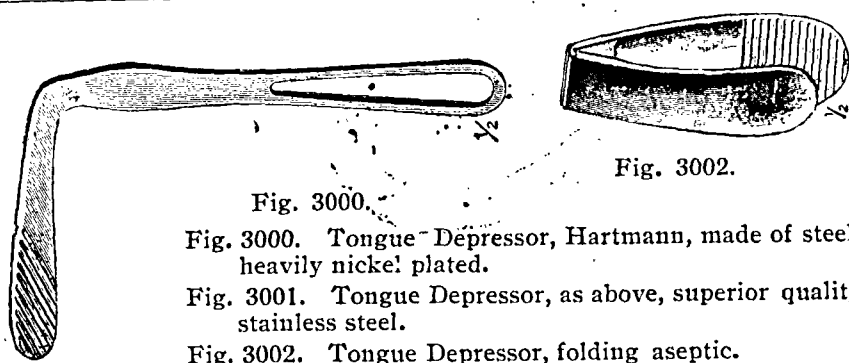


Fig. 3000.

Fig. 3000. Tongue Dépressor, Hartmann, made of steel, heavily nickel plated.

Fig. 3001. Tongue Depressor, as above, superior quality stainless steel.

Fig. 3002. Tongue Depressor, folding aseptic.

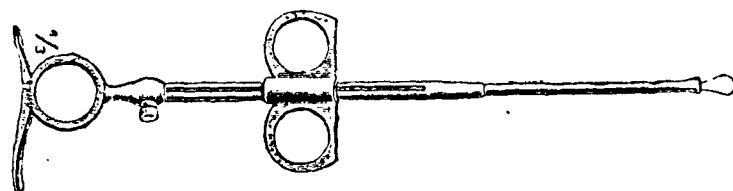


Fig. 3003.

Fig. 3003. Tonsil Snare, Eve's, heavy pattern, simple slide action.

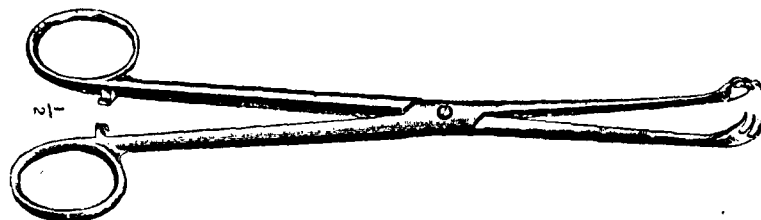


Fig. 3004.

Fig. 3004. Tonsil Vulsellum Forceps with side jaws and catch heavily nickel plated.

Fig. 3005. Tonsil Vulsellum Forceps as above. Stainless Steel.

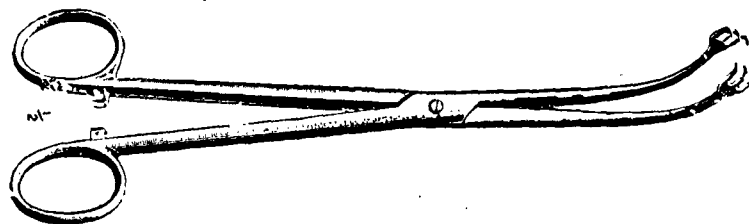


Fig. 3006.

Fig. 3006. Tonsil Vulsellum Forceps, curved on flat, steel nickel plated.

Fig. 3007. Tonsil Vulsellum Forceps, same as above. Stainless Steel.

Fig. 3008. Button Vulsellum Forceps as used in General Hospital. Steel Nickel plated.

Fig. 3009. Button Vulsellum Forceps, same as above. Stainless Steel.

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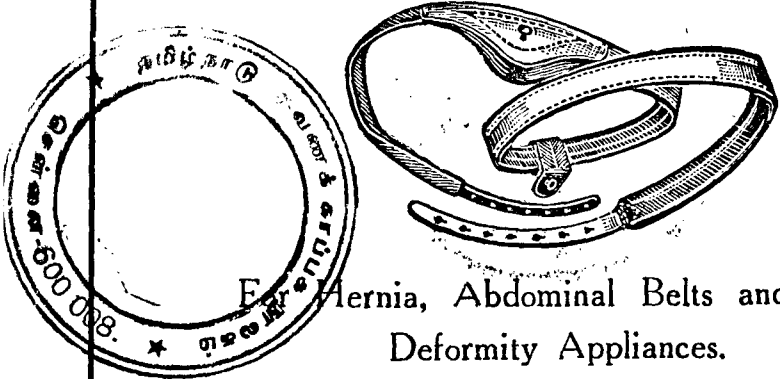
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A MONTHLY JOURNAL OF PRACTICAL MEDICINE & SURGERY

Editors : Dr. K. P. Rama Hebbar & Dr. P. R. Venkappaya.

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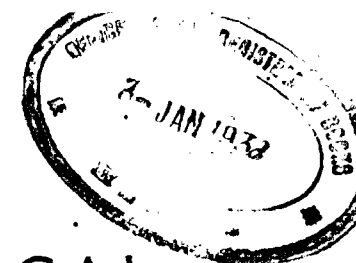
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MEDICO-SURGICAL SUGGESTIONS

VOL. VI

NOVEMBER 1937

NO. 11

CANCER.

MAX CUTLER, M.D.

Chicago.

"Captain of the Men of Death" is the well earned title of the disease which has come to occupy the center of the stage in one of life's most tragic dramas.

Among the vast organized republic of millions of cells composing our bodies, the process of cell division and cell death proceeds quietly and normally throughout the life of an individual. Some mysterious control exists over this beautiful and delicate balance of normal growth. Suddenly something disrupts this mechanism.

Thus cancer is nothing more nor less than a lawless uncontrolled growth of cells in some part of the body which refuses to obey the natural laws of structure and function. A group of "gangster" cells failing to observe the community interests of their neighbors run riot, invade the surrounding cells and cross boundaries which they should respect. Sometimes these lawless cells are content to invade only their immediate surroundings and never wander to distant parts. These more respectable groups form tumors. They may become quite large but they never break loose and do not travel to distant organs.

Other varieties are more vicious. They are not satisfied with merely invading their immediate neighbors. They break loose, enter the blood stream, lodge in distant organs and there set up other lawless colonies which disrupt the normal function of the body. These are the true cancers.

Exactng a toll of 160,000 lives annually in the United States and ranking second as the principal cause of death, exceeded only by heart disease, cancer has become a major problem of public health in the United States. Unlike other diseases, cancer is not self-limited. Insidious in its onset and steady in its progress, an untreated cancer pursues its relentless course to a fatal termination. It is the absolute certainty of this course of events that renders this disease a tragedy unequalled by any other ailment that affects the body.

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Why are we so interested in cancer, and why are we planning such a mass attack upon this enemy? More than 1 out of 10 of all deaths which occur among our men and women are caused by cancer. Among men between the ages of 55 and 70 at least 1 in 8 deaths is caused by cancer. Of all the women who die between the ages of 45 and 65, not less than 1 in 5 dies of cancer. It is reliably estimated that there are about 400,000 persons suffering from cancer in the United States at any given time. The aggregate loss of life is appalling. The death rate has increased about 65 per cent since 1900. The importance of the subject does not need to be stressed its prevalence and the tragic distress associated with its advanced and terminal stages is only too well known to us all.

Although cancer affects men and women of all ages, it seizes man as a rule in the prime of life when the trained mind or hand is at its best and when he is of the greatest value to his family and community. The disease is found wherever man exists. No race is immune. No tissue or organ in the body is exempt.

What causes these cells to depart from their righteous ways and become lawless members of society? This has been well illustrated by an analogy given by Morley Roberts. He asks, what causes a cartridge to explode? *Why* it explodes is that it is struck with a detonator. That is the exciting cause. *How* it explodes involves the entire realm of the physics of matter and the nature of the molecule and atom. So it is with cancer. The *whys* of many forms of cancer are now well known. Cancer of the scrotum in chimney sweeps, cancer of the skin in tar workers and among the cotton spinners of Lancashire, cancer of the lung among the miners of Joachimstal who were exposed to arsenic and radium dust, cancer of the bladder among dye workers in Germany, cancer of the cheek in betel nut chewers and cancer of the mouth from chronic irritation. These are some of the *whys* of cancer.

Precisely *how* these various agents operate is a far more complicated matter and requires further research. Here the problem revolves about the nature of the cell and the response to its environment. It raises the fundamental question as to how a cell divides to form a new cell, how a newly formed cell is endowed with the property of further growth and division. It attempts to explain how the normal equilibrium between cells is disturbed. The problem is, therefore, very broad and leads as directly to the domains of physiology, chemistry, physics and biology; indeed, back to the very nature of life itself.

From careful studies of cancer in man it is evident that cancer results from a combination of factors. First the individual must be susceptible. This susceptibility is probably inherited. Cancer seems to appear in man as a result of certain external agents operating upon susceptible individuals. The precise manner in which these

factors result in the establishment of cancer is just beginning to be understood.

Two recent discoveries in cancer research are of such apparent significance that there is scarcely a cancer research laboratory in the world that is not pursuing these leads. They are the discovery and isolation of certain cancer producing chemicals and the experimental production of cancer of the breast in male mice by means of one of the ovarian hormones. All cancer students agree that these observations are by far the most promising that have developed in the entire history of cancer research.

Is Cancer Curable? Cancer is curable. More people are being cured of this disease than is generally supposed. Patients who have been cured of cancer are reluctant to discuss it. Consequently, we hear more of the failures than of the success. If it is true that cancer is curable, why does not this happy event occur more often?

The external cancers are both preventable and curable. These include cancer of the skin, lip, mouth, cervix and certain cancers of the throat. In spite of these facts, 60,000 men and women die each year in the United States of these external cancers. The internal cancers, such as cancer of the lung, stomach, intestine, liver and kidney yield not more than 10 per cent cures largely because, failing to produce early symptoms, they make themselves evident only in their later stages after the disease has spread too far for complete eradication by our present methods of treatment. We do not have today any blood test for the detection of early cancer. One hundred thousand deaths occur every year in the United States as a result of internal cancer.

The last ten years, and more notably the last five years, have witnessed important advances in treatment and marked improvement in results in certain types of cancers. More powerful x-ray and radium apparatus and especially a better understanding of the basic principles by which these agents act upon cancerous tissues have revolutionized the technique of radiation and enhanced the possibilities of cure.

Thus far these advances have occurred only in the domain of external cancers which account for one-third of all deaths. There is some hope that the application of the new principles and techniques may also make some inroads into the larger group of internal cancers which account for two-thirds of the deaths.

In general it may be said that for the external cancers, x-rays and radium in expert hands accomplished 80 to 90 per cent cures in early cases and 10 to 20 per cent cures in advanced cases. These are some of the triumphs of radiation in the past ten years. This progress has not been easy nor rapid. On the contrary, it represents the most painstaking efforts of closely co-ordinated and perfectly organized groups of scientists over a period of almost twenty years.

When we consider internal cancers the picture changes. The cures in this group probably do not exceed 10 per cent. Efforts to devise tests for the detection of internal cancers in their early stages and researches into the fundamental causes with the hope of prevention constitute important fields of cancer research.

What Do We Mean by Cancer Research? Cancer research may be divided into two parts: 1. *Clinical* research which has to do with the study of cancer as it appears in the patient. In pursuing this type of research one must utilize all sorts of laboratory aid, pathological, serological, chemical and biological. 2. *Experimental* research. This type of investigation has to do with studies of the nature of cancer and its causes.

The following examples are given to illustrate different phases of these two forms of research.

Clinical Research. The most important progress in the treatment of cancer during the last ten years has occurred in the fields of x-rays and radium. These agents have replaced surgery in certain forms of cancer and there are indications that other forms now requiring extensive operations may yield to these advances. Thus it is obvious that a department for radiation is in effect a center of clinical research. It must be equipped with the latest x-ray machines and radium apparatus. It must be manned by a highly trained personnel. It must have adequate facilities for diagnosis, treatment, follow-up examination and hospitalization. Above all, it must be in a position to select for study those types of cancer which are under investigation regardless of the patient's ability to pay for expensive treatment or the necessity for prolonged free hospitalization. This department of clinical research has fully proved its value by the practical contributions it has already made to the curability of cancer. Of all the departments of clinical research this is the most active and most promising.

Experimental Research. Are we any closer to the explanation of the fundamental causes of cancer today than we have been in the past? Before attempting to answer this question it must be admitted that there are those who consider the fundamental causes of cancer to be so intimately bound up with the process of normal growth that they compare the solution of the fundamental causes of cancer to the explanation of life itself.

The majority of students of the subject however, hold a more optimistic point of view which they believe is justified by the history of the progress of medical research. Seventy years ago the cause of sepsis was as obscure as the cause of cancer is today and the discovery of insulin is only a recent event. As we study the progress of science we learn that the solution of certain problems awaits developments in related fields. Thus Lister's contribution to asepsis awaited Pasteur's discovery of living micro-organisms.

About 160 years ago Sir Percival Pott of England discovered that cancer of the scrotum was common among chimney sweeps. Years later it was found that the workers in the cotton spinners' industry in Lancashire developed cancer of the skin where they were spattered with mineral oil by the revolving spindles. Soon afterwards it was noted that workers with tar and pitch developed warty growths on the hands which later turned into cancer. About twenty years ago two Japanese workers painted the ears of rabbits with tar and produced cancer of the skin experimentally. Thus it was observed that there was something in tar and pitch which had the property of producing cancer. What was this agent?

A group of chemists, chiefly in London, began to search for the underlying chemical agent. During the last three years their efforts have been crowned with success, for they have not only isolated the highly potent cancer producing chemical agents from tar but have succeeded in producing these chemicals synthetically in the laboratory. Of equal importance are the recent experiments in which cancer in animals has been produced experimentally by the injection of certain hormones.

These two lines of research—the identification of cancer producing chemicals and cancer producing hormones—are now merging, since recent experiments seem to indicate that the underlying chemical factor responsible for the stimulus to abnormal growth may be the same.

Cancer Institutes. As early as 1792, Mr. S. Witbread provided words in the Middlesex Hospital, London, for the reception of sufferers from cancer where, in the founders' happy phrase, they could remain until "relieved by art or released by death."

Cancer authorities and accredited cancer organizations have committed themselves to the policy of special cancer institutes and advise the establishment of a limited number of such units in the larger cities.

Actually, there exist in the United States today only three such organizations. Limitation of funds and inadequate personnel have been responsible for this deficiency. The development of special departments or tumor clinics in general hospitals on a comprehensive scale has also been retarded, chiefly by the scarcity of trained specialists.

These circumstances place us in the uncomfortable and unfortunate position of being unable to offer to most cancer patients the advantages of knowledge already gained and the results of recent progress. It has become perfectly obvious that the facilities for the modern treatment of cancer in this country are lamentably inadequate.

Some years ago the Rockefeller Foundation considered the advisability of assuming a greater interest in the cancer problem.

After due consideration they decided that the possibilities of the problem at that time did not warrant this procedure. Important advances in diagnosis and treatment and the discovery of highly suggestive leads upon the fundamental causes of cancer during the last few years have combined to force a change in this attitude. It is, therefore, not only of interest but of considerable significance that the Rockefeller Foundation has this year allotted several million dollars to the Memorial Hospital of New York for the building of a new cancer institute. This gift at once implies an endorsement of the progress which has been made in this field, an expression of confidence in its future possibilities and a recognition of cancer today as a major field of medical activity.

Aims of a Cancer Institute. The aims of a cancer institute may be separated broadly into three divisions: treatment, education and research. *Treatment* (including diagnostic facilities). In a large general hospital composed of many departments, any speciality is in losing competition for space, equipment, personnel and funds with the major services of medicine and surgery. This is particularly true of cancer in which the requirements are especially exacting. General hospitals have not given the subject of cancer the consideration which it deserves and requires in order that it may develop and contribute fully to its own advancement.

Individual authorities and accredited organizations are thus in unanimous agreement that the most advanced form of cancer service is that provided by special cancer institutes where opportunity is provided for diagnosis, treatment and the collection of precise data. In such specialized institutes carefully controlled experimental trial of new methods and techniques can be easily conducted and the results made available to the entire medical profession.

Progress during the past five years has been such that radium and x-rays have replaced surgery in the treatment of certain operable forms of cancer. The result is that the surgeon is no longer the sole arbiter of the eventual cure of the cancer patient. The treatment of cancer has, therefore, ceased to be the function of an individual and has become the work of a group consisting of a surgeon, an x-ray specialist and a radium specialist. It is the need of collaboration of scientists and the necessity for team work which has resulted in the organization of special establishments dedicated to the treatment of cancer.

The second indication for these special organizations is the necessity of a complex and costly equipment, a large amount of space and a highly trained personnel.

The customary tendency of the surgeon or the x-ray or radium specialist working alone towards a cancer patient is to overestimate the value of his own method. When these three specialists work together their attitude is different. They will at once subordinate

the prestige of their particular method to the sole consideration of giving to the patient the best treatment that the circumstances permit.

Are the advances made with x-ray and radium in the treatment of cancer sufficient to warrant the creation of such establishments? Professor Claude Regaud, Director of the Curie Institute of Paris, states:

"The substitution of radiological methods for surgical removal in a certain group of cancers is a conquest of science which of itself justifies the building of special establishments dedicated to its practical application under the most perfect conditions obtainable. The extension of its progress to other types of cancer is a reasonable expectation."

"The perfection of the treatment is a condition of absolute prime importance. The first radium or x-ray treatment like the first surgical operation on a cancer has a character of fatality. It is decisive for cure or for death.

"The perfecting of service to the cancer patient demands a personnel of great experience, a costly equipment and a considerable amount of installation. It is, therefore, evident that such establishments for the treatment of cancer cannot be multiplied.

"Surgeons and radiotherapists who undertake to treat curable cancers assume an exceptionally heavy responsibility, because the unique stakes which they play are the life of the patient himself. If these thoughts constantly haunted—as they should—the spirits of those who occupy themselves with the treatment of cancer, the effort of organization of this branch of medicine would be indicated by the quality and power of the institutions and not by their number."

In 1929 a special committee of the American Society for the Control of Cancer reported upon the question of cancer institutes as follows:

"We have been forced to conclude that the treatment of many major forms of cancer can no longer be wisely entrusted to the unattached general physician or surgeon or to the general hospital as ordinarily equipped but must be recognized as a specialty requiring special training, equipment and experience in all arms of the service. We feel that the future development of cancer therapeutics will develop along the lines of concentration, organization and specialization. This view is by no means new. It is well known that the most conspicuous progress in the treatment of cancer has always been accomplished by specialist. We recommend as an ideal well within the possibility of accomplishment the establishment of a limited number of cancer institutes. They should be located in large cities, be prepared to give the best modern treatment and offer facilities for research and education."

Education. Education involves dissemination of knowledge regarding various aspects of cancer among the general public,

education of the practicing physician and the training of cancer specialists.

1. *Education of the Public:* The dissemination of correct information regarding the early signs of cancer is the function of specially organized groups. In America this phase of cancer control is admirably cared for by the American Society of the Control of Cancer. The presence of a cancer institute serves as a center for public education and raises the level of knowledge of the population in the immediate and surrounding communities. By co-operating with existing agencies, a cancer institute makes a direct contribution to public education.

2. *Education of the Physician:* Although the knowledge of the physician regarding cancer has improved somewhat in recent years, it is still wholly inadequate. It has been reliably estimated that a practicing physician in an average community sees but three cancer patients in the course of a year. To him, cancer is a hopeless disease. Since the general physician is the keystone to cancer control it is of the greatest importance to set up the necessary machinery to overcome this deficiency. A more thorough training of medical students, increased attention to the subject in medical societies and frequent graduate courses in cancer are the available methods. A cancer institute at once becomes the center for these activities.

3. *Postgraduate Training:* Pending the establishment of an adequate number of cancer institutes and tumor clinics in general hospitals, a large proportion of the 400,000 cancer patients in the United States will continue to be treated at or near their homes. The responsibility of the care of these patients rests with surgeons, radiologists and pathologists. All three specialists are in great need of direction. There are no organized facilities in this country to cope adequately with this problem. It should be one of the prime aims of the institute to formulate a comprehensive program to meet this need. When it is recalled that in the treatment of cancer the question of cure or death rests solely with the skill of the specialist and that the first treatment by a surgeon or a radiologist seals the patient's fate, the emergency which exists is at once obvious.

A program to meet these needs must include:

1. Postgraduate courses for physicians already engaged in the treatment of cancer. This work must include courses in tumor pathology to render pathologists more competent in the interpretation of early and borderline tumors and cancers. It should also include courses to these in charge of x-ray and radium treatment in various hospitals in order to familiarize them with the rapid advance in the use of these agents. There is an increasing demand on the part of the pathologists and radiologists for postgraduate opportunities.

I. *The training of cancer specialists.* This is best accomplished by the creation of fellowships for special training of young men with exceptional qualities and possibilities as cancer specialists. The Rockefeller Fellowships established in 1926 in the Memorial Hospital are an excellent example. There are many brilliant and promising young physicians in this country keenly interested in the cancer problem seeking opportunities in this field. Available fellowships do not begin to meet this demand.

Research. Cancer research may be divided broadly into two categories: clinical research and experimental research.

Clinical Research or the investigation of cancer as it is seen in the patient, includes also laboratory research undertaken to solve practical problems in diagnosis and treatment. Examples of clinical research are statistical studies upon such questions as heredity, efforts to devise diagnostic tests for early cancer, and the development of principles and technique of the application of x-rays and radium. This last type of research has already fully proved its value by the practical contributions it has made to the curability of cancer.

Experimental Research is concerned with an investigation of the nature and underlying causes of cancer. Although we are in possession of considerable data relating to the contributing causes of cancer the ultimate cause of this disease remains an unsolved mystery. This type of research, dealing as it does with the fundamental problems of causation, is wide in its scope. It must necessarily extend into the domains of physics, chemistry, and biology. The program must be long-ranged. It must be undertaken only with the understanding that progress may be slow, that the ultimate solution may be distant but that each truth established may be the very link needed for the final solution of the problem. This type of basic research must go hand in hand with clinical and pathologic research and must be conducted in an institute where adequate clinical material is available. It is essential that both branches of research be pursued simultaneously and in close co-operation, for each stimulates and helps the other.

Principles of Organization. Three circumstances have combined to stimulate interest in special institutes.

1. Renewed interest and activity in the cancer problem, resulting from recent progress in the field of cancer.

2. Urgent need of a cancer institute planned and organized upon a conception essentially different from existing organizations and in keeping with the present state of the cancer problem.

3. The availability of some of the recognized authorities of America and Europe to participate in this undertaking—a unique and unparalleled opportunity created by the unsettled European situation.

It should be the dominant spirit of such institutes that all considerations be submerged in favor of the purpose of the organization, namely, *unhampered and unrestricted opportunity for freedom of thought and action in all scientific endeavor*. In order to accomplish this purpose the organization must be based upon the following principles :

1. The institute must be completely equipped and adequately endowed in order that the cancer patient may be given the benefit of the latest developments in x-ray and radium technique and that further developments in technique may be possible and in order to permit the upkeep of equipment and adequate personnel necessary for clinical radiotherapeutic investigations and research.

2. The organization must be small but perfect. It must recognize the unhappy effects of size which carry in their wake the complications of overgrowth and over-organization which so often stifle a defeat the very purpose for which an organization is intended.

3. The staff of the institute must be chosen with the realization that upon this selection alone depends the success or failure of the project ; that neither the building nor the size of the endowment but the background, training, experience, spirit, imagination and idealism of the leaders and their associates will be the determining factors.

4. The growth of the institute must be controlled and limited solely by its scientific contributions and accomplishments.

What May Be Reasonably Expected from a Cancer Institute Organized Along These Lines ?

1. A reduction in mortality through earlier diagnosis and more effective treatment resulting from education of the public and the medical profession, the training of specialists and the development of improved diagnostic and therapeutic methods.

2. Progress in our knowledge of the nature of cancer and its causation through clinical, pathologic and experimental research,

3. A contribution to the control of cancer, if not through sensational discoveries, then by a steady increase in our knowledge in the fields of cancer diagnosis, treatment, research and education.

Illinois Medical Journal, Vol. 71, No. 5, May, 1937.

ETIOLOGY, SYMPTOMS, AND TREATMENT OF DELIRIUM TREMENS.

J. P. HILTON, M.D.

Denver.

Early in the nineteenth century, Sutton of Greenwich gave the first accurate description of delirium tremens. Since then the name has been associated with a symptom complex which arises in chronic alcoholism. The layman is familiar with the disorder and has given it descriptive names such as "the shakes" or "the snakes." "I almost had the snakes" is a reason many a toper has given for a temporary and apparently inexplicable period of sobriety. Ordinarily we recognize the condition only when the diagnosis is evident to a layman. These cases are relatively few. If minor degrees of the delirium are included, the disorder can be called prevalent.

The incidence of delirium tremens is proportionate to the abundance of alcoholic beverages. Those countries which rigorously restrict the per capita consumption of alcohol have a low rate of incidence. The contrary occurs in those countries where the consumption of alcohol is determined not by law but by a stomach's tolerance.

The primary cause of delirium tremens is the continued over-indulgence in alcohol. The delirium may arise during or after a spree, or may be preceded by trauma, infection, or shock. It would seem that trauma, infection, or shock produce a degree of mental confusion which favors the onset of the delirium. Therefore we have reason to fear operating upon a chronic alcoholic and have cause to give a poor prognosis if such an individual develops pneumonia.

The distinctive symptoms of delirium tremens are delirium-tremor, and sometimes peripheral neuritis. The tremor is generalized, coarse, and increased by effort. It is probably cortical in origin. The neuritis causes weakness and pain or numbness in the extremities. It is very likely the result of a vitamin deficiency and not due to the direct effect of alcohol on the peripheral nerves, since the chronic alcoholic neglects an adequate diet or has an alcoholic gastritis. The delirium is bizarre and kaleidoscopic. It arises from a generalized cerebral edema.

There are degrees of mental change ranging from confusion to active delirium. All are characterized by distinctive visual misperceptions which theretofore have been called hallucinations. The edema of the brain probably includes the retina where the visual misperceptions arise. If the retinal elements are spread apart the

object looks smaller. If the retinal elements are crowded together the object appears larger. This explanation would make it seem that the patient does not have hallucinations, but instead has illusions. These visual misperceptions or illusions are the basis of the mental mechanisms of the patient with delirium tremens. Probably they play a part in the mechanisms of other types of delirium.

The illusions have certain characteristics. Objects appear small and compact, or tall and thin. Sometimes they seem tenuous and gelatinous, distorted or they change in shape. In a darkened room these illusions are more pronounced than in a bright lighted room. For this reason delirious patients are quieter in a lighted room.

Because of the bizarre appearance of objects, apprehension or terror is aroused in a patient, depending on the depth of the delirium. This emotional change colors the thought content; delusional ideas of a persecutory character arise; the patient is pursued by enemies or plotted against. The deeper the delirium the more obvious the misperceptions and misinterpretations become—and in turn the more terror struck the patient seems. He restlessly paces the floor, talks and pleads with his persecutors.

The least confused patient may misperceive only a few objects. For example, one patient sought treatment because a pictured head on the wall of his bedroom appeared distorted, and gelatinous masses seemed to hang pendulously from the face. This patient perceived the picture correctly when it was well lighted, but misperceived it when it was shadowed. The moderately confused patient will misperceive many objects but may recognize friends. One such patient sat and talked with his physician and described the queer appearance of his surroundings. He would interrupt the conversation to jump to his feet, peer into a darkened room and then describe a procession of miniature animals which were emerging from the room, being guided by a dwarf, and a tall man so thin that he disappeared when he turned sideways. A shoe box and a lampstand seemed responsible for his misperceptions. The quite confused patient misperceives almost every stimulus in his environment, and only becomes quieter in a brightly lighted room. He restlessly paces and peers—the subject of terror. Because objects appear distorted they are associated mentally with whatever memory image they most closely resemble. Normally we see evidence of this association when we call a mountain “the sleeping giant” because of its contour against the sky, or a tree stump takes human form in the twilight. To the patient with delirium tremens the irregular outlines of the misperceived objects add movement to the image, and animal or human shapes often result.

Ordinarily we ignore a great many of the stimuli in our environment such as street noises or the furnishings of a room. Not so

with the delirious patient. Each stimulus is likely to be noticed and then misperceived. For this reason we should not carelessly say that a delirious patient is hallucinated because we do not perceive the proper visual stimulus in his environment.

In retrospect we can rationalize as follows. A floor lamp is misperceived by a delirious patient; the confused mind interprets the image by former memory images. The object resembles, perhaps, an ape. With most of us the word or thought of an ape is associated with a circus. In the delirious mind this association with a circus allows other misperceptions to become members of a menagerie. Because the misperceptions appear so strange and unlike the objects they are taken to be, the emotional state becomes one of fear. This affect in turn influences further association of ideas so that the patient's mind, in order to explain the peculiarities of his environment, evolves a plot which is directed against him. He is pursued by strange creatures, is terror struck; refuses food and water because he believes it to be poisoned; begs for mercy, offers bribes, paces the floor. In short, he presents the picture of abject terror plus extreme physical restlessness.

Unless interrupted this physical restlessness may lead to collapse and death. Treatment must be prompt. Sleep should be induced immediately. The drug of choice is paraldehyde in doses of three to six drams. This drug is safe in these large doses since it stimulates the circulation and respiration. As soon as the patient is asleep a spinal puncture should be done, and twenty to fifty cubic centimeters of spinal fluid should be withdrawn in order to relieve the cerebral edema. Ordinarily I use a 22 gauge spinal needle. Through this needle, with the patient lying on his side, the spinal fluid normally flows eight to ten drops in fifteen seconds. The rate of flow can easily be timed with the second hand of a watch; and when reached we know that the spinal fluid pressure has been reduced to an approximate normal. Following the administration of the paraldehyde and the spinal puncture the patient sleeps soundly for four to eight hours and awakens free of the delirium, or at least oriented sufficiently so that he correctly interprets his environment and responds to nursing care, fluids, food, salines and small doses of the barbiturates. If this or a similar procedure is not carried out the delirium will persist, and exhaustion or intercurrent infection may carry off the patient.

In adequately treated cases the mortality will be about 1 per cent. In untreated cases the mortality runs as high as 12 per cent. Even with adequate treatment a few patients do not become clear mentally, delusions persist and progressive mental deterioration occurs. This unhappy termination takes place whenever there has

been an underlying schizophrenia, or the organic changes which produce Korsakoff's disease have taken place.

Following recovery from the delirium the alcoholic patient will require treatment for his alcoholic addiction. Therefore we cannot assume that the above outlined treatment for delirium tremens is the treatment for chronic alcoholism.

In conclusion it is suggested that the drainage of spinal fluid may be helpful in quieting patients with delirium due to disorders other than delirium tremens.

Colorado Medicine, May 1937.

ETIOLOGY AND TREATMENT OF CHRONIC ARTHRITIS

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Forty years ago Osler in his text on medicine spoke of chronic rheumatism and arthritis deformans—the 2 conditions we now differentiate as osteoarthritis and rheumatoid arthritis. He stated that they were incurable diseases, of obscure etiology and recommended rest and hygienic measures only for their relief. Despite the fact that these forms—especially the rheumatoid type have increased alarmingly in incidence—or recognition since his statement—until recently we have still floundered around in the dark in their treatment. We can not be certain that we are on the right course even now, but recent bacteriologic, roentgenologic and pathologic advances have pointed the way to what appears to be a rational conception and treatment based upon etiologic findings.

As late as 1930 the Committee for the Control of Rheumatism reported that they were not yet ready to classify the different diseases spoken of as rheumatic because they were not satisfied as to the etiology of the different forms. Volumes have been written since that date, particularly in regard to what we now call rheumatoid arthritis, and it is only proper that a disease that ranks with tuberculosis and cardiovascular disease as a disabling state should receive the combined attention of research laboratories and clinicians. It was not until early in 1932 that the following classification, based upon etiology, was accepted by those men and clinics of this country who were solely or largely interested only in arthritis:

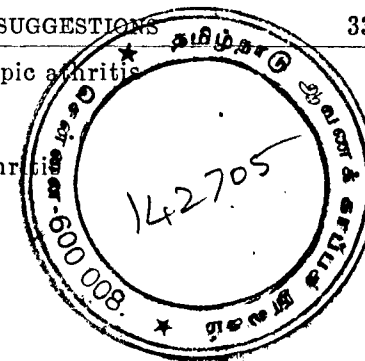
1. Infectious
 - a. rheumatic fever

- b. rheumatoid arthritis-atrophic arthritis
 - c. specific arthritis
2. Degenerative
 - a. osteo or hypertrophic arthritis
3. Allergic
 - a. serum sickness
4. Traumatic
5. Metabolic
 - a. gout
 - b. scurvy
 - c. ricketts
6. Neurologic arthropathies, Charcots, hemiplegic, syringomyelia.

In this paper I am interested only in those 2 most common forms seen in the southwest—namely—osteoarthritis and rheumatoid arthritis.

Osteoarthritis - hypertrophic arthritis: This disease I shall dismiss with a few words. It is found chiefly in the fifth and later decades of life and usually in well nourished individuals. It is essentially a senescent disease and presents the picture of a degenerative process likened to gray hair and arteriosclerosis. No definite etiology is known but Dr. Francis Hall has advanced the theory of endocrine dyscrasia. He has found that in a series of over 100 cases the basal metabolic rate was below 10 in 50 per cent and below 15 in 34 per cent. Treatment with thyroid gland was of permanent benefit in 49 per cent of those cases. It will be remembered that most of those suffering with the degenerative type are well nourished or obese. He accounted for low metabolic rate encountered in the rheumatoid arthritics as due to malnutrition and depletion and thyroid treatment was of benefit in only 16.5 per cent. Physio-therapy and orthopedic treatment offers some relief in selected cases. Its course is progressive with advancing age as in other degenerative conditions.

Rheumatoid arthritis: For many years first one, then another investigator has isolated what he has considered the specific germ of this condition. These bacteria have been recovered from the nasal sinuses, tonsils, teeth, intestines, lymph nodes, blood stream and affected joints. The confusion produced by the multiplicity of findings has led to the acceptance of none by the majority of clinicians. Improved cultural methods, however, have in the last 3 years led to the finding of a faintly hemolytic streptococcus in material taken from affected joints and the blood stream in an increasing number of cases by clinics working independently of each other. Cecil, Nichols and Stainsby in 1929 first published their findings of 62 per cent positive blood cultures and 67 per cent positive joint cultures in rheumatoid arthritis. Their culture methods were assailed however,



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and only in the last 2 years has there been built up a mass of confirmatory evidence to sustain their conclusions. Then in 1932, 8 investigators in a total of 736 cases recovered the streptococcus from the blood in nearly 43 per cent and from the joint fluids in 33.7 per cent. Since that report many others have confirmed the findings with even higher percentages with still more simplified cultural methods. It is due to these reports, together with the experimental results obtained in laboratory animals inoculated with these germs that the same men who in 1930 were not ready to classify rheumatoid arthritis as to etiology today place it in the list of infections. Furthermore, an increasing number of investigators place the blame upon a streptococcus which is usually faintly hemolytic but possibly transmutable on occasion.

Treatment: The medical profession of the southwest—and of Arizona in particular—has, each year, seen an increasing number of hopelessly crippled arthritics dumped upon us. Who of us can deny that we have dreaded, in the past, to see such patients hobble into our reception rooms? Despite the pecuniary possibilities—if present—and most of these patients had none by the time they were sent us, we would willingly have referred them to our worst enemies for the simple reason that we could do so little to alleviate their distress. Do we still feel this way or do we now welcome them as we have learned to welcome the tuberculous, because we can hold forth some hope that improvement will be the lot of a large percentage? Perhaps I am too optimistic; but I must admit that my attitude has completely reversed within the last 2 years; what can we do for them?

Rest: Just as it has taken many years to teach the medical man as well as the public the benefit to be derived through rest in tuberculosis so it will take the same constant reiteration to teach both the value of rest in arthritis. Our problem may be more difficult because we cannot stress the alternative of death or cure as we can in tuberculosis. I am not so sure that the choice of alternatives in arthritis is to be preferred. Modified and controlled rest will certainly do much toward affecting relief in the arthritic.

Drugs: Of the hundreds of heralded cures and reliefs with which the pharmaceutical houses flood the literature and our offices I have yet to see one live up to its promises. In my experience acetyl-salicylic-acid or amidopyrin top the list of palliatives. There is certainly no specific drug.

Diet: It has been clearly established that a highly nutritious diet low in carbohydrates is beneficial to these sufferers. Proteins and fats must supply the necessary calories. These patients are frequently undernourished—very possibly because of an insufficient vitamin consumption. Those oils and food supplying A and B in greater quantities are indicated.

Heliotherapy: No doubt this treatment has its usefulness in the management of these cases. Its value probably lies in its tonic effect upon the general system in building up resistance to infection, rather than in any specific effect it has upon the affected joints. The same care must be observed as when used in treating tuberculosis.

Physiotherapy also has its place in our armamentarium. The increase in circulation of stiff and swollen joints is undoubtedly not only soothing but locally beneficial. Massage and managed exercise are also of value.

Elimination: I believe that this factor in the care of arthritics is usually slighted. By proper dieting and massage and the proper use of catharsis when necessary a great deal can be done to relieve our patients. The removal of a focus or foci of infection have in most instances been diligently searched out and removed long before the patient is advised to go west. The intestinal tract, however, may be, and in many instances is, the cesspool which for years has been fed by the springs of tonsillar, nasal or alveolar infection and has in its turn become the happy resting place of the ubiquitous streptococcus. If there is anything in the allergic theory of arthritis then, in my opinion, the allergen hides here. Don't ask your patients in an absent minded way if their bowels are alright; see that they eliminate properly, and you will have done them an immense amount of good.

Surgery: Much can be done by the orthopedist towards correcting deformity and producing deformity for the comfort of the patient. An artificially and permanently ankylosed painless joint is frequently preferable to a painful moveable one—both in comfort and in use.

Vaccine Therapy: It is only natural that when a causative organism for a disease has been found a therapeutic vaccine or serum should follow. We cannot yet be certain that the streptococcus is the cause of rheumatoid arthritis; but the weight of evidence in its favor is preponderating and vaccines have followed. Cecil and his co-workers, Wetherby and Clawson, Gray and Cowan, Berbank, Pemberton, and many other well recognized authorities have reported their results from the use of vaccines made from streptococci recovered from the blood or joints of arthritics. Each month the list of users and reported successes grows. If 3 years ago I felt more or less helpless in the care of an arthritic, today I feel confident in about the same degree that I can help him. It is the only addition to our inadequate forces; and it promises much. Vaccines have been used for too short a time to state that they are curative. Many clinics, however, report excellent results as measured by relief of pain, increase in function of affected joints and decrease in swelling of these joints—all brought about by the use of streptococci

vaccines. Most clinicians use the intravenous method of administration; beginning with very small doses, increasing at weekly intervals and avoiding reactions.

My experience with this method of treatment: dates back to January 1932, when I obtained my first positive blood culture from a case of chronic rheumatoid arthritis. In November 1931 Gray and Gowan of the St. Barnabas clinic for arthritis, Newark, N. J., by a slight change in method shortened the cultural time of Cecil from 4-5 weeks to 3-6 days. This made it available to all of us, and the Pathological Laboratory undertook to help me. My first attempt resulted in a positive culture and from that growth a vaccine was made. The patient was under treatment about 3 months and then stopped because she claimed to be cured. Her weight and general health improved concurrently with the decrease of pain and swelling and increase of movement in affected joints. Since that first case I have had an opportunity to treat about 20 other patients—10 under treatment at this time. I have had one frank failure after an initial startling improvement in a very severe case, and one early failure in a questionable diagnosis and improperly worked up case. All other cases have been greatly benefited and several will not stop treatment even though I have requested it. They are afraid of recurrences.

Let me explain what I mean by an improperly worked up case. We have at our disposal a number of laboratory methods, all of which should be used in the diagnosis, and management of a case of arthritis under vaccine treatment. The drawback to this procedure is the cost. By the use of these laboratory procedures we are able not only to make a more exact differential diagnosis of rheumatoid arthritis but also to check our clinical results with the test tube. I believe that when we are considering the treatment of a case of arthritis we should first of all make certain that it is of the atrophic rather than the hypertrophic type. An x-ray will in many instances help to differentiate those cases that are not clinically evident. Of more importance, however, is the agglutinating titre of the patient's serum toward the "typical strain" streptococcus. Different observers report agglutination in dilutions of 1 to 640 or higher in from 60 to 95 per cent of rheumatoid arthritis' serum. Serum from osteoarthritis patients is practically always negative. In my more recent cases I have obtained agglutinations up to 1 to 400 dilutions against the typical strain streptococcus while these same serums failed to agglutinate several other varieties of streptococci from their own or other throats. During the course of treatment the titre rises rapidly in almost every instance in which the symptoms improve. If the treatment fails to help the titre also fails to improve and treatment may be discontinued. In other cases, improvement finally comes to a standstill and the titre gradually drops.

The sedimentation test is also useful, not only in diagnosis but in measuring the progress with treatment. Nearly all rheumatoid arthritis with symptoms of activity show a sedimentation rate exceeding 30 mm. in one hour—many more rapid than this—whereas osteoarthritis seldom varies from the normal rate. If treatment is helping the patient we have a periodic check and a reliable prognosis based upon the approach of the rate back toward normal. One other laboratory examination is useful. In osteoarthritis the nonfilament cells run to a normal percentage, while in atrophic arthritis there is a marked increase in this type of cell in 50 to 80 per cent of cases. As the patient improves the count again approaches normal and here again we have a diagnostic and prognostic aid. Lastly we should take blood cultures in all cases, and joint fluid cultures when feasible. You will frequently be successful in recovering the streptococcus from one or the other source, and when after having a vaccine prepared you see the oft times remarkable improvement in your patient following its use you feel as I now do—unafraid to receive the rheumatoid arthritis in your office and may say to him, "I think I can help you."

Since the above paper was written, I have treated some 25 patients with intravenous vaccine with great improvement except in very few cases. Some have not remained under treatment long enough to judge the results. With increasing experience I have become more and more impressed with the similarity between joint conditions and well recognized allergic reactions and am of the belief that the chronic rheumatoid type of arthritis is an allergic condition.

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TUBERCULOSIS AND PREGNANCY.

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Since the time of Hippocrates, it has been claimed that tuberculosis improves with pregnancy. There have been periods when marriage with subsequent pregnancy was actually recommended for tuberculous girls. While many tuberculous patients appear to improve throughout pregnancy there seems to be a tendency toward the aggravation of mild tuberculosis, or the activation of a dormant or previously unrecognized tuberculosis during the first 3 months of pregnancy.

At present, there is a great difference of opinion existing as to the influence of pregnancy on tuberculosis. Most obstetricians think it aggravates the disease, but internists disagree. Robinson, from a questionnaire answered by 200 tuberculosis specialists in Great Britain and abroad, learned that "all deny that pregnancy benefits tuberculous gravidae, 75 per cent. state that pulmonary tuberculosis is aggravated by pregnancy, latent infections activated, quiescent lesions lit up, active foci made more active." Matzgar states that "in true incipient cases practically without symptoms pregnancy will light up the active disease in 3 per cent. of cases. In healed tuberculosis, even of long standing, the outlook is not good. One pregnancy can be tolerated by 50 per cent. a second pregnancy is most likely to aggravate the tuberculous condition; a third pregnancy may result in death. In active tuberculosis with only moderate involvement, 75 per cent. of cases are made worse by pregnancy, while in advanced active cases 90 per cent. die during the puerperium."

Ornstein and Kovnat, in a study of a large number of cases at the Sea View Hospital in New York City, have come to the conclusion that the bad prognosis did not depend on the pregnancy but on the character of the pulmonary tuberculosis. Their classification of tuberculosis is qualitative rather than quantitative and they found that all their deaths were in the caseous-pneumonic group.

After reading the unfavorable prognosis given by most authorities, one shudders at the idea of caring for or having to manage a case of pregnancy complicated by tuberculosis. Because of the newer concept of the treatment of tuberculosis and the continued favorable reports on cases treated by collapse therapy, I believe that pregnancy complicated by tuberculosis need not of necessity hold the bad prognosis it once did, but might even be looked upon as a help in ultimately curing the tuberculosis.

The treatment of tuberculosis with pregnancy naturally resolves itself into 2 main groups, *i.e.*, preventive and active. Under preventive treatment most authorities will agree that tuberculous women should not marry, at least not until definitely proved to have been arrested for at least 2 years, and for those who are already married, avoidance of pregnancy for at least 2 years after definitely arrested. Modern contraceptive teaching, unless contraindicated by religious beliefs, has made the avoidance of pregnancy much more possible.

For the active treatment of pregnancy complicated by tuberculosis, there is a great diversity of opinion, three positions being held. First, all pregnancies should be interrupted as a curative measure. Second, no pregnancy should be interrupted. Third, all cases should be individualized. The last position is the one I feel we should follow, keeping an open mind and interfering

when certain symptoms indicate. There are, I believe, definite indications for abortion, such as fever, wasting, many tubercle bacilli in the sputum, hemoptysis and advancing consolidation, tuberculosis with hyperemesis, and laryngeal tuberculosis in early pregnancy.

The ideal method of handling pregnancy with tuberculosis is advising and carrying out sanatorium treatment as early as the diagnosis is made. If, after 6 weeks to 3 months of sanatorium regime, there is definite spread or increase in symptoms and physical findings, an abortion should be performed. If on the other hand the patient has remained stationary, or has improved, she should be allowed to go to term.

Both the fields of tuberculosis and of obstetrics are too large for one man to attempt to cover adequately or well. For this reason, no obstetrician should attempt to handle a case of tuberculosis with pregnancy by himself. A man well trained in the field of tuberculosis should be in constant care of this type of patient working in close co-operation with the obstetrician.

Previously the recognized treatment of tuberculosis was purely medical, consisting chiefly of bed rest, fresh air, and proper food. Now, however, in modern institutions about 80 per cent. of patients receive some sort of collapse therapy, permitting physiological rest of the diseased area. The surgical procedures most commonly used are pneumothorax, phrenic nerve interruption (temporary) and thoracoplasty.

The improvement often noted in pregnant women with tuberculosis may be compared with that noted in patients with ascites or large abdominal tumors. X-rays taken of patients with these conditions show that there is definite rise of the diaphragm corresponding to that seen with phrenic nerve interruption and in those patients who have been given pneumoperitonum as an aid in splinting the diaphragm. It has also been apparent from fluoroscopic examinations of patients in all stages of pregnancy that with the rise of the fundus the excursion of the diaphragm becomes progressively less. From these facts we may deduct that when pregnancy is apparently beneficial to tuberculosis that benefit is being derived from the physiological rest caused by elevation of the diaphragm. Likewise, the rapid increase of the disease in tuberculous women during the puerperium may be explained by the sudden withdrawal of beneficial effect due to elevation of the diaphragm.

The management of labor and the puerperium of tuberculous women is probably the most important phase of all. During labor all efforts should be directed toward making the first stage as easy as possible. As soon as the second stage has been reached the baby should be delivered with forceps, using preferably parasacral anesthesia. I feel it is definitely contra-indicated to ask the tuberculous

patient to "push" at any stage of labor. Hemorrhage should be reduced to a minimum. Within 24 hours following delivery some form of collapse therapy should be instituted, pneumo-peritoneum being the methods of choice; the collapse should be maintained as long as deemed necessary by the consultant; in this way the most serious complication of pregnancy can be overcome.

Summary: Pregnancy is a serious complication of tuberculosis.

Sanatorium care is important especially during early months.

Pregnancy, due to its effect on the diaphragm, may be an aid in curing tuberculosis.

Collapse therapy during the puerperium is definitely indicated.

A tuberculosis specialist should be in consultation constantly through pregnancy, labor and puerperium.

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THE USE OF SULFANILAMIDE IN THE TREATMENT OF GONORRHEA.

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The substance Sulfanilamide, which is the name adopted by the Council on Pharmacy and Chemistry of the American Medical Association for para-aminobenzene-sulfonamide, was first brought to my attention about the middle of December, 1936, through a thrilling report before this Society of its use by Dr. Prentiss Willson in a case of pelvic infection and septicemia with *Streptococcus hemolyticus*. The following day I observed the effect in a case of meningitis following mastoiditis, in which the same organism was the offender. Since chemotherapy has long been a strong arm in the treatment of infections of the genito-urinary tract, Dr. J. M. Fadeley and I investigated the substance with the idea of using it in the treatment of gonorrhea.

It was decided that a group of 100 cases of all degrees and stages of infection with the gonococcus were to be accumulated and at the end of that series an evaluation made of the results and effects obtained. This series began on December 21, 1936, when the first case was treated, and ended May 1, 1937. The following report is a preliminary one, setting forth only the gross observations, the more technical ones to be reported later.

In all cases smears of the urethral discharge were made by two or more examiners in order to verify the diagnosis. The urine

examinations were made in the 2-glass test, supported by the microscope. The cases were divided for purposes of convenience into new and old infections instead of acute and chronic.

New cases are those which were seen within 2 weeks of the onset of urethral discharge, and consisted of both previously treated and untreated cases. Old cases are those which have had their infection for 2 weeks or more, and all of these previously had the conventional varied treatment for gonorrhea. Of the new cases 75 per cent showed pus in both glasses and varying degrees of mild prostatitis. Nearly all of them had burning and discomfort on urination.

All of the old cases had pus in both glasses and a varying degree of prostatic infection, from moderate to severe, besides the urgency, frequency and burning on voiding which is associated with inflammatory processes of that part. No case developed epididymitis. Two cases arriving with epididymitis promptly subsided in less than 48 hours, beginning to do so in 24 hours with disappearance of pain and swelling.

It was interesting to note that although several cases showed no response to treatment with Sulfanilamide so far as the clinical evidence was concerned, they did not show, on the other hand, any tendency to get worse and remained stationary. It was felt that perhaps these cases were destined to be of that fulminating severe type in which, regardless of the physician's best efforts, all of the complications would perhaps follow, but that some protection was offered by the chemical agent. Associated with the administration of Sulfanilamide were observed a long list of by-effects, chiefly a profound weakness and fatigue, indescribable epigastric sensations called "indigestion," not associated with nausea or vomiting. Several persons described a sensitiveness of the skin of the lower extremities, and one of these very definitely insisted that there was a marked slowing of and loss of force to the urinary stream. In this patient the skin sensation of the lower extremities was very marked, associated with a "tingling" of the toes. All of these and other minor side-effects disappeared in from 24 to 48 hours after discontinuance of the agent. We were unable to recognize any external or gross evidence of methemoglobinemia or sulphemoglobinemia. The time of onset of these symptoms varied, but most cases began to complain when they had taken between 60 and 80 grains. In no case was the patient prepared for these symptoms by suggestion, the report being purely spontaneous in each case.

An observation of great interest was that it became possible to predict the cases in which the result would be successful. Those who complained early and bitterly of the side-effects gave the best response to the treatment, while the cases which are counted as failures apparently had a great tolerance for the drug or did not

react to it in that yet unknown manner by which it produces its best effect.

Many detailed observations remain to be interpreted. The time of recovery might in many cases be even more rapid than we know, since it has not yet been accurately determined when treatment should be safely discontinued. One case cleared in 24 hours and medication was discontinued. The gonococcus-laden urethral discharge recurred within the next 12 hours. Treatment was resumed for a second 24 hours and the patient has remained 'cured' for 3 months. The patients were not seen every day, there being an intervening day between visits. Symptoms of dysuria and other urethral and bladder distress ceased in 12 to 24 hours.

Of the new cases having a clear second glass of urine and no prostatic infection all were free of urethral discharge with a pus-free urine in the first specimen microscopically in 24 hours except one case. This case became one of the most intractable cases I have seen for a long while, although there have been no complications. All of these cases have remained pus-free from $4\frac{1}{2}$ months to 2 years. Many of them complained of severe urethral itching for several days after treatment had ceased, but this was promptly relieved by the methods employed to determine the cure. In 1 case in this group recurrence followed discontinuance of treatment, but response was prompt in another 24 hours and recovery ensued.

The new cases in which there was pus in the second specimen and mild prostatitis showed the usual prompt relief of symptoms and simultaneous clearing of the second specimen within 48 hours. The first specimen cleared gradually over the following 48 hours and in most instances was clear and remained so in 5 to 7 days. One patient in this group became progressively worse and after 6 days did not return, and a second one resisted treatment and has joined the ranks of the failures. The prostatic infection in all of these cases disappeared promptly and required no additional treatment. Although some of the cases in the group called old cases responded more slowly, most of them showed the same startling behavior as the previous group, such as subsidence of symptoms, clarification in second-glass test and cessation of urethral discharge. If the treatment was at all successful the urine became crystal clear in both glasses within 10 days in the longest case and 5 days in the shortest case, by the same criterion. There seems to be a tendency to carry a few shreds in the first specimen for several days after clarification and residual pus in the prostate from 1 plus to 2 plus. This, however, soon disappears on follow-up treatment designed to overcome it.

Seven cases of the old-case group have defied treatment and refuse to respond to any treatment.

Of the 40 cases of group 1, the new cases treated with Sulfanilamide, there were 3 cases, or 7.5 per cent, in which the treatment

failed. In group 2, or the old-case group with 60 cases, 7, or 11.5 per cent, failed. The average length of time for a clinical recovery was 5 days. In other words, 92.5 per cent of the fresh cases and 88 per cent of the previously treated cases recovered.

The treatment consisted of the administration of 40 grains of Sulfanilamide daily, 10 grains after each meal and 10 grains at bedtime. Twenty-four tablets were prescribed or enough for 3 days from which no serious side effects were expected, and the patient was seen every other day, at which time a complete check-up as to urethral discharge, urinalysis, prostate and general symptomatology was made. When indicated, at the termination of the use of Sulfanilamide, a few of the conventional genito-urinary treatments were given to clarify the residuals. The criterion for cure was the disappearance of microscopic pus from the urine, absence of pus from the prostate gland, loss of all symptoms and the failure to produce a recurrence. It is, of course, impossible to say whether or not any of these cases will eventually light up again.

It frequently happens when a new drug is introduced into medicine that it is abused by indiscriminate use before the full force of its power is recognized. Sulfanilamide is well on its way to produce much harm, as well as benefit, unless those who have to do with dispensing it adopt some measures for its control. The literature already is filled with reports of its side-effects. It was at first believed to be nontoxic, but with the great increase in its use, reports have shown that it should be used with caution. Since it will probably come to be used universally for the treatment of gonorrhea, one can readily visualize its uncontrolled abuse because of the advice one patient with gonorrhea passes to a fellow-sufferer, because of nation-wide publicity given the preparation under trade names, and because of the ease with which it can be purchased from any drug store counter without a prescription. Fancy the outlet through unethical pharmacies of this very useful but hazardous drug to people having gonorrhea; the criticism of the medical profession if some one should suffer great physical harm and perhaps death as the result of the use of Sulfanilamide. The cyanosis of sulphemoglobinemia is in itself not alarming since it quickly disappears on discontinuing the drug. However, if the total hemoglobin in a case of sulphemoglobinemia should fall below 30 per cent, the situation might prove serious. This condition in an uncontrolled patient will probably not be recognized by the patient and his illness most likely will be blamed for his ill-feeling, rather than the medicine which he is taking for it. If he then continues to use it the hemoglobin will be further reduced. It has been reported that during the administration of Sulfanilamide, magnesium sulphate by mouth or even wet dressings may predispose to sulphemoglobinemia.

SUMMARY

The use of Sulfanilamide in gonorrhea gives promise of being the first satisfactory treatment for that disease. Its effect is rapid when effective, and it has been successful in producing at least a clinical recovery in 90 per cent of our test series of 100 cases. It would seem that it is effective in inhibiting the complications of gonorrhea as well, and it may lend itself to the actual treatment of its complications and sequellæ.

In our second series which was begun on May 1, 1937, 1 case of arthritis of gonorrheal origin has shown astonishing improvement.

From our observation the result of the treatment is almost predictable by the degree of disagreeable effects produced by the drug.

It is well to advise the patient against the use of magnesium sulphate during treatment.

The uncontrolled use of the drug in gonorrhea is associated with great hazard. Because of the wide publicity given it in newspapers and periodicals in connection with streptococcus infections, the various trade names are quickly recognized on the prescription. It can be bought indiscriminately at any pharmacy and used without control. Until such a time when proper steps shall have been taken to protect the public from its harmful effects it rests with the medical profession to bend every effort to assume that duty. This can be accomplished by placing on the prescription the words "Do not refill." The use of Sulfanilamide in our cases may have been continued somewhat longer than was necessary. This was because we did not have the experience to know when to consider the case terminated.

Medical Annals of the District of Columbia,
Vol. VI, May 1937.

Extracts.

BOILS AND CARBUNCLES.

(J. FRASER: *Practitioner*. 1936, cxxxvi. 350.)

Heat should be applied in the form of antiphlogistine placed between two layers of gauze $\frac{1}{4}$ of an inch thick raised to a temperature as high as can be borne. The skin around the boil is washed with alcohol and a small amount of 2 per cent ammoniated mercury ointment is rubbed into the part. When the slough has separated the granulation cavity is drained with eusol or a solution of ammonium acetate. Boils of a subacute type should be treated by the following ointment: Phenol 1 per cent, camphor 3 per cent, salicylic acid 2 per cent, vaseline to $\frac{1}{2}$ ounce.

It is advantageous to arrest a boil in the early stages by inserting carbolic acid on a sharpened mach-stick into the centre of the boil. Ultra-violet rays are applied by a lamp placed 4 feet from the skin for 3 minutes each day. X-ray treatment is given daily for periods of 2 minutes. Autohaemotherapy does not give uniform results. In vaccine therapy variable results are obtained. A staphylococcus toxin to which formalin has been added and a vaccoid, i.e., a combined vaccine and toxoid, have recently been prepared. In children a weak solution is indicated (five times less powerful than for adults). The dose is from 0.1 to 1 cc. As regards drug treatment, stannoxyl and manganese butyrate by intramuscular injection preferably are favourably mentioned.

In the treatment of carbuncle auto-haemotherapy is advised in the early stage, the injection being made at any point in the neighbourhood of the lesion after the usual cruciform incision has been made and the necrotic tissue removed, by the scissors, scalpel or endothermy. The wound is dressed with acriflavine (1 in 100) in liquid paraffin, an outer dressing of dry sterile gauze applied. This is left on for 48 hours. Subsequently the surface is dressed with cod liver oil until granulations are plentiful and sepsis arrested.

SCIATIC PAIN AND ITS RELIEF BY OPERATIONS ON MUSCLE AND FASCIA.

ALBERT H. FREIBERG. *Archives of Surgery*, xxxiv, 337, Feby. 1937.

When the piriformis muscle is under tension it can, through its continuity with the fibers that make up the sciatic nerve produce a sciatica. The tension may result from muscle spasm incidental to disease of the sacro-iliac joint (which it bridges) or to disease of the muscle itself. The positive response in the Lasague test and the symptomatic relief obtained by subperiosteal stripping of the gluteus maximus or by fasciotomy of the fascia lata can be traced to changes in the tension of the piriformis. In addition to this, section of the piriformis, an operation which more directly attacks the cause of the sciatica, has been tried and found successful. Although only three such cases are reported, it is implied that other such operations have been performed, with satisfactory results. It is emphasized that complete studies of the factors enusing the muscle spasm are necessary before symptomatic relief may be obtained by myofascial operations which release the piriformis tension.

TONSILLECTOMY AS A CURE FOR PERITONSILLAR ABSCESS.

FOREST W. MERCIA, LAKEWOOD, OHIO. *Archives of Otolaryngology*, May, 1937.

The removal of the tonsil in case of peritonsillar abscess is not advocated generally by American laryngologists. In many foreign countries this is a routine procedure and their reports show that this is not attended by the complications that Americans believe exist.

Reports of the experiences of other authors who do a tonsillectomy at this time are reviewed.

The inadequacy of the routine treatment of peritonsillar abscess is discussed. The incision frequently has to be reopened every day or so until the drainage has stopped, in the meantime the pain, temperature and difficulty of swallowing continue.

As the author states, pain is the outstanding symptom of this disease. If a tonsillectomy is performed this is relieved immediately. The patient is unable to eat or drink for several days before the abscess is opened. Immediately following the tonsillectomy the patient is able to take nourishment better than he has for several days and as a result the general condition is improved.

A rational surgical procedure, says the author, is the removal of the tonsil at the time of the formation of the abscess. The anatomy is given: muscle on three sides of the tonsil; anterior is the palatoglossus muscle; posterior palatopharyngeus muscle; external is the superior constrictor muscle of the pharynx. Separation from its bed occurs more easily in the upper half of the fossa and this is the site most frequently of the peritonsillar abscess.

In removal of the tonsil the protective wall of infiltration in the tissues is not disturbed. If the operator is careful the infection is not any more liable to spread than by simple incision. He tries to free the upper portion of the tonsil before the abscess is ruptured. The majority of his cases had nitrous oxide and ether anaesthesia. Electrocoagulation is used to control the bleeding. About the same time is required for healing as in an ordinary tonsillectomy. The technic of the operation is given in detail.

Twenty-one cases constitute the basis of the article.

THE TREATMENT OF GONORRHEAL VAGINITIS WITH GONOCOCCUS FILTRATE.

A. J. WHITEHOUSE. AM. J. OBST. & GYNEC., *St. Louis*. March 1937.

Because of the unsatisfactory results of local treatment in cases of gonorrheal vaginitis in the children's clinic in Houston, Texas,

the matter was taken up in the gynecological section of the venereal disease clinic. Results are reported of a trial use of gonococcus filtrate in the treatment of thirty children.

Five patients, refractory to the filtrate, are receiving other treatment. Thirteen patients did not receive adequate treatment. Twelve children were discharged with clinical cure and absence of bacteriologic evidence of gonococcal infections.

Data showing the age, color, sex, dosage, and laboratory tests of each of the patients cured are given in a table. The dosage varied from a 25 per cent dilution of the filtrate given once a week for a short period, to a greater dilution given twice a week. There were only two reactions—maximum temperature 101° F. and general malaise of about six hours' duration. One patient was discharged with persistent extracellular gram-negative diplococci but apparent clinical cure.

The results are better than those previously obtained in the children's clinic when local treatment was used. They are presented merely for purposes of comparison with those of other methods in the hopes of finding a satisfactory treatment of gonorrheal vaginitis.

THE CLINICAL SIGNIFICANCE AND RATIONALE OF MANAGEMENT OF TESTICULAR SWELLINGS.

EDWARD WILLIAM WHITE AND REUBEN B. GAINES. J. A. M. A. *Chicago*, April 10, 1937.

The lesions of the testicle in which there is testicular swelling include infections both primary and secondary, traumatism, and tumors of all types. The pathologic conditions that may simulate a testicular swelling are certain epididymitides, hydrocele, hematocele, infections and tumors of the cord and testicular tunics. The true swelling mostly associated with tumors is generally observed in adults.

In a testicular swelling not associated with tumor and due to syphilis, testicular sensation is lost; the consistency of the swelling is often hard and solid in early syphilis, approximates the size of a pullet's egg, may be ovoid, globular or pear shape, and its weight appears light. The spermatic cord is rarely thickened and the layers of the tunica vaginalis may sometimes be felt by palpation. A positive Wassermann reaction is not diagnostic; however, other things being equal, a testicular swelling due to syphilis ought to diminish in size after from 4 to 8 weeks of intensive antisyphilitic treatment.

A malignant tumor of the testicle and syphilis of that organ may co-exist; the testicle and epidymis may be distorted by masses of tumor tissue which closely simulate gummatous lesions of the testicle.

Case Report.

TWO CASES OF CHANCER OF THE URETHRA IN WOMEN.

R. ZORN AND R. BURGUN. BULL. SOC. FRANC. DE DERMAT. ET SYPH. *Paris*. December, 1936.

Chancres of the urethra are rare. The authors have recently seen two cases in women, which they describe.

The first patient was a woman of 26 who one day discovered a hard, painless enlarged gland in the left groin. About the same time she began to have pain on micturition and terminal hematuria. She went to a physician who found an induration near the meatus. The Wassermann reaction was negative and she was treated for cystitis. She did not improve and three intravesical injections were made which were very painful. The meatus of the urethra became swollen and the whole region was painful. Micturition was very painful and she suffered from pollakiuria. She came to the authors for examination. They found a superficial ulcer on the right lip of the meatus; all the meatus and the lower part of the urethra were indurated, being of almost cartilaginous hardness. There were typical enlarged glands in the groins. The diagnosis of chancre was evident and it was confirmed by laboratory examinations; ultra-microscopic examination showed treponemata and the serologic reactions were strongly positive.

The second patient, pregnant at term, for about a week had had a painful pollakiuria with slight terminal hematuria. She had gonorrhea and had been treating herself with urethral argyrol suppositories. On introducing one of these suppositories she had an intense hemorrhage, for which she came for consultation. The external genital organs were swollen and livid. There was a large swelling the size of a nut enclosing the meatus and the clitoris. There was an ulcer the size of a penny around the meatus and penetrating the urethra. The whole region was very much indurated and painful on palpation. There was a characteristic adenopathy in the groins; ultramicroscopic examination showed many treponemata and the serologic reactions were strongly positive. The husband was syphilitic. He had had a primary lesion two years before and had been insufficiently treated. The patient was delivered of a child who was apparently healthy but was given treatment.

These two cases are presented because chancre of the urethra is rare in women and because the symptomatology in both these cases was purely urinary—painful pollakiuria with terminal hematuria. But when the meatus was examined there was no difficulty in diagnosis.

Medical Notes and News

THE TINNEVELLY DISTRICT MEDICAL ASSOCIATION, PALAMCOTTAH.

(TINNEVELLY BRANCH OF THE INDIAN MEDICAL ASSOCIATION)

The Anniversary of The Tinnevelly District Medical Association, has been fixed provisionally for celebration on the penultimate Saturday in January 1938. The exact date will be notified later on.

2. A Grand Medical Exhibition will be held consisting of Surgical Goods, Medical Appliances, Drugs, etc.

3. You are requested to send in your Representative with articles. *Stalls are given free.*

4. Our Annual Report is under preparation and it will be circulated among the Medical Members of the District which are about 150, besides a large number of Medical Practitioners elsewhere in India.

5. An advertisement of your Firm in this Annual Report will be very useful to you.

Rates as per follows:—

(a) Full page advertisement 7"×4" size Rs. 5.

(b) Half page advertisement 4"×3½" size Rs. 3.

I shall be very glad if you will send us your advertisement and the charges in advance before the 31st December 1937.

6. All correspondence on the subject may be sent to the following address:—

Secretary and Treasurer,
The Tinnevelly District Medical Association,
Palamcottah, Tinnevelly District,
South India.

KURNOOL DISTRICT MEDICAL ASSOCIATION.

Whether to admit doctors of L.I.M. degrees into the District Medical Association as members was the proposition discussed at the anniversary meeting of the Kurnool District Medical Association held at Kalwa 22 miles off Kurnool on 20th November 1937, Dr. Syed Gulam Hussain, District Medical Officer presiding.

Dr. S. D. John moved the resolution and Dr. S. D. Naick supported it. Dr. Joga Rao moved an amendment that only registered

L.I.M. doctors should be admitted, and he was supported by Dr. M. Krishnamurthy.

The president said that the resolution required some detailed examination and requested the association to postpone decision to a next meeting.

DISTRICT MEDICAL ASSOCIATION NILGIRI.—Major Kelly, District Medical Officer, presiding, the monthly meeting of the District Medical Association was held on 14th Nov. 1937 at the British Military Hospital, Wellington.

Dr. Nambiar read a paper on Protein Shock Therapy and Capt. R. S. Vine on "Some Refractory Cases". A lively discussion then ensued in which Dr. W. S. Martin, Civil Surgeon, Coonoor, also took part. The meeting terminated with an "at home".

NOTICE.

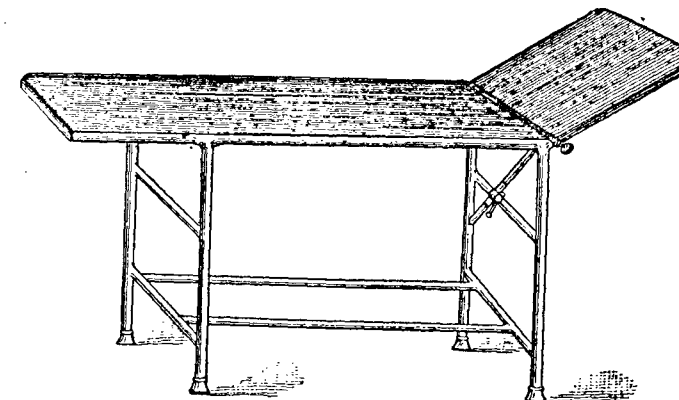
Notice is hereby given that the subject for Dr. Joseph Benjamin Prize of the value, of Rs. 35 (rupees thirty-five only) for the year 1937 is Puerperal Sepsis, its cause, Symptoms, treatment and prevention; and for the Dr. P. S. Ramachandriar prize of the value of Rs. 25 (rupees twenty-five only) for the year 1937 is cholera, its prevention, causes and symptoms and treatment.

1. All *bonafide* members of the Association can compete.
2. Intending competitors are requested to write papers from practical point and on lecture style and the same should not exceed 1000 typed lines or their equivalent.

3. The papers should be sent to Dr. Jamiatram B. Desai, President, Gujrat Branch, All Indian Medical Licentiates' Association, 52 Pritamnagar, Ellis-Bridge, Ahmedabad so as to reach him on or before the 31st March, 38.

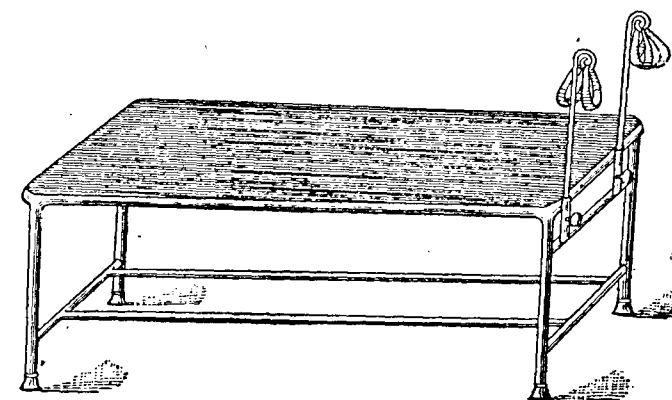
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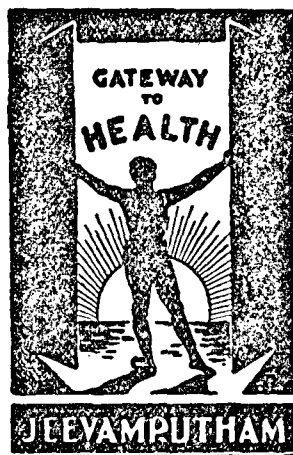
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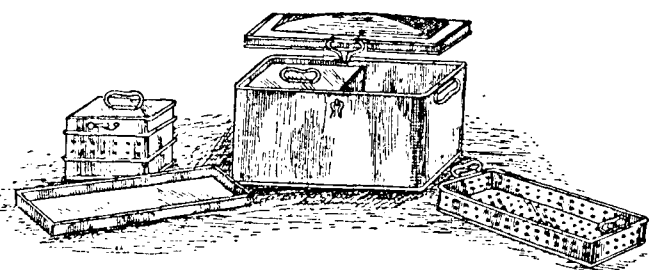
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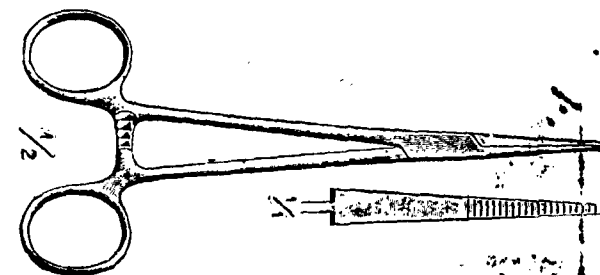


Fig. 3010.

Fig. 3010. Tonsil artery Forceps Berkets as used in General Hospital. Steel nickel plated.

Fig. 3011. Tonsil artery Forceps Berkets Stainless Steel.

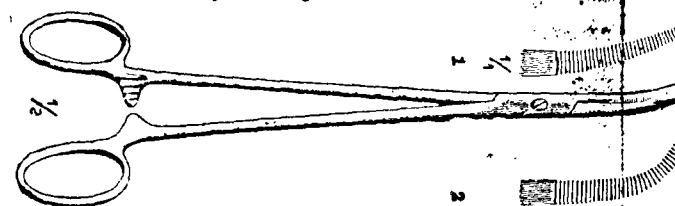


Fig. 3012.

Fig. 3012. Tonsil artery Forceps curved on flat, 1 or 2. Steel nickel plated.

Fig. 3013. Tonsil artery Forceps curved on Flat, 1 or 2. Stainless Steel.



Fig. 3014.

Fig. 3014. Tonsil Dissector, Durham, fine double ended, Steel nickel plated.

Fig. 3015. Tonsil Dissector same as above, Stainless Steel.



Fig. 3016.

Fig. 3016. Tonsil Dissector and pillar retractor, Steel nickel plated.

Fig. 3017. Tonsil Dissector and pillar retractor, same as above. Stainless Steel.

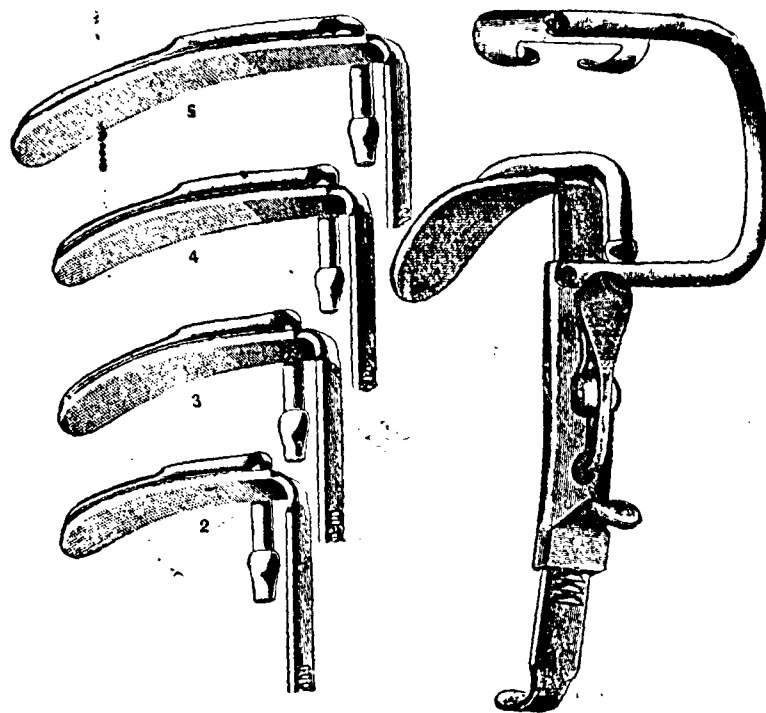


Fig. 3018.

Fig. 3018. Tonsil Dissector Forceps, Waughs—Steel, nickel plated 8" long.

Fig. 3019. Tonsil Dissector Forceps, Waughs—Stainless Steel 8" long.

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