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# MEDICO-SURGICAL SUGGESTIONS

Vol. X.

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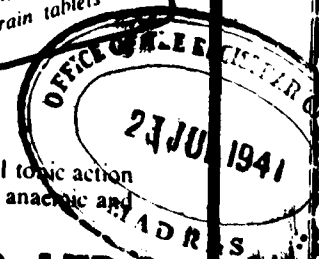
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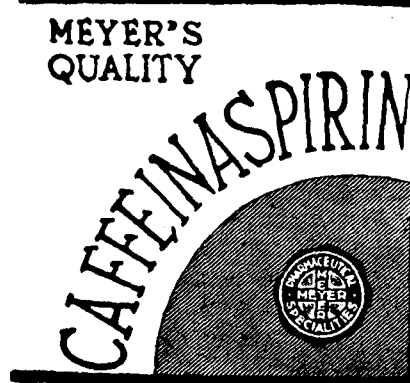
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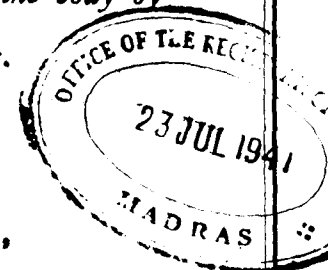
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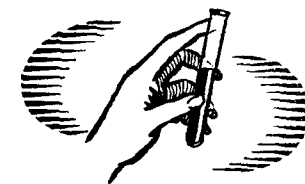
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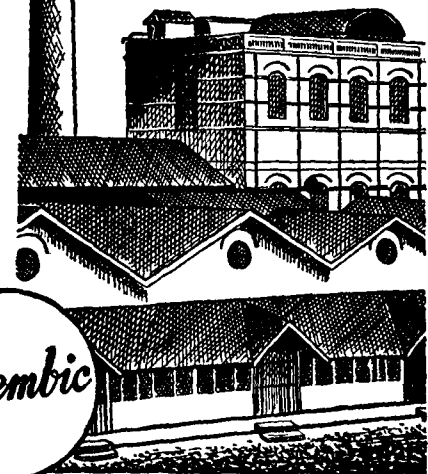
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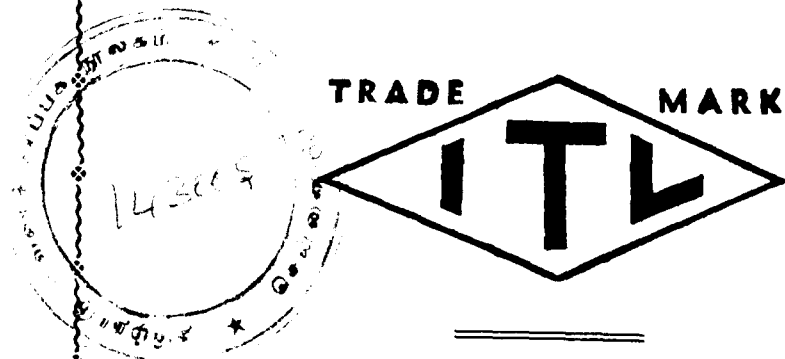
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## MEDICO-SURGICAL SUGGESTIONS

(Established 1932.)

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### IS PHYSICAL EXAMINATION OF THE LUNGS WORTH WHILE?

BY J. D. ADAMSON, PROFESSOR OF MEDICINE,  
UNIVERSITY OF MANITOBA.

There is to-day, a great variety of opinion as to the real value of physical examination of the chest. Most surgeons are ashamed to be caught with a stethoscope, and first-class clinicians have been heard to advise students to throw them away. The truth no doubt lies somewhere between the excessive veneration of the last century and the unwarranted contempt that is sometimes expressed to-day. It is with the object of estimating the practical value of physical signs that the following observations are offered. An attempt will be made to follow Addison's injunction and "strip the stethoscope of extravagant and meretricious pretensions and admit what it will not as well as what it will do."

The first service that can be done for physical examination is to simplify it by discarding all the unnecessary and confusing details that have accumulated about it in the past hundred years. Medical innovations have a tendency to be perpetuated in the literature long after they have become obsolete. Textbooks repeat from generation to generation descriptions of signs that have long since been displaced in practice. Many of them are of historical interest and some commemorate the names of great physicians, but they tend to confuse and overwhelm the student. Medicine is now so overloaded with useful and necessary facts that all such useless lumber must be ruthlessly discarded.

Massive tomes have been written on percussion alone, but in practice, all the refinements of the physics of sound may be forgotten if one listens for pitch and pitch alone. By comparing the pitch of the notes produced at different points on the surface of the thorax, even a tyro may readily discover those parts that are relatively high in pitch, i.e., dull or flat. Minute or questionable changes in quality of breath sounds should be ignored. True bronchial breathing is of

course significant; its authenticity can be judged by comparing its quality to that of the sounds heard over the trachea itself. Laennec's favourite sign, whispering pectoriloquy, is still of value, its presence or absence will often clear up doubt as to the existence of true bronchial breathing.

The classifications of adventitious sounds have been innumerable; even modern books indulge in exhaustive descriptions and classifications; this has produced much unnecessary confusion. All adventitious sounds can be included in three groups which are entirely different in their origin and significance. These are: (1) rhonchi, which are whistles and are produced in the bronchi; (2) rales or crepitations, which are crackles and are produced in the bronchioles and alveoli (it is important that these should be looked for on deep breathing and also after coughing); (3) rubs, which are squeaks or creaks and are produced in the pleura. Further refinement accomplishes no useful purpose. The only specific signs of any value are Hippocratic succussion in hydro-pneumothorax and the coin click in pneumothorax.

With such a simplified and easily acquired repertoire much can be discovered. But now that X-ray examination is universally available the value of physical examination must be measured against that yardstick. What follows deals with the relative merits of the two methods. These merits vary widely in different conditions and therefore disease-groups will be considered separately.

#### PULMONARY TUBERCULOSIS.

Probably about 85 per cent of cases of pulmonary tuberculosis who have symptoms could be diagnosed by careful stethoscopy when they first present themselves to a physician. By far the greater number of these will, unfortunately, be found to have far advanced disease; the rest will have moderately advanced disease, and practically none will be incipient or minimal. In tuberculosis cases without definite symptoms the stethoscope will find only a very small proportion. In contrast to this a good X-ray film will discover practically every case of significant pulmonary tuberculosis. Candor, therefore, compels us to admit that the stethoscope and percussion will usually not disclose early tuberculosis. In fact, we must cease to depend on them; they are, indeed, often a detriment. To illustrate: A patient comes with symptoms suggesting pulmonary tuberculosis; a careful physical examination reveals no diagnostic signs; too often the inference is that the symptoms therefore are not due to tuberculosis; such an inference is wrong in a large percentage of cases. One can say, in fact: If the symptoms suggest tuberculous infection and if the physical examination is negative, the chances in favour of tuberculosis are thereby increased.

But it is unnecessary to labour this point. The capitulation of the stethoscope to the X-ray, in the discovery of early tuberculosis,

took place about twenty years ago in the minds of those who use both methods. Any doubts that may still exist are dispelled by the evidence produced by recent examinations of recruits. Many gross lesions which cavitation found on the films were missed by physical examination. A series of these were reviewed after admission to sanatorium, and it was found that even when the location and size of the lesion was known it was most difficult to be sure of diagnostic signs.

#### PULMONARY SEPSIS.

The term is here used in its broadest sense. It includes all pulmonary infection except specific pathological conditions, e.g., tuberculosis and pneumonia. It embraces simple contamination from upper respiratory sepsis, bronchitis, pneumonitis, bronchiectasis and abscess. All degrees of sepsis (even up to bronchiectasis) can exist without producing diagnostic evidence on X-ray films. There are two reasons for this. First, minor degrees of bronchial infection cause insufficient infiltration to cast a shadow; second, as infiltration progresses, local emphysema also takes place and these two frequently counter-balance one another on the film. It is in the discovery and classification of these septic conditions that physical examination can and does excel.

The classifications of pulmonary sepsis are many and varied. Some are based on post-mortem findings and are inadequate because they include only far advanced cases; some are dominated by X-ray findings, which also fail to discover early cases. A practical classification can be made on physical findings. Two large groups may be distinguished, namely, those that are endobronchial and those that have spread to the parenchyma. In the first group no dullness will be discovered, and what rhonchi or rales are found will clear up on coughing. Such cases may be regarded as simple contamination or superficial bronchitis. If the inflammation has made any considerable encroachment on the lung parenchyma, dullness probably will be present and adventitious sounds will persist or appear after coughing. This persistence of post-tussic crepitations over a lung base is a most valuable sign and means that there is a fixed and extensive inflammation. Even though the X-ray be negative (which it often is) such signs must be taken to mean the existence of, or the prelude to, disease which will ultimately produce gross fibrosis and bronchiectasis.

It is commonly stated that bronchiectasis cannot be definitely diagnosed in most cases without lipiodol X-ray films. This is true, but from a practical point of view the demonstration of bronchiectasis is of no great importance and too much emphasis is likely to be placed on its presence or absence.

True bronchiectasis may exist throughout a lifetime without producing symptoms. In this way it is analogous to diverticulosis

of the colon. At the same time severe, chronic, disabling pneumonitis may go on for years in the absence of demonstrable dilatation or sacculation. Bronchiectasis is merely a pathological incident in the course of gross sepsis. It is not the disease but only one of its physical manifestations. It occupies, as a rule, no more important place in the general picture than the fibrosis and emphysema which accompany it. Symptoms and physical signs tell us much more about the course of such disease than X-ray, even with the help of lipiodol. In a chronic cough in whom the X-ray rules out tuberculosis the signs of serious sepsis are fairly constant, *i.e.*, dullness and post-tussic crepitations fixed in some particular spot. On this evidence—not on lipiodol findings—diagnosis, treatment and prognosis must be based.

#### EMPHYSEMA.

One hesitates to introduce a subject that seemed threadbare years ago. I do it only because of the conviction that it has been much neglected in recent years. It is a definite entity which we all see frequently. Its eclipse has been due to the fact that too much has been left to the X-ray.

Various grades of emphysema are common as an apparently primary condition or secondary to asthma of chronic inflammation (septic or tuberculous). The condition represents failure in elasticity which is the vital and all-important function of the lung. Emphysema is, in effect "lung failure." The older clinicians made much of it and described its signs and symptoms most graphically.

But most radiologists never think of emphysema; they have become preoccupied with the discovery and description of opacities and usually give little thought to increased penetrability. Also, in many cases the associated fibrosis cancels out the increased aeration; but the physical signs are unmistakable, characteristic and incidentally among the most venerable. (1) Reduced movement is always present whether the chest is barrel-shaped or not. (2) Absence of a normal apex beat and epigastric pulsation is almost invariable. (3) The percussion note is usually good, but may be impaired by associated septic infiltration of the lung or pleural thickening. Because of pushing down of the diaphragm resonance may be found to extend much lower than usual. (4) Very quiet or absent breath sounds, especially localized to the bases, is the rule. These signs, associated with a comparatively dry cough and dyspnoea on slight provocation make the diagnosis of emphysema quite easy. This may be readily confirmed by vital capacity estimation, which will show a reduction of at least 25 per cent. in cases that have suggestive signs or symptoms.

The experience in examination of recruits has been cited to prove the superiority of X-rays to physical signs in the discovery of tuberculosis. The same experience proves the deficiency of X-ray

findings in chronic sepsis and emphysema. Recruits suffering from these diseases, even when far advanced, have rarely been picked up by the film alone, though physical examination discovers the expected number. In this connection it is to be hoped that the practice of routine X-ray examination will not be accepted by medical boards as a means of finding non-tuberculous disease. Thorough physical examination of the lungs in recruits is just as important as ever. Chronic septic conditions and emphysema play as important a role in the production of disability and pensions as does tuberculosis, and their discovery is much more difficult.

#### ACUTE RESPIRATORY DISEASE.

In the early stages of all acute pulmonary infection physical signs are indispensable to diagnosis. In acute pleurisy one often finds limitation of movement, dullness, or a pleural rub before the X-ray is positive. Even in the presence of moderate amounts of fluid, thinly spread over a large area, the film may not be convincing. Cases are not infrequently seen in which several hundred c.c. of fluid have been aspirated from a pleural sac in spite of a normal film.

Typical pneumonia presents no diagnostic difficulties. A brief history and a glance at the patient is usually all that is necessary. But there are many cases of a typical pneumonia, pneumonitis, and acute bronchitis that are more difficult. Some cardinal symptoms such as cough or pain may be absent. In such cases definite localized or diffuse physical signs are often found though X-rays may be negative throughout. Even in lobar pneumonia definite X-ray findings are characteristically days later than clinical findings, the X-ray is most striking after the crisis has passed.

In post-operative pulmonary complications physical examination is most valuable. The commonest cause of an abnormal fever, in the first three days after operation, is atelectasis and secondary pneumonitis. Under the circumstances it is difficult to get a dependable film; also the commonest site of atelectasis is in the left base behind the heart shadow. But physical signs (dullness, weak breath sounds, or bronchial breathing) usually leave no doubt as to the diagnosis.

(*Canadian Medical Association Journal*, October, 1940.)

## TREATMENT OF WAR WOUNDS OF THE LIMBS.

BY SOLLY M. COHEN, M.A., F.R.C.S., AND C. A. R. SCHULENBURG,  
M.A., F.R.C.S.

We have treated 266 men evacuated from Dunkirk with war wounds of the extremities, including 54 with compound fractures. All of the cases operated on had been wounded at least 24 hours before admission, and the majority had received their injuries 40-72 hours previously. In 84 cases the wounds were treated by the closed-plaster method, and all patients operated on received a course of chemotherapy. There were no deaths; only one limb was amputated; healing has been rapid and uneventful; and after 10 weeks the general condition of all patients is excellent.

## ANÆSTHESIA.

We invariably employed general anæsthesia. Even a small bomb splinter was often found to have produced a wound with severe internal destruction of tissue, a wound that could not possibly have been explored satisfactorily under local anæsthesia. The routine use of evipan or pentothal, followed by gas and oxygen, was most satisfactory. The dosage of evipan was limited to 10 cm.

## THE WOUND.

As a routine, the surrounding skin was cleansed with ether soap, shaved, and washed with saline, the wound in the meantime being covered with a saline dressing. No antiseptics were employed in the wound. Except for the excision of the skin edge no extensive debridement was carried out. Obviously tattered shreds of fascia, muscle or tendon were simply divided and removed. No attempt was made at excision of the damaged and lacerated tissues.

The frayed irregular edges of skin were excised and the wound laid widely open by making several radiating incisions. This permitted of a wide exposure for exploration and subsequent drainage without needlessly sacrificing a large amount of skin. The results show that there is no danger of these incisions extending or disseminating the infection.

We consider the fascia layer of paramount importance. Although there was only a small hole in the fascia there was often extensive disruption of the deeper tissues. This cloaking fascia acts like an elastic case, walling in the cavity and maintaining it under pressure. The principle of radiating incisions was again employed to allow for relaxation of the fascia and adequate drainage.

No attempt at excision or trimming of muscle was made. Care was always taken in the subsequent packing that there should be adequate drainage of the cellular spaces between muscle-bellies. No suturing of tendons was done.

Only bone fragments that were completely detached and lying loose were removed.

No suturing or trimming of any divided nerve was done, nor was it considered justifiable to explore a nerve so as to be sure of its continuity. "Concussion" of a nerve from a neighbouring wound was present in 7 cases, 5 being the common peroneal, 1 the radial nerve and 1 the brachial plexus.

It was found unnecessary to widely open the whole track of through-and-through wounds. By enlarging the entrance and exit wounds by radiating skin and fascia incisions the course of the track could be readily and efficiently packed with petrolatum-jelly gauze. The principle of counter-incisions for adequate drainage was employed frequently.

All cases were X-rayed before operation, and full use was made of the portable X-ray to detect the presence of foreign bodies. The rule applied was that foreign bodies were removed only if readily accessible. Subsequently, in few cases, localised abscess formation around a foreign body necessitated incision, and the fragment then presented itself.

No antiseptics whatever were employed in the wound itself. Petrolatum-jelly gauze was used throughout for packing into every recess and intra-muscular plane. At subsequent changes of plaster it was striking how much of this gauze was extruded.

## THE PLASTER.

We used a thin layer of sterilized plaster wool over the wound, the rest of the plaster being skin tight. With hip and shoulder spicas we feel that a certain amount of padding around the trunk is essential for the comfort of the patient. We consider it essential to always immobilize the joint above and the joint below. Thus, for an elbow injury a full shoulder spica was used; for a knee injury a hip spica was applied, and for an injury of the wrist the plaster extended up to the axilla. To assist in the reduction of the oedema it was made a rule that all limbs in plaster should be kept elevated until 48 hours after its application. For wounds of the lower limbs raising the end of the bed sufficed.

Several patients were admitted with plasters in which large windows had been cut over the wounds. All these cases showed "window oedema" with congestion of the tissues. As soon as these cases were put into a closed plaster they were immediately comfortable, and their raised temperatures quickly subsided. The windows had apparently been cut to permit of inspection of the wound. Such morbid curiosity is unnecessary and serves no purpose. Continuous pain and fever with oedema of the fingers or toes are sufficient signal that treatment has been inadequate or that severe infection is supervening. We found these three signs absolutely reliable.

## COMPOUND FRACTURES.

All compound fractures were treated in closed plaster. Reduction was obtained by manual traction only, and maintained, while

the plaster was being applied. It is too early yet, at the end of 10 weeks, to judge the final results of all cases, but we can say that this form of treatment was saving of life and limb. We are well satisfied with alignment of the fragments and length of the limbs. Nearly every case of upper-limb injury, including 7 with extensive shattering of the humerus, was up and about within 10 days.

#### JOINT INJURIES.

There were 10 cases of gunshot wounds of the major joints, 6 being penetrating wounds of the knee. In cases of penetrating wounds of the knee joint the injuries were over 24 hours old and the joints were distended with blood. After aspiration through a clean field the wounds were enlarged down to the capsule only, petrolatum gauze packing was inserted to this layer, and plaster was applied. Sepsis did not occur in cases thus treated.

#### SOFT-TISSUE INJURY.

There were 207 wounds involving the soft-tissues only, of which 30 were treated in plaster. These 30 were extensive wounds of the limbs, and the same principles were applied, as if an associated fracture had been present. The healing of these soft-tissue wounds treated in plaster was astonishing.

After operation chemotherapy was employed as a routine with a standard dosage. Post-operative cases admitted with pyrexia were placed on a similar course. We used sulphanilamide given in divided dose every 4 hours, day and night, to a total of 19.5 Gms. in 4 days. No toxic effects were observed from this dosage. Sulphanilamide was not used as a local application to wounds. Sulphapyridine was reserved for cases with chest wounds or where respiratory complications were anticipated.

(*"The Lancet,"* Sept. 21, 1940).

### CLINICAL OBSERVATIONS ON THE USE AND METHOD OF ADMINISTRATION OF CERTAIN GENERAL ANAESTHETIC AGENTS.

JOHN S. LUNDY, M.D., AND EDWARD B. TUOHY, M.D., M.S. (ANES.)  
*Rochester, Minnesota.*

In a communication made five years ago, a review of the trends in anaesthesia was presented which covered the experiences in this field at The Mayo Clinic for the ten years 1924 to 1933 inclusive. In the five years since then there has been a definite steady increase in the use of special agents and methods for anaesthetic purposes as

compared with the use of ordinary anaesthetic agents and procedures. By "special agents and methods" is meant not only the use of a special agent such as pentothal sodium but also a special method of administration of an agent for either a part of, or for the entire period of, anaesthesia. By "ordinary methods" is meant the use of diethyl ether, nitrous oxide or ethylene, when administered by ordinary methods of inhalation. Whereas, in 1938, special methods and agents were used in 40 per cent. of the total number of cases in which anaesthetics were administered, during 1931 special agents and methods were employed in administering 63 per cent. of all anaesthetics. One of the reasons for such a decided increase in the percentage of special forms of anaesthesia during the last five years has been the introduction of new and valuable anaesthetic agents that can be given intravenously.

#### INTRAVENOUS ANAESTHESIA.

Intravenous anaesthesia is being employed now for many relatively short operative procedures which previously were performed under nitrous oxide oxygen inhalation anaesthesia, with or without diethyl ether. Thus far the barbiturates, especially those of shorter action, such as pentothal sodium and evipal soluble, have proved to be the most satisfactory and useful agents for producing anaesthesia intravenously. Pentothal sodium is considerably more potent, however, than evipal soluble and affords greater surgical relaxation. Both agents produce anaesthesia quickly and the period of recovery from anaesthesia is rapid. Originally a 10 per cent. solution of pentothal sodium in distilled water was employed for intravenous anaesthesia, but occasional reactions, which caused discomfort to the patient, occurred about the site of injection. The occurrence of these reactions was definitely increased when paravenous injection was made. Subsequently a 5 per cent solution of pentothal sodium was used, but still phlebitis occurred in a few instances. At present we are using, and have used for a year and a half, a 2.5 per cent solution of pentothal sodium. One gram (15 grains) is dissolved on 40 c.c. of distilled water; each cubic centimeter of the solution contains approximately 25 mg. (3/8 grain) of the drug. Since the concentration of the pentothal sodium solution has been changed from 5 to 2.5 per cent, delayed phlebitis has been observed in relatively few instances. The quality of anaesthesia when a 2.5 per cent solution of pentothal sodium has been employed has been equal to that produced with 10 per cent or 5 per cent concentrations of the same agent. In many instances now we feel that we can administer more dilute solutions of the agent more safely to certain individuals because the drug is introduced more slowly into the blood stream. The method of administration of pentothal sodium has remained essentially unchanged; small quantities

of the agent are administered intermittently and slowly to induce and maintain anaesthesia. We have observed that the simultaneous administration of oxygen is of decided advantage when pentothal sodium is used for abdominal operations. Use of oxygen seems to improve muscular relaxation and to prevent development of anoxemia. In fact, in all instances wherein pentothal sodium is being used, if the slightest degree of cyanosis appears, oxygen is administered. We have found that the combination of regional block or local infiltration of tissues, plus the judicious use of pentothal sodium, has been one of the safest methods of anaesthesia for patients who constitute poor surgical risks. We still consider pentothal sodium too potent an anaesthetic agent for children less than ten years of age, because it too greatly depresses the respiration of individuals with such narrow respiratory passages as those of children, if they are breathing air. However, if oxygen is administered simultaneously, even small children may tolerate pentothal sodium; at least they will tolerate it better than if oxygen is not used. We feel that use of pentothal sodium often is contra indicated in the presence of advanced cardiac disease, particularly if the patient suffers from dyspnea. It has been suggested that sulfar poisoning may result from the use of sulfanilamide in large doses previous to a full anaesthetic dose of pentothal sodium. This point has not yet been settled, but it is true that several anaesthetists prefer to use evipal soluble rather than pentothal under the circumstances. Previous administration of sulfanilamide eventually may prove to be a contraindication to the use of an anaesthetic dose of a barbiturate.

#### DIVINYL ETHER.

Divinyl ether, a comparatively new anaesthetic agent, is prepared under the trade name of "vinethene". It is very volatile, produces anaesthesia quickly, and may be administered by the semi-open drop method or by the closed method. Divinyl ether induces anaesthesia more rapidly than does diethyl ether and is especially suitable for short operations, to produce anaesthesia for which evipal soluble or pentothal sodium might be given intravenously; divinyl ether also may be used for obstetrical anaesthesia. Not frequently, during induction of anaesthesia with divinyl ether, muscular twitching and slight convulsive movements occur. If divinyl ether is administered for a major abdominal operation, it is important that an adequate supply of oxygen be maintained and that a sufficient amount of glucose be supplied preoperatively and postoperatively to protect the liver from the danger of fatty degeneration. Divinyl ether simulates chloroform in that they both can produce hepatic damage. Divinyl ether, however, is much less toxic in this respect than is chloroform.

#### RECTAL ANAESTHESIA

Rectal anaesthesia, induced with a mixture of 65 per cent ether in olive oil, has been used advantageously in obstetrics and also in treatment of certain severe asthmatic crises. Tri-bromethanol (avertin), administered rectally, is useful to produce basal anaesthesia for various operative procedures on adults. Usually supplementary anaesthetic agents, such as nitrous oxide or local anaesthetics, are employed. The use of avertin alone, or in combination with nitrous oxide and oxygen, is a satisfactory method of anesthesia, especially when it is desired to eliminate the hazard of fire and explosion. Avertin is particularly suited for children for such procedures as encephalography, ventriculography, and bronchoscopy. In obstetrics, avertin has not been more satisfactory than olive oil and ether because restlessness occurs frequently on account of the necessarily small dose used. Rectal administration of barbiturates is limited usually to doses which produce only basal hypnosis, although in convulsive conditions, such as tetanus, strychnine poisoning and eclampsia, they may be administered in large doses. It is questionable whether the barbiturates, administered rectally, are more advantageous than is avertin; however, the barbiturates are more convenient to use because they can be administered in capsules. Avertin may be supplemented by barbiturates or chloral hydrate in certain conditions such as tetanus, or wherever a powerful antispasmodic is desired.

#### GASES

Of the various gaseous inhalation anaesthetic agents, nitrous oxide in combination with oxygen, with or without ether vapour, is most frequently employed. The carbon dioxide absorption technic is employed. Ethylene is used occasionally but cyclopropane is reserved for special types of operations wherein it is definitely indicated, such as removal of thoracic tumors, pericardiectomy and repair of diaphragmatic hernia. We have felt that cyclopropane should not be used routinely unless the danger of ignition of the gas in the gas machine by static spark can be eliminated. Therefore, because the number of cases in which cyclopropane is indicated, especially, is not large, it probably will be used less frequently in the immediate future than it was during the last five years.

#### INTRATRACHEAL ANAESTHESIA

The merits of intratracheal anaesthesia are becoming more generally appreciated annually. The advantage of this method is to provide an adequate airway under any circumstances and we find it to be especially useful in operations about the head and neck, in neurologic operations, and in those cases wherein there are symptoms of respiratory obstruction. The value of intratracheal intubation is unquestioned when artificial respiration and resuscitation are

necesssary. It is also valuable when, at the end of an operation, it is desired to aspirate material from the trachea and bronchi. It is now well known that postoperative pulmonary complications are fewer if the lungs and air passages are made clean and are left dry at the end of operation than if the patient is returned to bed with wet lungs or air passages partially obstructed with any kind of material.

(Rocky Mountain Medical Journal, March 1940.)

### NON-VENEREAL SYPHILITIC INFECTIONS

JACK G. HUTTON, M.D.

Denver

Syphilis, which infects more men and women than any other serious ailment, is not always transmitted as a venereal disease. Half the syphilitic infections are acquired innocently, many are accidental. These accidental infections with *Spirochaeta pallida* may occur through any of the following means:

1. Personal contact with an infectious individual (other than sexual relations).
  - (a) Kissing.
  - (b) Bare handed examination by physician or dentist (oral, vaginal or rectal).
  - (c) Bare handed surgery (tonsillectomy, exodontia, hemorrhoidectomy, and dressing of wounds and incisions).
2. Intermediate carriers.
  - (a) Common drinking cups.
  - (b) Eating utensils.
  - (c) Operating instruments (scalpels, needles, clamps, etc.)
  - (d) Sponges used in operations.
  - (e) Furniture, clothing, etc.
3. Contact with blood from syphilitic person.
  - (a) Laboratory workers.
  - (b) Recipient of blood transfusion.
4. Droplet infection from infectious person.
  - (a) Coughing.
  - (b) Sneezing.

In the accidental infections the initial lesion or chancre may occur on any portion of the muco-cutaneous surface except the hair, nails, or teeth with the overwhelming proportion of these lesions occurring about the mouth due to the popularity of mouth to mouth contact and the predilection of infectious lesions for this site.

### EXTRAGENITAL CHANCRE

According to Downing's report, 6 per cent of syphilitic cases contract the disease through extragenital infection which occur most often in the following locations; on the lips, tongue or tonsils; on the fingers of hand; on the breasts of female patients, and on the eyelids. In the Denver City Venereals Clinic, where 840 new cases of syphilis were admitted and started on treatment during 1938 or in any other active syphilitic clinic, extragenital chancres are not a rare condition.

**Chancre of the lip:** Chancre of the lip is encountered not infrequently both in private practice and in clinic work and occurs more often on the lower than on the upper lip. These lip infections are obtained through kissing or through an intermediate carrier such as a drinking cup, a glass, or an eating utensil and occasionally occur through an occupational hazard on the lip of a laboratory worker. In Shamberg's famous case, seven young women developed primary lesions of syphilis following a kissing game in which a young man participant had a chancre of the lip. This gives an idea of the possibility of the spread of syphilis from a single infectious lesion of the oral region. Primary syphilitic lesions of the lip usually produce very decided local reaction with swelling, induration, and crusting with considerable adenopathy and must be differentiated from carcinoma, gumma, herpes, fissured lip, trauma, inoculation tuberculosis, sarcoid, and pyogenic granuloma.

**Chancre of the Tongue:** Chancre of the tongue is considerably less common than of the lip. Tongue chancres are often characterized by an almost total absence of subjective symptoms and are quite inconspicuous in appearance except for an induration plainly apparent on palpation. A chancre in this location must be differentiated from trauma, carcinoma, and gumma.

A patient may show a very innocent appearing lesion of the tongue, the serum from which is teeming with *Spirochaeta pallida* when examined under the darkfield illuminator.

**Chancre of the Tonsil:** A tonsillar chancre is slightly more common than chancre of the tongue and produces more definite subjective symptoms. In this area a chancre produces decided local reaction with cervical glandular enlargement and not uncommonly causes considerable difficulty in differentiating from peritonsillar abscess, follicular tonsillitis, Vincent's angina, or neoplasm.

**Chancre of the Gum:** Chancre of the gum is considered a genuine rarity and not a product of lack of recognition. Therefore the presentation of a photograph of a case of chancre of the gum illustrates the appearance of a proved chancre in an extremely rare location. Chancre of the gum produces very few subjective symptoms because this is not a highly sensitive area and is accompanied by a minimum of swelling and induration due to the firmness of the gum tissue.

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Chancre of the hand and the finger: The hand and finger is the second most common site for an extragenital chancre. This type of lesion is more common in private practice than in syphilis clinics because they occur with far too great a frequency in physicians, dentists, and nurses. Bare handed examination, bare handed surgery, bare handed counting of sponges used in operations or bare handed dressings of wounds or incisions is the common history of the method of infection in this type of accidental syphilis.

Chancre of the finger is more painful than chancres of most other sites. This pain is accompanied by swelling and crusting with an early and severe enlargement of the regional lymph nodes easily discernible. The differential diagnosis must include simple infections (such as "hang nails," paronychia, felon, or erysipelas) epithelioma, sarcoma, inoculation tuberculosis, tularemia, and sporotrichosis.

Chancre of the Eyelid: When a chancre occurs on the eyelid, a rather rare location, it is practically always an accidental infection and may occur in a physician due to a droplet infection from a coughing patient or the transfer of material to the eye through a careless gesture. Chancres in this area are usually rather painful and produce intense swelling in the adjacent tissues.

Chancre of the Nipple: Chancre of the nipple occurs in female patients as the result of direct mouth to nipple contact and shows a rather typical induration of the immediate underlying breast tissue.

Chancre of the Cheek: Chancre of the cheek is encountered almost equally in male and female patients and is produced by mouth to cheek contact. Chancres in this and similar areas usually show considerable induration with a rather characteristic crusting which should more often arouse some suspicion as the cause of the lesion.

Chancre of the Thigh: A chancre of the posterior aspect of the thigh demonstrates the possibility of accidental infection of syphilis in unsuspected and uncommon sites. One particular chancre was evidently the result of contact with infectious material deposited on a toilet seat.

#### INNOCENT INFECTION WITHOUT A CHANCRE

The following case history demonstrates the possibility of the transmission of a syphilitic infection with a blood transfusion.

The patient, a white married male 35 years of age, was first seen with a maculopapular generalized cutaneous eruption and mucous patches of the throat. There was no history of a chancre and patient denied any exposure through sexual relations other than with his wife. He had received a blood transfusion five weeks previously while hospitalized with a bleeding gastric ulcer. A clinical diagnosis of acute secondary syphilis was made and treatment was

instituted. Subsequent reports of the laboratory tests showed the patient to have a four plus and the wife a negative blood Wassermann reaction. On investigation the donor of the blood transfusion was found to have been started on treatment for acute secondary syphilis with a four plus serologic tests ten days after the transfusion. In this case the patient developed characteristic secondary manifestations without the presence of an initial lesion.

#### INNOCENT INFECTIONS WITH GENITAL CHANCRE

The following case history shows the possibility of an innocent syphilitic infection starting from an initial genital chancre.

A 12-month-old white female child was referred for antisyphilitic therapy. Eight days previously the child had been taken to a physician because of a skin eruption of one week's duration and a sore on the genitalia which the mother had noticed several days previous to the appearance of the skin eruption. Blood was taken for a Wassermann reaction and an injection of sulpharsphenamine was administered intramuscularly. At the time of my first examination of the child there was a squamous eruption present on the palms of the hands and the soles of the feet and some induration remaining at the site of the sore on the left labia.

Investigation into this case proved that the infection was undoubtedly obtained from the young girl employed in the home as a maid who on examination was found to have acute secondary syphilis and who on question admitted the practice of sexual perversion with this baby as the innocent victim.

#### DIAGNOSIS

The differential diagnosis of a chancre regardless of its location is dependent upon three procedures:

1. Repeated darkfield examination of the serum of the chancre or of the serum aspirated from the enlarged adjacent lymph nodes.
2. "Local" Wassermann reaction performed upon the serum from the lesion or even upon the material aspirated from the lymph nodes.
3. "Wassermann follow-up" or repeated blood serological tests.

Let us remember that the positive diagnosis of early syphilis is a 100 per cent laboratory procedure, that there is no such thing as an ability to diagnose a chancre from the clinical appearance and symptoms and that early recognition of accidental syphilis infection can be accomplished only by making it a rule to have darkfield examinations of all skin and mucous membrane lesions which do not heal with the ordinary local applications when treated for a period of two weeks.

#### TREATMENT

Let us strive for earlier diagnosis in all cases of syphilis whether genital or extra-genital, let us follow the treatment as recommended by the Co-operative Clinical Groups in their recent

and in any subsequent report as the best available therapeutic attack to aid the control of syphilis so actively sponsored by the public health service. And let us relegate all experimental work in the treatment of syphilis to a limited number of extremely well organised teaching clinics in large medical centres with not only facilities for the necessary hospitalization and an adequate follow-up but also with sufficient financial assistance either as specified grants or specific donations to maintain the continuation of work on any selected problem to its completion.

## SUMMARY

1. Extragenital chancres are not rare.
2. All innocent syphilitic infections do not occur as extragenital chancres.
3. The clinical appearance and subjective symptoms of a chancre show considerable variation according to the site of infection.
4. Photographs and case histories of several cases are used in this paper to illustrate certain points.
5. The diagnosis of early syphilis, regardless of the type of infections, is always a 100 per cent laboratory procedure.
6. The treatment of early syphilis as outlined by the Co-operative Clinical Group should be followed as closely as possible in all cases of acute primary or secondary syphilis.

(Rocky Mountain Medical Journal, March 1940.)

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### Extracts.

#### TREATMENT OF TETANUS WITH SODIUM EVIPAN AND M.B. 693.

BY J. BRYANT, M. D. EDIN, F.R.C.P.E., D.T.M. & H.

Senior Medical Inspector, Sudan Medical Service and  
H. D. Fairman, M.B. London.

Medical Inspector, Sudan Medical Service.

In the Dinka districts of Equatoria and the upper Nile provinces of the Sudan the rarity of tetanus has always been rather a puzzle. A round of the surgical wards at Wau, for instance, would convince the European practitioner that, if ever wounds eminently suitable for the growth of *Bacillus tetani* existed, those wounds were to be seen among Dinka and Nuer; septic comminuted compound fractures of the skull, penetrating spear wounds in any part of the body, feet pierced by fish spears and fish spines, crocodile and lion bites with the terrible attendant sepsis, bone damage, and gangrene. Most of these injuries are tightly sealed with a dirty piece of leather or cloths tied over a cow-dung compress. Hundreds of these cases are treated each year yet in very few does tetanus develop; one or two cases of tetanus may be seen a year, sometimes none.

In the course of an outbreak of cerebrospinal meningitis in Equatoria in 1939 patients with tetanus were occasionally brought to Sudan Medical Service intreatment centres established in the infected districts. Some dressers had seen tetanus before and recognised it; others had not. Relations of the sick if told that the patient had not C.S.M. but tetanus, as a rule demanded treatment and lumbar puncture. The Dinka are "forceful," and treatment was always given by the dresser as for C.S.M. by lumbar puncture and injections of M.B. 693. During the constant patrolling of the epidemic areas we saw these cases in treatment centres and administered evipan, leaving enough of the drug with the dresser to keep the patient quiet or, if necessary, anaesthetised for three or four days.

*Dosage and preparation of Drugs.* Evipan is given to produce continuous drowsiness, and the dose is increased if necessary until all convulsions have been controlled. Feeding through a tube is easy, and as a rule the patient swallows without choking. In bush dispensaries an injection of I. G. night and morning is given by the dresser; but if he cannot control the case, I. G. is given at midday also. Great relief and muscular rest result, even if there are a few hours of acute pain between periods of anaesthesia. Narcosis can be prolonged by the use of morphia or other sedatives.

M. & B. 693 is injected in quantities of 1 tablet to 5 to 10 c.cm. of saline. If suspensions are sterilised by boiling in a water bath and the tablets have been well crushed, the suspension will become flocculent and will not block needles. A convenient quantity for sterilisation and field work is 20 tablets to a 100 c.cm. bottle. We

have used three to five intramuscular injections of 1.5 to 2.5 G. in the treatment of tetanus and gross sepsis.

*Treatment of tetanus with sodium evipan alone.* Numbers are too small for analysis; but, if the patient could be kept alive for five or six days, it was considered that he had a sporting chance of recovery. Lumbar puncture was always performed. Solutions of magnesium sulphate were not used. Patients were fed by the nasal route under anesthesia. Recovery in these cases was always very slow and wasting pronounced.

In the series under discussion the authors may have been lucky; the number treated was small (22) and the mortality low (5). In the light of previous experience with evipan alone it is considered that recovery has been far too rapid and the mortality too low to be explained away entirely by the muscular rest produced by prolonged narcosis. It is suggested that it is possible to save many patients with tetanus in remote places where high temperatures and inaccessibility preclude the use of serum. If this is so, no comment is needed on the value of these methods in war.

(Abstract from *The Lancet*)  
(Aug 31, 1940.)

#### VENOM IN THE TREATMENT OF ARTHRITIS, ARTHRALGIA, NEURITIS AND ALLIED AFFECTIONS.

BY PAUL BUTLER, M.D. ORLANDO, FLORIDA.

In ancient times the snake was a symbol or ideal of the art of healing, as shown by the Roman Caduceus, by the pictures of Aesculapius and Hygeia and others. In the modern time Hanemann and his followers began the use of snake venom in medicine. Recently many different kinds of snakes have been investigated as regards the pharmacology and therapeutics of their poisons.

1. Venom of cobra. Cobra venom is highly neurotoxic and has a higher analgesic action than morphine but these two properties have no relation to each other. The curative effects of cobra venom can not be explained by its analgesic effects alone. Probably it has a deep effect upon metabolic processes in the human body.

2. Venom of pit vipers. This venom is hemotoxic. It softens the walls of the blood vessels, has a hemolytic effect upon the blood cells and affects metabolism. It increases eosinophils in the blood.

*Preparation and use.* The author used concentrated and purified solution of copperhead class of vipers venom. The venom is obtained from freshly captured snakes, as venom from snakes long in captivity is of inferior quality. The venom, after recovery is immediately dried by means of high vacuum under carbon dioxide snow freezing. Venom left standing at ordinary temperature is rapidly decomposed by oxidation. The venom is next diluted

to a suitable therapeutic strength and put up in sterile rubber stoppered vials. The contents of a vial labelled "N" are used to test a patient's susceptibility. "N" should cause some local reaction, but not of a severe nature. The vial labelled "A" is the first treatment strength, and should be followed by quite a marked, but by no means painful reaction and will produce early echymosis calling many days. The vial labelled "B" is the second treatment strength and shows still greater hemolysis and echymosis. Vial labelled "C" the third treatment strength, is of course much more tative, and is the highest strength ever used.

Venomin is always given intradermally never hypodermically, intramuscularly, or intravenously as it is essential that it should be absorbed into vascular system as slowly as possible. A tuberculin syringe with a 25 gauge needle is the ideal thing to use. Ordinarily about 1/20 cc. should be given.

The author tried it in 25 cases, including two of herpes zoster, others of pain in various parts of body due to arthritis, neuritis, burns, injury, neuralgia etc. Marked improvement occurred in 90 per cent and symptomatic cures in at least 85 per cent of the cases. Injections were made at intervals of 3 to 7 or 10 days.

(Venomin is put up in vials by venom company, Venice, Florida).

(Abstracted from *The Journal of the International College of Surgeons* Aug. 1940.)

#### THE EFFECT OF THE INHALATION OF TOBACCO SMOKE ON THE VASCULAR SYSTEM, WITH REFERENCE TO CHANGES IN BLOOD PRESSURE.

BY WALLACE E. HERRELL AND PAUL L. CUSICK.

There is increasing evidence in support of the contention that tobacco smoke inhalation is responsible either directly or indirectly for some definite vasospastic states. A standard "smoking test" was used upon a large group of individuals, some having, and some not having, evident vascular disease. The standard smoking test is as follows: The basal blood pressure of an individual is obtained after he has been allowed to rest in a supine position in a quiet room for about thirty minutes. It is also preferable that the individual do not smoke for at least ten hours before the test. The individual is allowed to inhale the smoke from one or two cigarettes of any standard brand, during which time the blood pressure and pulse are recorded every three to four minutes. Since 1938 the authors have studied thoroughly twelve individuals who exhibited a marked response in rise of blood pressure following the test. Hine and Roth have observed that the increase in diastolic blood pressure during the smoking test was almost identical with the increase

noted during Brown-Hines blood pressor test, whereas the systolic blood pressure in a considerable number of cases demonstrated a greater increase following inhalation of smoke than it did after application of the cold pressor test. Different brands of cigarettes vary considerably in their ability to produce this vasoconstriction and any of the common filters used do not in the least affect the observed constrictions. All subjects do not, of course, show evidence of vasoconstriction following inhalation of tobacco smoke.

The authors found that the average increase in the systolic blood pressure for a group of twelve individuals who were hyper-reactive to tobacco, was 39.7 mm. of mercury, representing an increase of about 28 percent, and that the average increase of diastolic pressure was 28.1 mm. of mercury, representing an increase of about 34 per cent. In this particular group of patients the marked decrease in the dermal temperature of the extremities, a decrease which is additionally indicative of induced vasospasm, is interesting. To exclude the possibility that the mere application of the test to an individual with a labile vascular system was responsible for the rise in blood pressure, all these subjects during the tests were asked to inhale, holding at the same time a nonlighted cigarette in the mouth. Observation of these individuals disclosed no evidence of any appreciable increase in the peripheral blood pressure, nor did it reveal any evidence of vasoconstriction as measured by the decrease in dermal temperatures or as determined by the measurements of vessels to be described.

The actual demonstration of the degree of vasospasm following the use of tobacco was shown definitely by studies of the retinal arterioles. The caliber of eight retinal arterioles in five subjects was measured by a modified Morgan graticule contained in the Keeler ophthalmoscope before and during the inhalation of tobacco smoke. Before the test the average caliber of eight retinal arterioles in five subjects ranging in age from twenty-three to fifty-seven years was 96.0 microns. Following the inhalation of tobacco smoke, the rather convincing evidence of the vasoconstrictive powers of tobacco smoke was seen in the fact that the average size of these vessels immediately following inhalation of tobacco smoke was 74.8 microns, an average decrease of 21.2 microns. It appears, therefore, that the demonstration clearly indicates that the arterioles of the retina take part in this vasomotor response which seems general and which results from the inhalation of tobacco smoke. Further it seems clear that the response is in the nature of the generalized narrowing of the arterioles, rather than of a local spastic vasoconstriction. It is also reasonable to assume that this effect is brought about by action of the vasomotor nerves on the retinal arterioles.

From time to time there has appeared in the literature mention of tobacco angina. In the light of foregoing observations, it does

not seem too remote a possibility that tobacco may definitely bring about spasm in a coronary arterial tree which is already diseased.

One of the author reports the case of a man aged 54 who has an actual coronary occlusion in 1934, from which he recovered. Subsequently he suffered from mild anginal attacks, some of which can be traced definitely to the use of tobacco.

The effect of tobacco smoke should be generally studied in patients suffering from vascular disease. When such a patient shows evidence of vasoconstriction, he has everything to gain and nothing to lose by the discontinuation of the use of tobacco.

(Abstracted from *The Medical Clinics of North America* July 1939.)

### MALE SEX-HORMONE THERAPY IN THE FEMALE.

BY CHUNI LAL MUKHERJEE, M.O.,

*Teacher of Obstetrics and Gynecology,  
Chittagong Medical School, Chittagong.*

The use of male sex-hormones in female genital affections is a comparatively recent gynaecological adventure. The reported results are few, and not definitely convincing. Even in those cases where satisfactory therapeutic effects are obtained, the mode of action of this hormone is imperfectly understood. The purpose of this paper is to present the experiences and observations of the author with testosterone propionate in a few gynaecological and obstetrical conditions.

The total number of cases studied was 32 and may be arranged in four groups:

1. Precocious sexual maturity.....1
2. Uterine hemorrhage of functional origin 12
3. Continuation of pregnancy beyond term ....1
4. Inhibition of lactation .....18

*Precocious sexual maturity.*—A girl aged 8 years with enlargement of the breasts, growth of hair in the axillae and on the pubis and onset of menstruation, was treated by injections of testosterone propionate 5 mg. twice a week. After a total of 85 mg. of the drug there has been no vaginal bleeding, the labia have shrunk in size and the hair are very sparse. One case is, however insufficient to draw any conclusions.

*Uterine hemorrhage of functional origin.* Total number of cases in this group was 12 and the ages ranged from 15 to 45 years. Clinically the group included 3 cases of functional menorrhagia and 9 cases of metropathia hemorrhagica. Two cases of functional menorrhagia were classed as moderate and one severe; six cases of metropathia hemorrhagica came under the moderate group and three under the severe one.

Moderate cases of metropathic hemorrhage were treated with 10 mg. of testosterone propionate by intramuscular injections every third day until the bleeding had stopped. Five mg. of the substance were then given twice weekly for two weeks and then once weekly for four weeks. The total dosage required was on an average 90 to 120 mg.

Moderate cases of functional menorrhagia were treated with 5 mg. of testosterone propionate every third day during the estral phase and twice weekly during the luteal phase. The treatment was continued for three months before results were analysed.

Severe cases were treated essentially on the same lines, only bigger doses were employed. Thus for metropathia the first two doses were 25 mg., each, while the subsequent dose was 10 mg. at each injection. For functional bleeding the last two doses preceding the menstruation during each cycle were 10 mg. each.

In the two moderate cases of functional hemorrhage remarkable results were obtained but courses had to be repeated on account of recurrence. In the third and severe case treatment had to be abandoned on account of loss of libido and slight growth of hair on the chest and face, after the fifth course.

In metropathia hemorrhagica results were apparently more encouraging.

*Continuation of pregnancy beyond term.* After experiments on guinea-pigs the experiment was extended to human beings on only one occasion. The result was encouraging but no conclusion can be drawn from a single case. If the result is confirmed by future work we may claim to have in testosterone propionate a drug which will combat habitual premature birth.

*Inhibition of lactation.* Total number of cases treated was 18 under this head. Suppression of the breast secretion was deemed necessary because of still-birth, neonatal death, and tuberculosis of the mother in one case. In general, the earlier the treatment was commenced, the better the result. Complete inhibition of breast milk was obtained in 8, in whom the treatment was commenced on the day of the delivery. On the other hand in 6 cases, where testosterone was given on the third day or after little or no immediate effect was obtained. Two of these patients on subsequent follow up pointed out that after an initial state of engorgement lasting for about 36 to 48 hours the breast secretion progressively diminished till in the course of a week it was only scanty.

It must be admitted that in these cases other subsidiary treatments viz., suspension of breast feeding, saline cathartics, limitation of fluid intake, and camphor were employed for one day only. From the little experience in this group it appears that testosterone has little action on the activity of the mammary glands once the secretion has commenced. In the remaining four cases treatment was

instituted at variable period before the onset of breast engorgement. The results in these were fairly satisfactory.

Besides the cases analysed above, in 4 nursing mothers inhibition of breast milk was required one to three weeks after confinement, because of neonatal death. In all of them treatment was only partially satisfactory as in none of them complete suppression of breast milk was possible in spite of fairly intensive treatment. It must be admitted, however, that in all of them there was an appreciable diminution in the engorgement and milk output following a total dose of only 40 mg. of testosterone propionate.

For an average case the initial dose was 25 mg., followed by 10 mg. each at intervals of two days, and then further two to six injections of 5 mg. each at intervals of four to six days. When treatment was commenced before the commencement of milk secretion, more than four injections were necessary in only one case. On the other hand six to eight injections were required when the therapy was instituted after the commencement of mammary activity.

(Abstracted from the Calcutta Medical Journal Oct. 1940.)

## Medical Miscellany

Malaria is the most common disease in our country and strangely enough very little attempt is made to tackle the problem of its eradication. Quinine, the specific remedy for malaria, is very costly, and "its price has been kept at a high level. India is capable of growing ten times her requirement of quinine but still the drug is beyond the reach of the ordinary man's purse. In the interests of the millions of sufferers from malaria, it is incumbent on the authorities to see that quinine is sold at a cheaper rate and to see that the cultivation of cinchona is actively encouraged. In many of the western countries malaria has been eradicated by a bold policy of quininisation, reclamation of marshy areas and other anti-malarial measures. It is high time something similar is done in this country. Instead of trotting out war as the excuse for inaction, war should be an incentive for more extensive plantation and cultivation of cinchona, for which the climate of this country is eminently suited. The vested interests of the Dutch cinchona planters do not interest us, but in the interest of the sufferers from malaria quinine should be more abundantly produced in this country and should be available at a cheap price. One of our provinces has schemes for growing tobacco, but is not cinchona a more useful and urgent necessity?

The Medical profession is not a trade union and is not especially concerned with the hours or place of work. It does not build

trusts or monopolies, excludes no qualified competitions, and does not retain any worth-while discoveries for its own profits. It does not specifically engage in political activities and calls no strikes. It answers calls from the storm and wind-swept country, the streets of the village, the boulevards of the city, and the desolate fields of battle. It demands that each physician meet the standards which equip him to render good medical care.

*Rocky Mountain Medical Journal, July 1940.*

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\*RECENT ADVANCES IN MALARIAL THERAPY" by Dr. Menino De'Souza, B.Sc., M.D.  
Medical Bulletin. Vol. VII, No. 19, Oct. 7, 1939.

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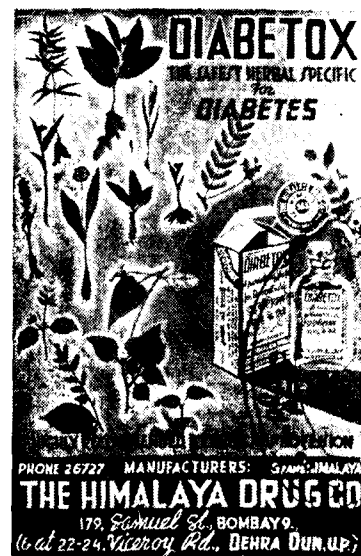
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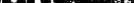
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