CANCER AMONG THE CHINESE*

JAMES L. MAXWELL, M.D.

Among the many questions about disease in China, one of the most interesting is that relating to the frequency and distribution of cancer. The problem of cancer is world-wide, no people is exempt from its ravages and in some as for example the Americans and the British, the increase in incidence is enormous and has doubled in frequency in the last few decades, reaching in some places the enormous total of 160 per 100,000 of the population. In Europe the incidence has been found to vary greatly in different countries and among these Italy can claim to have the lowest figures. On the American continent too, the variation is very considerable being low among the Indians and very high among the white races, while in Canada the difference between the French and other Canadians is striking.

For the bulk of our information in western lands we are indebted to the remarkable work of Frederick L. Hoffman, LL.D., Consultory Statistician, Prudential Insurance Company, to whose figures I shall refer frequently in this paper.

Unfortunately figures with regard to incidence among the Chinese are quite unobtainable and this can hardly be otherwise until an efficient system of death registration is introduced. Any attempt to estimate from the proportion of cancer patients to others attending hospitals, lends itself to so many fallacies that it is not worth considering.

All that will be attempted here is to try and arrive at some general conclusions as regards the relative frequency of the disease in different anatomical situations.

If these figures are handled with great care and no attempt made to read into them more than bare suggestions of facts, certain very interesting conclusions can be reached with regard to the distribution of the disease in various parts of the body.

*Based on a paper read before the Shanghai Medical Society, December 1927.
National Medical Association of China
VIIth Biennial Conference
Peking. January, 1928
For this purpose I have collected statistics on the subject from a number of hospitals in China, scattered over several different provinces, to which I have added my own figures for South Formosa. There is a certain amount of objection to this method owing to the fact that whereas the bulk of the figures apply to admissions to hospitals, my own are of operations only. On the other hand this is of less importance owing to the rule common in our crowded hospitals only to admit such cases if they are likely to be able to be dealt with surgically. Also my figures are large, totalling nearly 200 and are of special value in that practically in every case, however evident the diagnosis, the growths were subsequently sectioned and the diagnosis confirmed. Further owing to special conditions in Formosa there was little objection to surgical procedures and practically every case admitted was dealt with either by radical or palliative operation.

The total dealt with here amounts to 1,133 cases of malignant disease. The number therefore is sufficiently large to obviate the possibility of false conclusions built on a chance run of rare cases.

These figures have been largely drawn from a number of Hospital Reports, and care has been taken in choosing only those where sufficient detail is given to ensure tolerable accuracy. Unfortunately it is necessary to note in passing how few such reports are. Many which might otherwise be of great value are spoilt entirely by careless recording under such headings as "tumours", or note the growths without any full reference to their anatomical distribution, and so are useless for this purpose.

Only two attempts as far as I have been able to find out have been made to deal with this subject before. One of these by Dr. Bercovitz of Hainan (C.M.J. 1920) deals with operations only and in an area where evidently certain forms of the disease do not come for treatment. The second more recent paper is one by Dr. Braafladt of Tsinan (C.M.J. 1927) and deals only with cases in groups and cannot therefore be included in my Tables. Reference to certain points in this valuable analysis will be made at the end of this paper.

Before going further there are two sources of error in my figures which should warn against any attempt to give final value to the percentages calculated therefrom. In quite a number of places, especially in the country where the population is still very conservative as regards certain forms of operation, the amount of abdominal surgery done is small and the proportion of malignant disease of the internal organs is certainly estimated at too low a figure. But the most serious discrepancy undoubtedly occurs in regard to cancer of the uterus and cervix. My own personal experience is an example of this and shows
how careful one must be in drawing conclusions. A few years ago I should have been prepared to state that cancer of the cervix was much less frequent here than at home. Then with an enlarged staff I opened a gynaecological department which proved very popular. From that time I began to see cases of cancer of the cervix with enormously increased frequency and had eventually to revise my opinion on the subject, finally coming to the conclusion that this was the most common of any form of cancer. I have seen on more than one occasion three cases in a single day. While therefore certain groups of cases appear in my Table in smaller numbers than they undoubtedly exist, the converse has also to be borne in mind. External growths and such as cause specially painful symptoms are extremely likely to come to our hospitals where alone in many places surgical relief can be afforded. To take one example: cancer of the penis appears to be extraordinarily common and undoubtedly is so, but it probably seems to be proportionally more frequent than it really is as it is one of those growths that most typically fall into this class. These factors must be carefully considered when any conclusions on the percentages of the figures I bring forward are judged.

It is unfortunate that I am unable to divide the cases between male and female patients and this militates to some extent against their value though happily not in the comparative Table that I give here.

Keeping these limitations in mind we may now go on to consider the relative frequency of cancer in different anatomical areas in China and see how this compares with the sites most commonly affected in the West. To do so a standard of comparison is necessary and for this I have arbitrarily chosen the figures given by Hoffman of the Cancer Mortality of Chicago, 1924, in his Third Preliminary Report of the San Francisco Cancer Survey. It may perhaps be suggested that a comparison of cancer cases with cancer mortality is hardly a fair one but I do not think that such an argument can bear much weight. With a few exceptions, which will be clearly indicated here, cancer is a disease which kills. True in picked cases in certain anatomical sites the rising proportion of cures after surgical treatment is undoubtedly encouraging but such cases are so relatively few to cancer in the mass that the statement that cancer is a disease that kills is certainly correct.

In the following Table (Table 1) I give in the first column Hoffman's list of case sites for Chicago. In the second column will be found the percentage frequency in different areas. In the two following columns I give the corresponding figures for my 1133 cases among the Chinese.
<table>
<thead>
<tr>
<th>Parts</th>
<th>Cancer Mortality of Chicago-1924</th>
<th>Cancer Cases in Chinese Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td>Lips</td>
<td>7</td>
<td>.22</td>
</tr>
<tr>
<td>Tongue</td>
<td>34</td>
<td>1.07</td>
</tr>
<tr>
<td>Mouth</td>
<td>4</td>
<td>.13</td>
</tr>
<tr>
<td>Jaw</td>
<td>42</td>
<td>1.33</td>
</tr>
<tr>
<td>Throat</td>
<td>9</td>
<td>.28</td>
</tr>
<tr>
<td>Neck</td>
<td>32</td>
<td>1.01</td>
</tr>
<tr>
<td>Face</td>
<td>17</td>
<td>.54</td>
</tr>
<tr>
<td>Eyes</td>
<td>6</td>
<td>.19</td>
</tr>
<tr>
<td>Nose</td>
<td>5</td>
<td>.16</td>
</tr>
<tr>
<td>Ear</td>
<td>6</td>
<td>.19</td>
</tr>
<tr>
<td>Head</td>
<td>1</td>
<td>.03</td>
</tr>
<tr>
<td>Tonsils</td>
<td>5</td>
<td>.16</td>
</tr>
<tr>
<td>Cheek</td>
<td>5</td>
<td>.16</td>
</tr>
<tr>
<td>Hard palate</td>
<td>2</td>
<td>.06</td>
</tr>
<tr>
<td>Pharynx</td>
<td>8</td>
<td>.25</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>141</td>
<td>4.45</td>
</tr>
<tr>
<td>Stomach</td>
<td>775</td>
<td>24.49</td>
</tr>
<tr>
<td>Liver and gall bladder</td>
<td>256</td>
<td>8.09</td>
</tr>
<tr>
<td>Mesentery and Peritoneum</td>
<td>21</td>
<td>.66</td>
</tr>
<tr>
<td>Intestines</td>
<td>296</td>
<td>9.35</td>
</tr>
<tr>
<td>Rectum and anus</td>
<td>141</td>
<td>4.45</td>
</tr>
<tr>
<td>Ovary</td>
<td>47</td>
<td>1.49</td>
</tr>
<tr>
<td>Uterus</td>
<td>346</td>
<td>10.93</td>
</tr>
<tr>
<td>Vulva and vagina</td>
<td>10</td>
<td>.31</td>
</tr>
<tr>
<td>Breast</td>
<td>265</td>
<td>8.37</td>
</tr>
<tr>
<td>Skin</td>
<td>14</td>
<td>.44</td>
</tr>
<tr>
<td>Larynx</td>
<td>47</td>
<td>1.49</td>
</tr>
<tr>
<td>Lungs and pleura</td>
<td>75</td>
<td>2.37</td>
</tr>
<tr>
<td>Pancreas</td>
<td>105</td>
<td>3.32</td>
</tr>
<tr>
<td>Kidneys</td>
<td>63</td>
<td>1.99</td>
</tr>
<tr>
<td>Prostate</td>
<td>86</td>
<td>2.72</td>
</tr>
<tr>
<td>Bladder</td>
<td>157</td>
<td>4.96</td>
</tr>
<tr>
<td>Brain</td>
<td>14</td>
<td>.44</td>
</tr>
<tr>
<td>Bones</td>
<td>71</td>
<td>2.24</td>
</tr>
<tr>
<td>Testes</td>
<td>6</td>
<td>.19</td>
</tr>
<tr>
<td>Penis</td>
<td>7</td>
<td>.22</td>
</tr>
<tr>
<td>Heart</td>
<td>4</td>
<td>.13</td>
</tr>
<tr>
<td>Appendix</td>
<td>2</td>
<td>.06</td>
</tr>
<tr>
<td>General</td>
<td>31</td>
<td>.98</td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td><strong>3163</strong></td>
<td><strong>1133</strong></td>
</tr>
</tbody>
</table>
Cancer among the Chinese

A comparison of these figures gives evidence of some extraordinarily striking differences in relative frequencies, but before dwelling on these, and apologising for a certain amount of repetition of these important points, certain criticisms of my own figures must be made.

1. The percentages, generally speaking, are too high in the case of nearly all the Chinese figures. The reason for this is that undoubtedly the cases of cancer of the uterus (including cancer of cervix) are altogether too low for the reasons already given and the inclusion of a much higher number under this heading would necessarily reduce the percentages of the disease in other areas all round. It is impossible of course to estimate what this higher figure should be but even supposing that the number were doubled, which would be quite an outside limit, it would only somewhat modify but nowhere invalidate the conclusions that may be drawn from this Table.

Another warning that should be given is in relation to the evidence of internal visceral cancer. In the absence of postmortem examinations and the comparative rarity of abdominal operations in some regions, I have no hesitation in saying that the figures here are much too low. In this case however the totals are so low that even were they doubled it would not seriously affect the conclusions arrived at.

2. The last figures in the Table are unsatisfactory. Five percent of cases will be seen there to remain unclassified. About three percent, however, are growths in muscle or are glandular infections in unclassified sites. The other two percent have had to be entered here because of lack of care in the reports in indicating their true anatomical situation.

3. Hoffman's Table is a little confusing in a few minor points, especially with regard to such terms as throat, face, head, cheek. The difference between face and cheek is not quite clear and my own figures include both of these under face. Throat, when tonsils, larynx and pharynx are excluded is a term that I frankly do not understand. Head is also rather difficult as to whether tumours of the scalp should be included under this or under skin and this applies also to the skin cancers. It is a little difficult to know whether these latter should include all examples of the rodent ulcer group or whether they should appear in their several anatomical situations of ear, nose, etc. In this table they appear under skin which perhaps accounts to some extent for the difference between my own and Hoffman's figures.
4. Lastly, when the numbers run into single figures only, whether in Hoffman’s or my own Table, little if any weight should be put on them as the chance occurrence of an extra case or two in any one year might very seriously affect the percentages.

But when full allowance has been made for any errors that have been noted above or for other criticisms which might be made, there are still some definite and very striking conclusions to be drawn from these columns. Some inferences I shall now attempt to draw from the materials here set forth.

**Growths Involving the Buccal Cavity**

These are on the whole very decidedly higher in the Chinese than in the Chicago figures. The numbers in neither case are large and on this account too much weight must not be put on any argument derived therefrom. To some extent, though not entirely, the increase is due to a larger number of cancers of the mouth in my Formosan figures which include very large numbers of betel-nut eaters. The difference however between my own and the other Chinese figures is not greater than two per cent which suggests that the habit of betel-nut chewing does not in these regions give rise to any very large amount of cancer. The higher incidence of syphilis in Formosa might alone account for the difference while as regards the generally higher proportion of growths of this nature among the Chinese, it must be remembered that the disease is a very painful one and therefore likely to bring the patients to the hospitals where alone they can obtain surgical relief.

**Growths of the Head**

These again are much higher in the Chinese than in the Chicago figures, but here too great caution must be exercised in coming to conclusions unless it can be shown that the use of the term head is the same in both columns, see previous remarks on this point. On the whole however the difference would appear to be so great that even after these possible sources of error are allowed for the numbers are likely still to remain exceptionally high. The matter should certainly be given further careful consideration.

**Tumours of the Neck**

It is under this heading that the first really striking difference occurs. Here the numbers in both columns are considerable and the possibility of mistaken entries are very slight. The figures too bear out a general impression that growths of the neck are especially common among the Chinese. I am not prepared to make any suggestion as to the reason for this.
Alimentary Cancer

When we come to growths of the alimentary canal and its adnexa the position is entirely reversed and the figures are very striking. This is perhaps least so in the case of the oesophagus, for here any error is more likely to minimise than to exaggerate the difference. The Chicago figures may be taken as correct. I doubt very much if this is the case with the Chinese figures. In the latter the diagnosis must in almost every instance have been arrived at on clinical grounds alone and as stricture of the oesophagus of a non-malignant type is far from rare, it is almost certain that some of these cases were of this rather than of a malignant type, the diagnosis between the two being often very difficult. In the case of the stomach the difference between the figures is enormous and the numbers are such as to preclude mere statistical errors arising from the inclusion of rare cases. These figures are particularly interesting as statements have from time to time been made that cancer of the stomach is a specially common thing among the Chinese. The figures however bear out the writer's personal experience. He has done a large number of gastro-enterostomies for pyloric obstruction and duodenal ulcer but without ever meeting a case of cancer of the stomach. On one occasion he made this diagnosis at operation with considerable confidence only to find his diagnosis disproved by the patient's complete recovery after the operation and survival in good health for some years at least.

The same remarks apply to cancer of the intestines and the rectum though less markedly so in the latter cases. This being so it is natural to expect that growths of the liver would be relatively uncommon and this the figures given show to be the case.*

Uterus

On the other hand the numbers for cancer of the uterus are high in both cases, particularly so in the figures for the Chinese. My own belief is that the figures given for the Chinese fall far short of the actual incidence of the disease as explained in the earlier part of this paper. It is probable that uterine cancer ranks highest of all in the malignant growths in this country. Nor is this surprising considering how high the birth rate in the country districts is, or on the other hand how frequent gonorrhoeal affection is in the cities and what a lack in both cases there is of cleanliness. In my own experience cancer of the cervix occurs in comparatively young people, it has often been seen in the thirties and in two cases in women between twenty and

*Since writing the above my attention has been called to the special frequency of liver cancers in certain limited areas where clonorchis infection is common. The matter is dealt with in an Editorial in this issue.
The breast appears from the figures to be twice as common a site of cancer in the Chinese as it is in Chicago. The figures in both cases are so large as to preclude serious error. I must confess that this came as a great surprise to me as I was quite under the impression, an impression which I have stated elsewhere, that cancer of the breast was relatively uncommon. This is an excellent example of how false a mere impression may prove and on careful analysis of my own figures in Formosa, I find that my percentage of breast cancers still keeps this site of malignant growth high up in the table of frequency. But in saying this it must not be forgotten both here and elsewhere in this paper that we have no evidence whatever of the absolute frequency of cancer of the breast but only its relatively common occurrence compared with other malignant growths.

Skin

The figures for skin cancers are again very high among the Chinese compared with those in the American Table. They must however be discounted owing to the possible confusion in terminology referred to above. A good many rodent ulcers from face, ears, etc., have probably been included here and may have appeared under their anatomical situations in the American columns. When full allowance, however, has been made for this possible source of error there would still appear to be little doubt that cancers of the skin are relatively common. This is only what might be expected in the tropical parts of South China as skin cancers are proverbially common in tropical regions. Above and beyond these cases there is another source of such lesions that is but seldom met in western lands. Chronic ulcers of the skin especially of the legs and scars of self-amputated limbs are liable to this complication. Nor can this be considered surprising in view of the irritating and filthy applications so often applied to all kinds of ulcers and wounds. Here we have a typical form of cancer due to irritation and of a very low grade of malignancy.

Larynx, Lungs, and Pleura

Here there is a marked difference in favour of the Chinese over the American figures. In the case of the larynx, growths of which usually occur at a late age the greater expectancy of life in America would tell heavily, while in respect to growth of lungs and pleura considerable difficulty in regard to ante-mortem diagnosis often exists. While noting the difference in these figures it is impossible to draw conclusions of any value therefrom.
Pancreas

The same rule would appear to apply to pancreatic growths as to other malignant growths in the abdomen and whatever deduction may have to be made for difficulties of diagnosis there can be no doubt that they are relatively rare in China.

Kidney

The remarks on growths of the pancreas are equally applicable to those of the kidney. There seems to be no reason why these should be relatively rare here but they appear to be so.

Prostate and Bladder

In both of these the American figures are far higher than the Chinese figures and as the diagnosis does not present serious difficulties there can be little doubt that this is substantially correct. It is further borne out by the relative infrequency of benign prostatic enlargement which is correspondingly rare. It is somewhat difficult to account for this in view of the commonness of cystitis but to some extent it is undoubtedly the result of the short expectancy of life among the Chinese, prostatic cancer being a disease of old age.

Brain

Here the figures in both columns are too small to draw any conclusions whatever, especially in view of the great difficulty of diagnosis.

Bones

Growth of the bones would appear to be commoner among the Chinese—the reason for this is not evident and in any case the figures are so small as to be of little value.

Testes

The smallness of the figures again make it impossible to offer any opinion as regards tumours of these viscera.

Penis

The figures of cancer of the penis on the other hand are the most striking of any in this list. Had they occurred among the Chinese in the same proportion as among the Americans the number would have been 3. The actual number was 159 or over fifty times as common. One important source of error must however be noted, viz: that Hoffman's lists are mortality lists whereas our Chinese lists refer to the incidence of the disease. Unfortunately in the majority of cases of cancer this is not such a very serious matter, but in disease of the penis where operation if undertaken early promises a good proportion
of cures the discrepancy becomes of some importance. But the most
that could be made of this would be to multiply the American figures
by, at the outside, three or four leaving the Chinese figures more than
a dozen times as high.

While these numbers are very striking there is however nothing
extraordinary about them. Given a knowledge of disease conditions
out here one could postulate the enormous frequency of cancer of the
penis and it is interesting to find that there is no mistake in such
conclusions.

Gonorrhoea is appallingly common and is almost never efficiently
treated. Gonorrhoeal warts are extremely frequent and there is prac­
tically no attempt at cleanliness. Phagedaenic and other ulcerations
of the organ are also common and without proper treatment are very
prolonged. Indeed almost all the factors that we commonly associate
with the causation of cancer come into play here.

Other

Attention has already been called in a previous paragraph to these
cases and to the appreciable though small discrepancy that they
introduce into my Table.

VARIETIES OF MALIGNANT DISEASE

It is important to note here the rough proportions in which these
occur. Unfortunately the microscopic examination of all morbid
tissues removed is by no means universal and the value of these
figures is not therefore very great. Especially is this the case with
such growths as endotheliomata which often require a pathologist of
some experience to diagnose correctly. Such as they are we give the
figures in the following table.

Table 2.

Malignant growths classified according to their nature:

<table>
<thead>
<tr>
<th>Type of Tumor</th>
<th>Number of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcinomata, including Epitheliomata</td>
<td>858</td>
<td>75.7</td>
</tr>
<tr>
<td>Sarcomata</td>
<td>265</td>
<td>23.4</td>
</tr>
<tr>
<td>Endotheliomata</td>
<td>7</td>
<td>0.6</td>
</tr>
<tr>
<td>Gliomata</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,133</strong></td>
<td></td>
</tr>
</tbody>
</table>

Or in other words just over three quarters of the growths are
Carcinomata and nearly one quarter are Sarcomata. The incidence
of these latter growths is therefore relatively high.
In closing I must call attention to a series of carcinoma cases from the Shantung Christian University Medical School published in the C. M. J. of January 1927 by Dr. Braafladt and referred to above. I have not included these in my figures for the following reasons:

1. Only carcinomata are recorded.
2. Details of distribution are meagre.
3. The almost complete absence of uterine cancer (8 out of 144) is, I am convinced, most improbable and argues the difficulty of gynaecological work rather than the absence of the disease.

I had hoped to have been able to compare the incidence of malignant growths in different parts of the country. China is entirely too large a place for safe generalization about its diseases and many false conceptions have already arisen for want of a proper understanding of this. There is little doubt that if this could be done some striking differences would be apparent. It is possible for instance that stomach and intestinal growths are relatively much commoner in the north than the south and on the other hand that cancer of the penis is particularly prevalent in the south. There are distinct indications in these directions, but not of sufficient reliability to allow one to come to any definite conclusions. It is extremely probable however that marked variations will eventually be shown to exist and it is very desirable that this should be borne in mind.

Reference should also be made to the remarkable difference that exists between the figures here given for Chinese and the corresponding figures for Japanese especially as regards cancer of the breast. In Japan it would seem that cancer of the breast is infrequent amounting to less than 2 percent of the cancer mortality. An explanation of why this very marked difference exists might be a very real help in the solution of some of the difficult problems of etiology that surround this disease.

**Conclusions:**

1. Cases of malignant disease to the number of 1133 are here referred to.
2. The sites of these growths are given in 1076 of the cases.
3. According to our figures the most frequently affected organs are the Breast, Penis, and Uterus in this order.
4. It is probable, however, that if full figures could be given Cancer of the Uterus would come first in frequency.
5. Cancer of the Stomach, Intestines and internal viscera appear to be astonishingly rare compared to America. While this is probably
correct the difference may not be as great as the Tables suggest owing to failure in diagnosis and the comparatively smaller number coming for the treatment of abdominal diseases among the Chinese.

6. There is also a very striking difference in the incidence of Cancer of the Prostate and Bladder these being much commoner in America.

7. These figures apply only to the relative incidence in different parts of the body and have nothing to do with the numerical prevalence of Cancer in China. Until proper death certification by doctors qualified in modern medicine is enforced it is useless to speculate on the general frequency of the disease.

---

CANCEROUS DISEASES OF THE SKIN*

Dr. Frederick Reiss

When I was asked to say a few words on the skin cancers, I felt quite pleased to do so, because one of my former teachers, Professor Krompecher of Budapest added considerably to the study and classification of epitheliomata.

I think it is very important to speak on this subject which generally is not regarded as interesting, as on the whole there is very little interest shown about diseases of the skin. To show you how important the study of skin cancer is I will give just a few figures.

The death rate in England per 1,000,000 caused through skin cancer is:

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1912</td>
<td>25</td>
</tr>
<tr>
<td>1913</td>
<td>24</td>
</tr>
<tr>
<td>1914</td>
<td>26</td>
</tr>
<tr>
<td>1915</td>
<td>28</td>
</tr>
<tr>
<td>1916</td>
<td>29</td>
</tr>
<tr>
<td>1917</td>
<td>30</td>
</tr>
<tr>
<td>1918</td>
<td>31</td>
</tr>
<tr>
<td>1919</td>
<td>31</td>
</tr>
<tr>
<td>1920</td>
<td>29</td>
</tr>
<tr>
<td>1921</td>
<td>30</td>
</tr>
<tr>
<td>1922</td>
<td>31</td>
</tr>
</tbody>
</table>

These figures show that cancer of the skin plays quite a role in the death rate, but it also shows at once that there is a distinct increase in cancerous diseases of the skin. When speaking of the skin cancers, *A Paper read before the Shanghai Medical Society, December, 1927.*
Cancerous Diseases of the Skin

I do not mean only the skin, but all the adjoining organs, such as sebaceous and sweat glands as well as hair follicles, and naturally of primary and not metastatic cancers. On this point I must mention at once that in comparison with the metastatic cancers, skin cancers are relatively of a benign character. Their development is rather slow, they show a better reaction to therapeutic agents, there is very seldom metastasis and if there is it is of a mild character.

I have to say that the benignity of skin cancers is certainly very relative, because it may happen that a very benign and superficial epithelioma may suddenly turn into a deep destructive rodent ulcer.

The localisation of skin cancers is in most cases the face. I would cite the data of Winiwarter and according to his statistics: 85% were on the face, 9% on genitals, 5% on extremities, and only 1% was on the trunk. Professor Schamberg of Philadelphia observed amongst 3000 negroes with skin diseases only once a facial cancer, and this was in a mulatto woman. Most probably the pigment is the protecting agent against the irritative actinic rays.

According to the clinical appearances we divide the skin cancers into: superficial or flat epitheliomata; rodent ulcers or cancroids; and papillary epitheliomata. These are the common clinical features. Besides these there are the rare cases and finer histological differentiated cases, such as Basal cell cancer of Krompecher, and its variations; the syringocystadenoma; the epithelioma adenoides cysticum; the basalioma (endothelioma) multiplex capillitii Spiegler, Paget's, Bowen's and Little's diseases.

It is certainly a very difficult thing to differentiate between the above mentioned types and I believe that even a specialist with sound knowledge of skin pathology has a hard task to make a right diagnosis.

There are certainly metastatic skin cancers, but these do not belong to my subject and therefore I leave them out entirely.

I would like first to deal with the most benign type, the superficial skin cancer. It goes without saying, that all cancers of the skin are lesions of adult age, although I would like to mention here the very interesting exception reported by Percival Potts who diagnosed a cancer in an eight years old chimney sweep. This case is decidedly an exceptional one, and as a rule we very seldom find skin cancers under the age of thirty.

The superficial epithelioma makes its start with a transparent pearly papule, sometimes two or three of the same kind and size. As the result of itching or other irritation the patient starts to scratch and these scratched patches become excoriated. Later on the excoriated
part will eventually become covered with a brownish-yellowish thin crust, which on removal shows a sero-sanguinous oozing. After a lapse of several months or even years the formation of the ulcer starts which generally is sharply defined, rounded, indurated, and on close inspection one may see on the edge of each ulcer small pearl-like papules. These ulcers are but very slowly progressive, sometimes having a tendency to heal in the center, but also going deeper. The regionary lymphatic glands are very seldom infiltrated and the general health not very much affected.

The rodent ulcer is the kind of epithelioma which has a distinct tendency to penetrate into the deep tissues even involving the bone. It has its start with a brownish cherry sized tubercle, covered with smooth shining skin. Sometimes another focus may develop in the vicinity of the first one. These small tubercles start to grow and after a lapse of months or 1-2 years, ulceration takes place, causing a considerable excavation of tissues. The edges of these rodent ulcers are never smooth, but uneven, and craterlike. Lymphatic glands are very often involved. The favourite seat of these ulcers is the face.

I would like to mention here the deepseated epithelioma, which is a variety of the former one, and which has its seat in the corium or subcutaneous tissues or sometimes it has its origin as an extension of a cancer from the neighbouring mucous membrane. This form of epithelioma is very malignant, showing a rapid course, and patients often succumb through exhaustion.

The papillary type always has its start from a papillary growth, like warts and occurs in most of the cases in old age, but I have also experienced such epitheliomata in young patients as a result of imperfectly finished cauterization of warts.

The seat of such epitheliomata is generally the face, particularly the lower lip and eyelids. It may also be localized on the penis or labies, occasionally on the back of the hands. As I have already mentioned it starts from a wart and grows very rapidly up to the size of a cherry having a strawberry like surface. These growths are very often pedunculated and of a spongy character, very progressive and malignant.

Now just a few words about the Krompecher Group.

The syringocystadenoma appears mostly on the chest, neck or shoulders between the ages of 10-20 years, pinhead to pea sized papules, of a reddish brownish colour sometimes resembling a syphilitic papule. They never show scaling. They never show malignancy, but still their number sometimes goes up to 100 papules.
The epithelioma adenoides cysticum has been observed at the age of puberty, when the sebaceous glands show physiologically an increased activity. It always occurs on the face, where the sebaceous glands are in bigger groups, such as the nasolabial folds, the chin or forehead. It starts as a pea sized papule, covered by practically normal skin and after reaching a certain size the further development stops, although Jarisch saw one case developing into a rodent ulcer.

The Basalioma multiplex capillitii Spiegler or Endothelioma is a very rare disease, which always affects the scalp and causes growths of elastic tumours varying in size from a bean to a small orange. These tumours sometimes cover the entire scalp like a wig.

Pagets disease is a special affection of the nipples, mostly of the right breast, and occurs at about the age of 40-50 years. It resembles a chronic resistant eczema, but after a certain time the skin becomes infiltrated, the nipple retracts and one feels under the parchment like skin a hard infiltration, the starting tumour. This disease is accompanied with itching, burning and after a lapse of a couple of years the picture of a cancerous disease may be fully developed. In this time the axillary glands are naturally all involved.

The multiple benign cystic epithelioma has been described by Fordyce, which is probably the same kind as the Syringocystadenoma of Krompecher.

To speak of the Bowen and Little epitheliomata would lead to a very detailed histological explanation, which I prefer to avoid on account of lack of time.

I also do not wish to go into details about the pathology of all the groups, but I hope you are satisfied that epitheliomata have their origin in the epidermis or in the epithelial lining of glandular structures of the skin and show an abnormal downward growth into the corium regardless of the neighbouring tissues. In the centre of such a growth one finds in some cases the so called "Pearly bodies".

Now I come to speak of the etiology of the epitheliomata, which I would explain very shortly; it is unknown, as the whole question of cancer is still in darkness.

I do not wish to speak of the numberless experiments with tar, arsenic, etc. because all these experiments do not give us any precise idea of the etiology, they simply show us that after a certain irritation cancer may develop. This applies especially to the cancerous diseases of the skin. Chronic irritation is always a preceding factor, as for instance the continued pinching of eye-glasses, after burns, after lupus, after X-Ray exposures, etc.
But what the predisposing causes are which start the growth of the cancerous tissue, is unknown. The fact that most of these cancers start in adult age, has a certain relation to the senile involution of the skin, which is most marked first on the face, and which is also the favorite seat of the skin cancers. Maybe there is some disturbance in the physiological equilibrium of the epithelial and the connective tissue for which I give you a good example in Xeroderma pigmentosum, where in the early stage also the connective tissue starts to disappear and after which we see the turning of the skin into a preasenile condition.

No doubt in this disease the actinic rays play a very important role, as I believe they are the cause of most of the cancers of the face, but why in one individual and not in another?

A score of etiological factors, bacteria, fungi, vitamins have been made responsible for the cause of cancer, but not one has been proved definitely.

It will be interesting to mention that lately two scientists Winzer and Melzer believe that cancer is due to the Radio irradiation of the ground. This means that cancer or the formation of other tumours was observed among inhabitants of houses which were built above very radioactive subsoil, especially where the water strata were very active.

The increased number of "Lung-cancers" in the "Erzgebirge" in Germany is explained by the fact that in this region are the most radioactive springs of Germany. (Over 5600 Mache-Units)

So we have finally also a geophysical explanation of the dark etiology of cancer.

With the treatment I would be very short. By all means it should be radical, whether you make use of the knife or cautery, or fulguration. Arsenic paste and caustic potash have been recommended, but they are not as valuable as the above mentioned therapeutic agents. In all cases I would suggest an after-treatment with X-Rays or Radium, but only with great caution.
Toxemias Occurring during Pregnancy

A BRIEF SUMMARY OF THE TOXEMIAS OCCURRING DURING THE LATTER PART OF PREGNANCY.*

Susanne R. Parsons, M.D.

At present there is a vast amount of work being done on the toxemias of pregnancy in an attempt to determine their etiology and the best method of treatment. It seemed therefore that a brief summary of the more important work up to date might be of interest.

Classification of the toxemias. After making a careful study of a long series of cases the toxemias were found to fall into five main groups. Stander and Peckhame, 1926, proposed the following classification: 1. Eclampsia, 2. Pre-eclampsia, 3. Chronic nephritis complicating pregnancy, 4. Eclampsia superimposed upon nephritis, 5. Low reserve kidney.

1. Eclampsia is characterized by convulsions, coma, edema and high blood pressure. It usually occurs during the last third of pregnancy and 60% of the cases are found among primiparous women. The urine shows large amounts of albumin, the blood chemistry shows marked increase in uric acid, sugar, lactic acid and inorganic phosphorus with a decrease in the carbon dioxide combining power. Three to six weeks postpartum the patient is normal with no permanent damage to the kidneys and the subsequent pregnancies are usually normal.

2. Pre-eclampsia is characterized by the same picture but for the absence of convulsions and coma. The recovery postpartum is also prompt with no resulting kidney damage.

3. Chronic nephritis complicating pregnancy is characterized by permanent kidney damage, increasing with each succeeding pregnancy and progressively higher blood pressure with each pregnancy. Chronic nephritis occurs in two groups of cases, those resulting from a previous attack of scarlet fever, tonsillitis, myocarditis or some acute infectious disease prior to the first pregnancy, and those resulting from the strain of previous pregnancies. Chronic nephritis usually occurs in multiparae during the last two thirds of pregnancy and is characterized by edema, albuminuric retinitis or retinal hemorrhages, high blood pressure, much albumin in the urine, and the blood chemistry shows an increase in the nonprotein nitrogen and urea nitrogen. The urine shows an increased ammonia nitrogen and relative decrease in the urea nitrogen. Postpartum the albumin and high blood pressure persist, the diastolic pressure remaining over 90 and the urine showing one half gram of albumin per liter at the time of discharge from the hospital.

4. Eclampsia superimposed on chronic nephritis is characterized by convulsions superimposed on the above picture. The convulsions are as a rule thought to be due to the eclampsia, though the possibility of true nephritic coma and convulsions is always to be borne in mind.

5. Low reserve kidney may occur in any parity, usually after the eighth month. Usually the blood pressure is not over 150/90, the urine shows less than 2 grams of albumin per liter, the blood and urine are normal chemically. Postpartum there are no abnormal findings and there is no kidney damage shown in future pregnancies. In normal individuals all the glomeruli do not function at capacity at any one time giving an estimated margin of safety of about 50% or "kidney reserve". In this group of toxemias the kidney reserve seems inadequate to meet the extra demands of pregnancy and albumin passes through the glomerular epithelium, and a moderate elevation in blood pressure occurs.

The search for the causal agent in eclampsia, the most serious of these five groups, has not so far met with success. That there is a disturbed metabolism is evident from the changes in the blood findings of eclamptic patients. Histamine, then albumose were thought to be the toxic agent but experimentally gave central necrosis of the liver lobule (f). More recently McNider, Helms and Helms (c) have done some interesting work on uranium nitrate intoxications in pregnant dogs, showing a symptomatology and pathological picture strikingly similar to eclampsia. Titus and Dodds (g) have advanced the hypothesis that the convulsions are due to a relative hypoglycaemia, basing this statement on blood sugar readings taken before, during and after eclamptic convulsions. They feel the convulsion is due to a rapid fall in the blood sugar, and explain the hyperglycaemia findings of other workers as due to the muscular activity during a convulsion.

Usual Range of Certain Constituents of the Blood. (h)

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Normal Nonpregnant</th>
<th>Normal Pregnancy</th>
<th>Nephritic Toxemia</th>
<th>Eclampsia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonprotein nitrogen</td>
<td>30-35</td>
<td>25-30</td>
<td>35-100</td>
<td>25-35</td>
</tr>
<tr>
<td>Uric acid</td>
<td>2.0-3.5</td>
<td>2.0-3.5</td>
<td>3.5-9.0</td>
<td>4.0-12*</td>
</tr>
<tr>
<td>Blood urea nitrogen</td>
<td>13.4</td>
<td>13.3</td>
<td>13</td>
<td>13.4</td>
</tr>
<tr>
<td>Sugar</td>
<td>70-100</td>
<td>70-100</td>
<td>70-100</td>
<td>120-185*</td>
</tr>
<tr>
<td>Lactic acid</td>
<td>20-35</td>
<td>20-35</td>
<td>35-80</td>
<td>50-200*</td>
</tr>
<tr>
<td>Inorganic phosphorus</td>
<td>1.5-3.0</td>
<td>1.5-3.0</td>
<td>1.5-3.5</td>
<td>2.5-3.5*</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>55-65</td>
<td>40-50</td>
<td>40-50</td>
<td>15-55</td>
</tr>
</tbody>
</table>

*Radical changes.
With the true etiology of eclampsia still undetermined, the treatment remains necessarily empiric and has varied widely with the succeeding theories as to the underlying cause of the disease. Up until 1910 it was thought to be entirely dependent on the product of conception for its origin and as a result the treatment consisted of the removal of the product of conception immediately and at all costs. Gradually it was observed that some of the cases died even after delivery and that others recovered without delivery. Then with the advance in knowledge of the blood and urine chemistry of eclampsia we began to suspect the problem was not so simple as at first was supposed. The old methods of treatment consisted, briefly, of delivery at once by the quickest methods possible, namely Caesarian section or manual dilatation of the cervix. Sweating, violent purgation, subcutaneous saline (in spite of the fact that we now know there is a salt retention during an attack of eclampsia) free venesection, 1000-1800 cc. and the use of chloroform as an anesthetic was the accepted therapy. The mortality under this treatment ranged in intrapartum cases from 12 to 50% depending on whether the case was mild or severe.

In about 1910 a Russian, Stroganoff, reported a long series of cases which he had treated by narcosis and with a mortality of only 2.5%. This was such a startling percentage as well as method that it merited prompt investigation. It was found that his cases consisted largely of patients seen early and with a mild form of the disease, but even so the reduction of mortality was startling. His method consisted in administering large doses of morphia and chloral hydrate, until the respiration was reduced to 4—6 per minute, keeping the patient free from outside stimuli, and allowing labor to set in or progress with no or the least possible operative interference. He however still used chloroform anesthesia.

In 1922 the British Congress for Obstetrics and Gynecology analyzed all the available cases and Eden at that time divided the cases into mild or severe according as to whether they had two or more of the following findings; 1. persistent coma, 2. pulse rate more than 120, 3. temperature more than 103°, 4. more than ten convulsions, 5. urine containing a solid coagulum of albumin on boiling (10 gms. by Esbach), 6. absence of edema. The cases were also divided for purposes of analysis into antepartum, intrapartum and postpartum eclampsia. The result of this analysis showed that best results followed the conservative method and the worst followed the use of Caesarian section and forcible delivery.
In 1926 Asa Davis (a) analysed a series of 879 cases of eclampsia from the New York Lying-In Hospital. In this series there were 414 antepartum, 118 intrapartum (74 onset doubtful), 234 postpartum, 16 discharged undelivered and 23 died undelivered. Of these 54 cases were delivered by Caesarian section, the conservative section giving a mortality of 22% and vaginal section giving a mortality of 19%. If this series is divided into those cases in which radical treatment was used up to 1919 and those since then in which conservative treatment was used, we have in the former a maternal mortality of 37%, in the latter 15%. The foetal deaths 1905 to 1919 were 55%, since 1919 were 35%. Thus the conservative treatment has lowered the maternal death rate at the New York Lying-In Hospital by 22% and the foetal death rate by 20%.

Williams (h), Johns Hopkins Hospital reports a series of 275 cases of eclampsia with a reduction in maternal mortality among antepartum and intrapartum cases. The mild cases of eclampsia show a reduction from 14.2% to 1.9%. The severe cases show reduction from 38.8% to 21.3%. Or to express the difference more graphically, in the second series the results in the mild cases were 7.5 times and in the severe 1.8 times better than in the first series. The postpartum cases show practically no change as they were seen too late to permit of much being done for them. The foetal mortality is about the same in the two series.

**Results in 275 Cases of Eclampsia, Johns Hopkins Hospital.**

<table>
<thead>
<tr>
<th></th>
<th>Series I</th>
<th>Series II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antepartum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mild</td>
<td>15.1</td>
<td>0.0</td>
</tr>
<tr>
<td>severe</td>
<td>35.7</td>
<td>20.4</td>
</tr>
<tr>
<td>Intrapartum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mild</td>
<td>12.5</td>
<td>4.17</td>
</tr>
<tr>
<td>severe</td>
<td>50.0</td>
<td>23.8</td>
</tr>
<tr>
<td>Postpartum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mild</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>severe</td>
<td>40.0</td>
<td>41.6</td>
</tr>
</tbody>
</table>

The conservative treatment as it is generally used consists of the following: the patient is kept in a dark quiet room, shutting out all stimuli which might tend to bring on a convulsion. A special
nurse is in constant attendance, keeping the mouth and pharynx free of mucus to prevent an aspiration pneumonia. The head of the bed is lowered to assist in this. Water and milk are given freely by mouth if the patient is conscious. Morphia gr. $\frac{1}{4}$ is given on admission and repeated at intervals. Blood and urine are withdrawn for examination. The convulsions are controlled by the use of either chloral hydrate by rectum or magnesium sulphate by vein, given at intervals as needed. There is no catharsis or sweating, as we know the edema is a protective mechanism and that patients with edema do better than those without it. There is no attempt at prompt delivery or operative procedure but the patient is allowed to go into labor spontaneously and deliver spontaneously if possible, or when the cervix is fully dilated, forceps are applied using gas or ether anesthesia.

Patients treated in this way frequently recover from the one attack of eclampsia and later go into labor and deliver spontaneously with no subsequent return of the attack. In Dr. Williams’ series this occurred in 16 out of 84 cases. This goes to show that death of the foetus or the termination of the pregnancy is not essential to recovery from the attack of eclampsia. Chloroform, ether, gas and ethylene are to be avoided if possible as experimentally we know that fifteen minutes anesthesia with any one of them, gives blood changes similar to those in eclampsia, namely an increase in the uric acid, sugar, lactic acid and inorganic phosphorus with a decrease in the carbon dioxide combining power.

Treatment. Of the various suggested methods of treatment perhaps one should mention Miller’s liver extract injections (d) which it is claimed prevents convulsions in preeclamptic cases, improves nephritic and eclamptic cases. Further experimental confirmation of the clinical evidence should be at hand however before this method of treatment can be recommended.

Magnesium sulphate solution by vein has been widely used as a narcotic in controlling the convulsions. Lazard (b) reports a large series of cases in which it was also used prophylactically antepartum for preeclampsia. There can be no doubt that a 10% solution of magnesium sulphate given intravenously in 20cc. doses helps to control the convulsions. Lazard and others claim no harmful blood changes follow its use. Stander (f) reports a lowering of the C02 combining power in the blood, an increase in the blood sugar and a marked fatty degeneration of the liver when magnesium sulphate was given by vein to experimental dogs. If this is true magnesium sulphate should be used with caution, if at all.
Treatment of eclampsia by glucose intravenously with or without insulin is generally used to combat the acidosis. If Titus and Dodds (g) are correct in their assertion that convulsions are due to a sudden fall in the blood sugar it would seem the use of insulin is contraindicated. Sufficient data however is not yet available to justify this conclusion.

The urgent need for a safe method of anesthesia enabling a rapid delivery with a minimum of shock and no additional strain on the patient's metabolism, seems to be met by the use of novocain as an anesthetic. Experimental injections of huge doses of this drug in dogs have given no changes in the chemistry of the blood. It seems therefore that we now have at our command a safe anesthetic which may be used for spinal or local anesthesia without fear of increasing the toxemia.

To summarize then, the possibilities of the treatment of eclampsia so far as our present knowledge of the disease goes; the cases are first divided into mild or severe. In the mild group the best results have been obtained (2% mortality) by the use of the modified Stroganoff treatment, using morphia and chloral hydrate narcosis, allowing the patient to deliver spontaneously if possible, giving intravenous glucose to combat the acidosis if necessary and keeping up the body fluids by free use of water and milk by mouth.

In the severe cases prompt delivery may now be accomplished by the use of spinal or local anesthesia, whether Caesarian section, forceps or version is done. This does not mean of course that we are recommending the old traumatic methods of delivery. Shock and trauma are to be avoided so far as possible whatever method of delivery is chosen. The CO₂ combining power should be carefully watched in all cases, and should be done every two hours in comatose cases. If it falls to 30 volumes percent, 15 to 30 units of insulin should be given intravenously with protective glucose solution by vein, using glucose gm. ii to units i of insulin. This is purely to relieve the lowered alkali reserve. Morphia is the choice of narcotics, not only for its efficacy but for the fact that it increases slightly the CO₂ combining power (55-70%). Venesection is not to be used as it lowers the blood pressure and the high diastolic pressure is probably a protective mechanism essential for elimination. The effect of even free venesection is transient and the removal of one liter of blood would not go far toward the removal of the toxin. The patient is fortified for the added cardiac strain of the convulsions by a course of digitalis. Fluids are given by rectum until consciousness returns when the patient is encouraged to take water and milk by mouth in large quantities.
Toxemias Occurring during Pregnancy

Daily quantitative albumen determination is done on a 24 hour specimen of urine and when the albumin falls to 1 gm. per liter, the patient is put on a low protein diet, high in carbohydrates. Usually by the end of 3 weeks postpartum she may be given a general diet and no further trouble is to be anticipated.

**Details of Stroganoff's Modified Method**

<table>
<thead>
<tr>
<th>Time</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>On admission</td>
<td>Morphia sulph. gr. ¼ (h)</td>
</tr>
<tr>
<td>1 hr. after admission</td>
<td>Chloral hydrate gm 2 in 100 c.c. of normal saline and 100 c.c. milk by rectum (or by mouth if conscious).</td>
</tr>
<tr>
<td>3 hrs. after admission</td>
<td>Morphia gr. ¼ (h)</td>
</tr>
<tr>
<td>7 '' '' ''</td>
<td>Chloral hydrate gm 2</td>
</tr>
<tr>
<td>13 '' '' ''</td>
<td>'' '' '' 1.5</td>
</tr>
<tr>
<td>21 '' '' ''</td>
<td>'' '' '' 1.5</td>
</tr>
</tbody>
</table>

**References**


The problem of how to deal with hypodermic solutions for ward and operating room use in hospitals on an economic principle is one which has caused much speculation and trouble during the past twenty years. Many methods are available and we thought that for the guidance of some of the smaller hospitals in China a few notes on some of the methods tried here might be of value. We would state that in the first place great care has to be exercised when dealing with hypodermic solutions. The solutions should always be prepared with freshly distilled water and the water should be distilled from glass if possible, as metallic contamination, however slight, is something which should be avoided. Where possible 100 c.c. of the hypodermic solution should be prepared at one time or multiples of this and it is certainly advisable to use only the metric system in dealing with hypodermic solutions. To prevent the possibility of accident the alkaloidal salt weighing should be checked by a second person—we have consistently carried out this procedure here during the past seven years and have never had an accident.

The following methods are available for dealing with solutions intended for hypodermic administration to patients in the wards of hospitals.

1. Hypodermic tablets.
2. Solutions supplied in glass stoppered bottles, 25 c.c. each bottle.
3. Solutions supplied in 10 c.c. flasks with rubber caps.
4. Ampoules.

We have experimented with all these methods in this hospital and will briefly relate our experiences.

1. **Hypodermic Tablets:**—In 1921 we used only hypodermic tablets here—but found this method of dealing with ward hypodermic medication very expensive and troublesome. Each ward had to carry a stock of freshly prepared distilled water, the tablet had to be dissolved in the water in a small receptacle of some kind—the water brought to the boil and cooled to body temperature before the injection could be given.

2. **Glass Stoppered Bottles:**—We experimented with blue coloured ribbed glass stoppered bottles of 30 c.c. capacity. These were sterilized in the usual way and 25 c.c. of the sterile hypodermic solution added to each and this was sent to the wards as a stock of sterile hypodermic
solution. We found that these solutions were sterile for about one or two days only. We append herewith a comparative table of the results of an examination for the presence of bacteria in our various hypodermic solutions conducted by our department of Bacteriology.

<table>
<thead>
<tr>
<th>Table I</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Solution</strong></td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Atropin &amp; Morphin</td>
</tr>
<tr>
<td>Atropin</td>
</tr>
<tr>
<td>Morphin &amp; Atropin</td>
</tr>
<tr>
<td>Cocaine</td>
</tr>
<tr>
<td>Caffein</td>
</tr>
<tr>
<td>Caffein</td>
</tr>
<tr>
<td>Morphin</td>
</tr>
<tr>
<td>Morphin</td>
</tr>
<tr>
<td>Morphin</td>
</tr>
<tr>
<td>Novocain</td>
</tr>
<tr>
<td>Strychnin</td>
</tr>
<tr>
<td>2 Controls</td>
</tr>
</tbody>
</table>

A reading of 4—indicates presence of colonies on blood agar plates grown very closely together; 2—growth of about 400 col. per c.c. 3—between 2—and 4—;—indicates no growth.

Fresh solutions—i.e. those made on the day of examination—received from pharmacy were sterile. A bottle in the pharmacy prepared for filling was also sterile. The organisms found varied in their morphology—Gram positive cocci and bacilli and gram negative bacilli all being present.

Explanation of Table I:—Twelve different hypodermic solutions were examined bacteriologically for sterility—one lot was taken from the pharmacy, one from a surgical ward and one from a medical ward. The results show that all freshly prepared solutions were sterile, that solutions which lay in the ward for periods ranging from two to ten days were all contaminated in a greater or lesser degree with the notable exception of solutions of Caffein Sodium Benzoate which were found to give negative reactions after two weeks standing in the wards. This of course was to be anticipated from the presence of Sodium Benzoate in the solution.
3. Flasks with Rubber Caps:—We decided that method number two was useless owing to the contamination of the solutions on standing a few days, therefore we tried out this new method of having small 10 c.c. flasks blown in our glass-blowing department from Jena glass. These were sterilized in the usual way, about 9 c.c. of the sterilized hypodermic solution added under sterile conditions and the sterilized rubber cap fitted to the flask. The idea was to pierce the rubber cap with the sterile needle of the hypodermic syringe, withdraw the one c.c. of solution required then withdraw the needle and in this way avoid having to expose a large surface of liquid to contamination. But we found that these solutions also became unsterile and therefore unfit for use in a few days.

The flasks cost us $0.20 each and the small rubber caps were $0.10 each excluding the price of the alkaloidal salt, each injection therefore cost us approximately one cent. The flasks could be used many times.

It is interesting to note in passing that solutions of Caffein Sodium Benzoate of varying strength when supplied in these flasks with rubber caps acted on the rubber and caused the margin to be eaten through in about 10 days.

Ampoules:—In China the ideal method of dealing with hypodermic solutions is the ampoule method—granted the solution has been prepared in a sterile manner and the ampoule sealed properly there is absolutely no possibility of contamination.

For the sake of those hospitals which do not possess a copy of the British Pharmaceutical Codex (1) 1923 we will quote the monograph appearing there on Ampoules.

"Ampoules are small glass capsules with a capacity of 1 to 5 mils, or sometimes more. The glass ampoules may be obtained of various shapes and sizes, and in white or amber glass. The glass must be alkali-free and should preferably be of high chemical resistance, of such quality that ampoules, filled with a 0.1 per cent solution of narcotine hydrochloride, heated in a steam-bath at 99°, show no precipitate after an hour, as certain substances, such as amylocaine and morphine salts, ordered in solution in ampoules are decomposed in the presence of small quantities of alkali. The ampoules may be filled with a hypodermic syringe, which may be attached to a burette, or with the aid of any similar contrivance for injecting the solution into the ampoule. The filled ampoules should be sealed in a blow-pipe or bunsen flame, and may be sterilised by placing for half an hour in boiling water, to which has been added a small quantity of salt to raise the boiling point. A little
methylene blue added to the water serves to detect imperfect sealing. Another method is to sterilise the empty ampoules by boiling in distilled water for half an hour, and to prepare and sterilise the solution, with which they are to be filled, in a glass beaker without a lip and covered with a clock-glass. The sterilised empty ampoules should be placed mouth downwards in the solution, and the beaker covered with the clockglass. The beaker should then be cautiously heated until the liquid is warmed sufficiently to expel nearly all the air from the ampoules. It is then set aside to cool, the solution being drawn into the ampoule by the contraction of the small amount of air and vapour left in it, the ampoule is thus nearly filled. When cold the ampoules are removed and sealed in a blow-pipe flame. The sterilisation may be completed as shown above. The ampoules should bear a label indicating the quantity of medicament contained in a definite volume of the liquid.

One of the great advantages to be gained by using ampoules is that a large number can be prepared at one time and stored for emergency or future use in the hospital. Take for example an operating room in some hospital in China where 5 injections of Morphine Hydrochloride are required per day. A six months supply would be approximately 720 ampoules—these could all be prepared and filled at one time which would mean that Hypodermic Solutions would only require to be made twice a year.

**The Economics of Hypodermic Medication:**

1. **Tablets:**—Many hospitals in China possess a “stokes” hand tablet machine and probably they prepare all their own hypodermic tablets—in these cases the tablets will be much cheaper than those purchased from wholesale chemical houses. But for the sake of comparison let us take one commonly used hypodermic tablet and find out from the price list of various well known and reliable drug houses their price per hundred.

   Morphine Hydrochloride \( \frac{1}{4} \text{gr. (0.016)} \) A. Per 100 \$2.00  
   B. Per 100 \$1.50

Taking Morphine Hydrochloride at the last price we paid \$13.20 per ounce—approximately \$0.50 per gramme—one gramme would be sufficient for 70 tablets of \( \frac{1}{4} \) grain (0.016) each or for 70 ampoules of 1 c.c. capacity—where one c.c. contained the equivalent of \( \frac{1}{4} \) grain (0.016) morphine hydrochloride. Ampoules vary greatly in price—they are usually bought in 1000 lots at one time. We would suggest that quotations should be requested before placing the order. We have purchased 1 c.c. ampoules at \$30.00, per 1000 at \$25.00 per 1000 and \$10.00 per 1000.
Taking the cost price at $10.00 per 1000 ampoules (empty), 100 would cost $1.00. 100 $\frac{1}{2}$ gr. morph. hyd. would cost $0.71.

Total cost of filled ampoules $1.71 per hundred.

Total cost of Hypodermic Tab. $1.75 (app) per hundred.

Filled ampoules are therefore approximately the same price as hypodermic tablets and much more convenient for immediate or emergency use.

In our calculations we have omitted the expense necessary to prepare distilled water, to seal the ampoules and to sterilize them. These would be general pharmaceutical expenses and in many hospitals the only item worth noting would be the time of the pharmacist spent in preparing and filling the hypodermic solution.

**Summary:**

1. Hypodermic tablets, unless made in the hospital, are approximately as expensive as filled ampoules.

2. Glass stoppered bottles are unsuitable for carrying reserve stocks of solutions intended for hypodermic use.

3. Small 10 c.c. flasks with tight-fitting rubber caps which can be punctured by the needle we have found to be unsuitable for stock hypodermic solutions.

4. Ampoules—if ampoules can be purchased at a cost of approximately $10.00 per 1000—this is the best method available in China for dealing with hypodermic solutions in hospitals and we have found is not more expensive than any of the other methods tried.

**Reference:**—

1. B.P.C. Page 1179.
Wuhu General Hospital, M. E. F. B.
In 1888 the first hospital in Anhwei province was erected at this site (I ChiShan) and named The Wuhu General Hospital. It was well constructed and for many years was considered a good hospital. It contained forty five beds. As far as the writer is able to determine it always received women and children as well as men. There was never any problem regarding housing women patients in separate buildings. They were located on the second floor of the old building just as they are in the new building. The patients considered it quite proper because the hospital had never, by providing separate buildings, suggested that it was not proper.

In 1916 the need for a new building became pressing. Steps were taken to study the problem and prepare a building program. The strategic location as the only hospital in the commercial center and port city of the province, with excellent steamer communications and an ideal site overlooking the Yangtze, made it seem necessary to build a thoroughly modern plant. Because of these features the China Medical Board offered to give financial assistance to the program. Without this assistance and the helpful advice of their officers the present plant would never have been possible.

Because of various difficulties after the war other funds were held up for several years. In 1923 the old hospital building was completely destroyed by fire. This loss changed the pressing need into an imperative one. The patients were housed in separate temporary buildings that were entirely inadequate. Some excavations were made in 1923 and 1924 but it was not until two years ago that actual building operations began.

The building was nearing completion last spring when the revolution arrived in this part of the country. Things looked rather dark. No prophet dared to speak words of hope. Institutions on all sides were closed. Soldiers and agitators threatened occupation on innumerable occasions. But the workmen remained on the job and the work went forward. Not a day was lost due to any labor trouble. There was some delay due to failure of supplies to arrive from down river. However, early in December the patients were moved from the temporary buildings into the warm wards and rooms of the new building. That was a day of thanksgiving.

The general shape of the building is that of a letter E with the middle arm turned backwards and pointing a little to the west of north.
The main entrance and the two end arms or wings then point a little east of south (almost south). Only one of the two wings was built at this time, providing bed capacity for seventy-five patients. Considerable excavation was necessary to secure enough space for the building. From the front there are three stories while in the north arm there are six. The kitchen, laundry and engine room are in the north arm below the level of the floors that show from the front of the building. Yet they project from the hill side so as to have light and ventilation on three sides.

The plans shown with this article give the interior arrangement of the buildings, so a detailed description is unnecessary and attention will be called only to items which seem to be of special importance. A statement of the reasons for choosing a certain arrangement or procedure is often more helpful than detailed descriptions.

The ambulance and ricksha driveway leads to the covered admission entrance on the first floor. Inside this entrance is a large lobby with seats. The patient enters this lobby and is registered at the business office on the right. The doctors' examining office, the emergency surgery and the admission bath are just opposite at the other side of the lobby. These rooms are heated by special steam lines so they are always warm. Here the patient is seen by the doctor (unless he has already been seen at the O.P.D.) and is given any necessary immediate treatment. He is then given a bath and clothed in clean hospital clothing; his own clothing being stored just across the hall. The elevator which also faces the lobby then carries him to the proper floor and he is taken to the ward. Private room patients are generally given a bed or tub bath in their own room.

Just over the admitting business office and connected by a dumb waiter is the book-keeping or English business office. This faces the large guest lobby into which open two small waiting rooms for visitors or special private patients. Near by is a doctors' examining room where these private patients are seen. The picture of this lobby shows something of the effort made throughout the building to take away the institutional appearance. By giving attention to design and finish it was possible to make parts of the building more hotel or home like, and thus much more pleasing to patients and their friends.

The Chapel is located across the guest lobby directly in front of the main entrance. This position in the center of the building makes it convenient for staff, patients and visitors alike and gives emphasis to its importance. Next to the chapel is the evangelists office and conference room.
Private Room Floor

At Wuhu there is a growing demand for more private rooms of a better type. This comes from the Chinese as well as the foreign community. This need should be met not only for the income it brings but as part of our service to them. One of the last and most valuable decisions made regarding the plans was to assign more space for first and second class patients and to place them all together on the top floor of the building. These patients have different regulations, more privileges and longer visiting hours than ward patients. The administration will be greatly simplified by placing them on one floor. The arrangement of the ward space on this floor was perplexing but its division into cubicles by wood and glass partitions gives very satisfactory second class accommodation. Each cubicle has a curtain across the front giving privacy, and an individual light and nurses call which the ward patients do not have. The heating radiation in this ward is a little more than in the public wards. By this arrangement as many patients can be cared for in this cubicle ward as in the public wards below but with twice the income or more. This meets the need of the middle class who desire something better than the public wards yet can not pay for the private rooms.

Another departure from the usual arrangement provides a small private patients' kitchenette with running water, sink, work table and hot plate. In China, where the servant is like one of the family and knows the desires of the master or mistress regarding special little dishes, it would seem good therapeutics to make this service available under the supervision of the doctors and nurses. An extra charge is made for the use of this room.

This floor like all the others has ample solarium and porch space; an open one on the west and an inclosed one on the south. It also has easy access to the roof garden.

Through the assistance of the foreign business firms in Wuhu a few special private rooms were provided and furnished in keeping with those in good hospitals in the home land. They have private bath with shower, lavatory, toilet with bed pan washing attachment, and private nurses station. There is also a nurses' call light and telephone connection to each bed side. The beds, mattresses, linens, window drapes and furnishings were selected to give the rooms a home like appearance.

Service rooms arrangement

The service rooms were placed as nearly as possible in the middle of the floor area. The regular food service is from the main kitchen direct to the ward so the small diet kitchen is used only for special
dishes and drinks and as the medicine room. It also has a wind cupboard connected through the wall to fresh air and is supplied with medium pressure steam, hot and cold water and an electric plate.

The nurses’ station contains the nurses’ desk, doctors’ table, patients’ charts, telephone and nurses’ call light.

The utility room across the hall contains the slop sink for bed pans, kitchen sink and work table, utensil and solution shelves, sterilizer and dressing carriage.

Considerable space was saved by placing the linen room and diet kitchen in the same section of the building. Although it is not indicated on the plans there is a large window in the wall opposite the window of the diet kitchen which gives abundant light to all the linen-room shelves.

The toilet fixtures are quite different from the usual ones. Neither the floor toilets nor any other type seen by the writer seemed to meet the needs of Chinese patients. In looking over numerous fixtures for something more suitable we found the Juvenile toilet which is only 13 inches high. After a study of its merits we decided to use the Juvenile lipped toilet without the wooden seat in the public wards and workmen’s toilets. The Sloan flush valve is used instead of the flush tank. Since making the installation a 10 inch Juvenile toilet has been discovered and we would be inclined to prefer that; however the ones installed are proving very satisfactory.

Telephone and Nurses’ call system

Fifteen telephones in different parts of the building make for easy communication between the different departments. The city telephone line is connected to the hospital switch board and provision is made for connecting the compound residences.

The nurses’ call system operates by a switch at the patients’ bed side. The patient by pulling a cord lights a small lamp over his own door and also lamps in the nurses’ station and at any turns in the hall. These lights can only be turned off by the nurse at the patient’s bed side. A nurse seeing the signal lamp follows it to the hall where she finds the door light of the patient sending the call. A buzzer in the nurses station can be added to the system if necessary.

Master-Keyed Locks

To one who has carried for years a pocket full of keys, to open a few doors, it is like getting into a “better land” to be able to open many times the number of doors with three or four keys.
The locks commonly used in a hospital are door locks, night locks and cabinet or drawer locks. The doors needing night locks were divided into six groups, each group having a master key. For example, all the linen rooms in the building make the linen group. The rooms to which all doctors should have access make the doctor's group. The other groups are Administration, Kitchen, Stores, and Mechanical. There is a grand master key to unlock all the locks in the six groups.

The cabinet locks are likewise divided into groups. Where it is possible the use of several locks with identical keys is a convenient and economical arrangement. This system was used in part for the cabinet and ordinary door locks. In the sections of the building occupied by patients all the doors on one floor have the same key; thus with the one key the nurse controls all the doors on her floor. It is also considerably cheaper than master-keyed door locks.

Operating Room

The plans show well the convenient location of the operating suite on the sixth floor of the north arm of the building. A large and small operating room gives flexibility. Large plate glass windows and an inclined ceiling give excellent light from the north. Four special lamps with adjustable holders and reflectors provide the electric lighting.

The partition between the two rooms contains the instrument cabinets, blanket warmer and supply cabinets. These open into both operating rooms. The instrument cabinets have glass doors which make it possible for one supervising nurse to see what is going on in each room. The scrub up sinks were placed in the operating room because the surgeon often has to supervise the preparation of the patient and can save considerable time if he can watch the preparation while scrubbing up.

Hot and cold sterile water is piped from the tanks in the attic to the scrub up sinks. The rooms are heated by the same steam lines which supply the sterilizers. An ordinary instrument sterilizer is installed but provision is also made for sterilizing instruments and utensils in the pressure sterilizer. The doctors dressing room has a toilet, lavatory and shower which will be most acceptable in the summer.

Laundry

In the laundry steam and cold water are piped to the tubs. This is more economical than using hot water and allows boiling the clothes in the tubs. Steam is also piped to a soap tank and we plan to connect it to a hand washer. Space is reserved for laundry machinery but available funds will not permit its purchase now.
Dirty dressings are treated in another room fitted with tubs and steam for boiling.

Architecture

A western type of architecture was chosen rather than Chinese for several reasons. It had been observed that modern Chinese government and business buildings were adopting foreign architecture. Even in interior places new Chinese bank, telephone and other public buildings were not following the Chinese type of architecture. This tendency on the part of Chinese builders indicated that they considered a modern type of architecture more suitable for such buildings. It also confirmed the writer's views after a study of hospital architecture. To place a Chinese roof on a foreign building produces a compromise mixture which is neither pleasing nor practical.

A simple Colonial type was finally chosen as most suitable for the site and adaptable to the requirements of hospital construction. Many pictures were studied and several sketches drawn before a satisfactory design was secured. In this design there were several places where utility demanded deviation from the architect's ideal. Architecture claimed twelve panes of glass in each window sash and an apparent roof over the whole building but utility maintained that two panes per sash were more easily cleaned and a flat roof on a hospital would bring great joy and benefit to the patients. So a flat roof was placed on the wing and two panes of glass in the front windows. A compromise to six panes per sash was made for the back windows. It is now agreed that no compromise would have been better.

The relative width and height of wards was a subject that needed study. In visiting hospitals it was observed that some wards appeared wide and flat while others seemed too high and narrow. The wide wards required heavier supporting beams thus accentuating the flat appearance. A width of 21 to 22 feet with a 10½ foot ceiling provides ample width for a non-teaching institution and produces pleasing proportions.

It was also necessary to give special attention to the design of the chapel ceiling to eliminate large unsightly supporting beams. The results of these and other similar modifications improved the appearance of the building without increasing the cost.

Construction

The walls are red machine brick and the floor slabs and stairs are of reinforced concrete. The crushed rock for concrete was excavated on the hill. All partition walls that are not supporting walls are of
metal lath with cement plaster on both sides. The only wood work is found in the doors, windows and the supporting timbers of the red tile roof. This makes the building practically fireproof.

Most of the floors are surfaced with terrazzo laid with contrasting colored borders. On the solariums and porches also a color was used to prevent glare. The terrazzo baseboards were made flush with the wall plastering to avoid the usual dust-collecting ledge. We were told it could not be done but a trial in one room proved so satisfactory it was used throughout the building. Terrazzo was selected for surfacing after studying several types of flooring. The imported flooring materials were found too expensive. Plain cement as we have seen it laid in China has a very poor surface. It also stains easily, is dusty and difficult to keep clean. Cement with a metallic hardener costs about one third more than plain cement. This brings the cost in the neighborhood of terrazzo but does not give nearly as pleasing a floor for a hospital.

The choice of windows was most difficult. At first we were inclined to steel windows because of their fireproof features. Several installations were visited and we found ourselves inclining toward wood double hung windows. The steel windows often did not work smoothly, they required even more careful painting and any types that would work well with screens and curtains were prohibitive in price; in fact the cheapest type was more expensive than wood and less satisfactory.

Flush panel doors are used throughout the building except for the administration offices. The doors were made of Oregon pine and the panels of Philippine hardwood. The finish is a mahogany stain varnish for the doors with colonial yellow paint for the trim. In the wing there is no wood trim around the doors and windows. Corners are finished with cement for protection. All doors to patients' rooms are forty-two inches wide so the three foot beds can be easily rolled from one room to another or to the solariums and porches.

**Heating**

Steam heat has been provided throughout the building. The amount of radiation installed was estimated so that certain parts of the building would have a higher temperature than others. The public charity wards, halls and similar rooms were to be maintained at 60° F. while private rooms and administrative offices were estimated at 70° F. This effected a large saving in the amount of steam required as well as radiation installed.

Further flexibility in heating was secured by connecting the operating rooms, emergency surgery, and admission bath room to the medium
pressure steam line. As this line carries steam at all times it is possible to heat these rooms quickly and at any season of the year. This is especially desirable in the spring and fall when it is not cold enough to need heat in the regular heating mains. Another desirable feature for economy is the provision for turning the exhaust steam from the engine into the heating mains. Careful insulation of all mains and returns is also important.

**Hot and Cold Water**

The hot water system is a circulating system giving hot water within four feet of each tap. It is piped to all bath rooms, diet kitchens, utility rooms, pharmacy, laboratories, X-Ray room, operating rooms and main kitchen. The hot water is heated by steam in the engine room and stored in a 500 gallon tank from which it circulates throughout the building. The hot water main is also directly connected to the heater so the hottest water is sent into the lines. If it is not drawn it returns to the storage tank. The storage tank is also equipped with a thermometer and thermostatic valve which shuts off the steam when the desired temperature is reached. Exhaust steam from the engine may be used to heat the water when not needed for the radiators. All the hot water lines and storage tank are carefully insulated.

**Power and Electrical Plant**

This is the heart of the physical plant and a great deal of time was given to the study of its layout and equipment. A forty three horsepower water tube boiler provides steam for all the purposes of the institution. It operates at 100 pounds pressure and is located in the boiler room at the side of the building. Space for another boiler is provided and this should be one of the early pieces of equipment added. It could probably be of smaller size than the present boiler and used for relief in the summer.

From the boiler a 100 pound steam line is run to the engine and elevator. Two reducing valves give 5 pound steam for the heating mains and 15 to 25 pound steam for the medium pressure lines.

The medium pressure lines carry steam to the operating room sterilizers, sterile water tanks, blanket warmer and heating radiators; to the utility rooms on each floor for sterilizers; to the diet kitchens on each floor for boiling water; to the emergency surgery and admitting bath room radiators; to the laboratories, pharmacy, staff dining rooms, kitchen and laundry. This system has been carefully insulated and made flexible by the installation of numerous valves so any of the branches may be closed at will.
A single valve, 25 horse power engine was chosen. The more efficient types were not considered necessary because the exhaust steam can all be utilized for heating purposes. The exhaust line has a back pressure valve and the steam can be directed to the boiler feed water heater, hot water heater, and the heating radiators.

The engine drives a 22 K. V. A. 220 volt, 3 phase alternating current generator. This is the same kind of current supplied by the city lines. Through the courtesy of the city their lines are run to our switch board with a meter for power and light. From this switch board lines are carried to all the buildings in the compound; sub-meters are placed in all private residences. By means of a double throw switch, current can be used at will from either the city lines or the hospital generator. As the city supplies current only at night it was not possible to depend upon it entirely. The hospital and compound expenditure for electricity last year was about $1550.00. Most of this amount can now be used for the purchase of coal.

All water of condensation from all parts of the building is collected into the feed water heater which is heated by the exhaust. It is then pumped back into the boiler by a boiler feed pump automatically controlled by the amount of water in the receiving chamber.

The plant has been in use only during December and January which is not long enough to warrant any conclusions. But it is of interest that during these two winter months it has taken a little less than a ton of coal a day to heat the building, pump filter and heat the water supply, generate the electric supply, and provide steam for sterilizers, sterile water tanks, laundry and similar needs. It should be possible to reduce this amount when the insulation is completed.

An Elevator to Five Floors

Since electric elevators require frequent service and inspection by expert mechanics they were not considered suitable for Wuhu just yet. They also require a day and night electric supply. A number of elevators were investigated and the steam hydraulic was finally chosen as the most suitable. Its installation is just completed so there has not been a sufficient trial to warrant final conclusions. However we are pleased with its simplicity of operation, the safety devices and general fool proof mechanism.

Water Supply

The water supply was one of the many perplexing problems. The Yangtze river flowed by our door with a never failing supply of good soft water. But the clarification threatened to be rather a difficult and expensive procedure as the water carries a very large amount of
fine sediment. On the other hand one very successful deep well had been driven in Wuhu which provided a beautiful clear supply of pure water. During the months of building another deep well was attempted in the community but no satisfactory supply was secured; it was finally abandoned after several thousand dollars had been spent. This uncertainty of results which was confirmed by other waterworks engineers led to the selection of the Yangtze river as our source of supply. It was thought better to choose assured water though possibly turbid than to choose clear water and possibly get none.

There is about twenty five feet difference between the high and low water levels of the river. To make certain of reaching the low water the pump was placed in a pump pit 17 feet deep. A three inch water line was driven from the bottom of this pit out to the river. A building was erected over the pump pit to house the rapid sand pressure filter and the ten horse power motor for driving the 3000 gallon per hour pump. After passing through the filter the water is led to two cement tanks under the hospital roof. Each tank holds about 6000 gallons. An alum dosing apparatus is attached to the filter but has not yet been used. The water is clear enough for most purposes without alum. After trial, if simple filtration alone does not give sufficient clarification a small amount of alum will be run into the raw water. Even if this is necessary the whole process will not be as difficult as was anticipated.

Conclusions

Most of us who build a hospital in China are amateurs at the job or were when we started. It did not take long to find that there is a shortage of reliable information on the design, construction and mechanical equipment of hospitals in China. It is necessary to use many devices to supplement the information of architects who are usually not specialists in hospital building. Questionaires, drawing sketches, studying plans, taking pictures, making models, trying procedures in the old buildings are all resorted to and are helpful.

Before attempting any building it is very desirable to visit a goodly number of other plants taking full notes and pictures if possible. A picture will record a hundred details that are impossible to remember.

It was our aim to secure a modern well constructed plant of simple design which would give the maximum of service with a minimum cost for maintenance. The comfort of the patient and the convenience of those who care for him were considered in every decision. Flexibility of arrangement was kept in mind because conditions and needs are always changing.
The Wuhu General Hospital

The building has only been occupied two months so it is too early to record results. Some contracts are not entirely completed so actual cost figures can not be given. It will be about $140,000 Mex. for the building with all mechanical installations and a small amount of furnishings. This includes the chapel and one floor for nurses quarters which are not always included in a hospital building. More exact figures will be worked out when everything is completed.

In an old number of the China Medical Journal the writer read an article on hospital building. It closed with the following statement which seems as fitting to-day as when written twenty one years ago. We pass it on: "My last word is this. Let us aim to embody in the planning and construction of our hospitals the strong faith that their service to Christianity and to China is not transient, but to increase with the years, until, no longer mission but self-supporting, they become the hospitals of the great Chinese Church of the future".

LINGUATULIDS IN CHINA

Dr. E. C. Faust reported on four species of linguatulids which had been found in man and other hosts in China. All of the specimens were nymphs.

Armillifed Moniliformis (Diesing, 1835), peculiar to the Oriental region, had been obtained from a Tibetan who had died in Peking of miliary tuberculosis. The worm was encysted on the margin of the liver and was walled off from the liver tissue by a thick fibrous capsule. Its integument was provided with spines, which has been described for the nymphal stage of other genera of linguatulids but had not been recorded for this genus. This was the first record of the occurrence of this genus in China and the third human case.

Linguatula Serrata (Froehlich, 1789) had been found in the respiratory passages of a laboratory rabbit in Peking in 1921. All of the specimens examined had the characteristic two pairs of claws and, in addition, the immature claws of the next (adult) stage, a condition noted by Leuckart (1860), but not referred to by later investigators. This was the first record of the genus and species for China.

Kiricephalus Pattoni (Stephens, 1908), which had been previously recovered from a Hongkong snake (Southwell 1924), was reported from the lungs of a cat, autopsied in Changsha. This suggested that felines were the natural hosts of the larval stages and that they incurred their infection from consumption of the viscera of snakes. These three species belong to the subfamily Poroccephalinae,
characterized by the presence of two pairs of circumoral claws in the larval, nympha1 and adult stages and by a posteriorly disposed utero-vaginal pore.

The fourth species, *Reighardia sternae* (Diesing, 1864), previously described only in the adult stage from the air sacs of terns and gulls, had been obtained from the portal blood and lungs of *Sterna fluvialis*, captured on the shore near Tientsin. The worms were nymphs and were evidently in migration from the intestine to the air sacs. The adults of this species had been previously found to have two pairs of claws and an anteriorly disposed utero-vaginal pore; the unhatched larvae had been found to possess three pairs of claws. The nymphs in this collection were like the embryos in possessing three pairs of claws. This finding gives further support for the differentiation of this genus along with *Raillietiella* from the other described linguatulids and the erection of the subfamily *Raillietiellineae* (Sambon, 1922) for them. This is the first record of a species of this subfamily in the Far East. The study of these Chinese linguatulids supports Sambon's classification and nosogeographic data.

*From the report of the China Branch of the American Society of Parasitology November, 1927.*

**LEPROSY IN INDIA**

*A Survey.*

DR. R. G. COCHRANE

The organization of the great humanitarian work of caring for the leper, which is so largely in the hands of Christian missions of various denominations, requires to be remodelled in the light of the new situation, for it is evident that a far greater service is rendered by curing the leper in the early stage of the disease, than in providing a home for him after the affection has reduced him to a helpless wreck. Moreover, the cost of curing him in the early stage will amount to but a very small fraction of that of maintaining him in the advanced stage for many years, quite apart from the further inestimable advantage of clearing up his disease before he is likely to have infected others; for it is a world-wide experience that lepers rarely enter the old type of asylum until several years after the appearance of their disease, during which a future generation of lepers is infected; and when they have reached a stage in which, the great experience of the treatment of some five thousand lepers at Culion has shown, only some fifteen to twenty per cent. can be cleared up by the improved methods of treatment.

"*Foreword"* Leonard Rogers, C.I.E., M.D., F.R.S., I.M.S.
A CASE OF POLYHYDRAMNION

CHAS. W. SERVICE M.D., CHENG TU,
WEST CHINA.

The following is a brief record of a case of Acute Polyhydramnion occurring in the practice of Dr. Ada Speers in Chengtu, West China, in which I was called in consultation. Dr. Speers conducted the delivery. The patient arrived at the hospital in labor and therefore did not require induction. For this reason also our history and other records of the case are rather brief and scrappy. But the case is of sufficient interest to warrant description.

CASE

The patient was a Chinese woman, age, 23, married ten years. This woman illustrates how very young many Chinese girls are married. This was her sixth pregnancy. Two children were living, two dead and she had had one miscarriage at the sixth month. She said that all of her labors had lasted three or four days, and that she had what she considered an excess of fluid with each birth, whether full term or not. With her first two labors she had severe hemorrhages immediately following the birth of the child.

On admission she complained of extreme swelling and distension of the abdomen; also pain in the abdomen for the past five days, but especially during the last three days.

She was evidently in labor and Polyhydramnion was suspected. She said she was six months pregnant, but her abdomen was of enormous size.

There was nothing very noteworthy about her menstrual history except that the interval varied from fifteen to forty days. Her last period was six months before.

She complained of a constant, profuse, white intermenstrual discharge. Her husband had had gonorrhea and probably also had tuberculosis. She herself had had hemoptysis seven years previously. Her bowels moved at intervals of three or four days. Otherwise she said her health was good.

Present Illness; Patient said she was six months pregnant. The extreme swelling and distension of the abdomen had increased very rapidly during the past five days. Pain in the abdomen was especially
severe during the past three days. For the first few days the pain was
confined to the upper abdominal zone, but for the past few days it had
been chiefly located in the lower abdomen. Her discomfort had
increased daily for several days, as had also the oedema of both legs.
She had been unable to sleep for the past eight or nine nights, and she
had had no bowel movement for six or seven days, and for several days
she had had a slight cough. Up to these recent events she had felt in
fine condition.

Examination showed a well developed woman, with a normal
temperature, a pulse of 108 and respirations 26.

The abdomen was tensely distended, with bulging flanks and
superficial veins were evident. There was dulness anteriorly and on
both sides, extending up to the ribs and almost to the ensiform cartilage.
There was a small area of tympany posteriorly on both sides. The
uterus could not be outlined. Fetal parts could not be felt, nor could
fetal heart sounds be heard. There was also a fluid thrill. There was
no ballottement externally. The legs were quite oedematos and stiff
—all occurring during the past few days.

Vaginal examination on admission revealed the os open a little
more than two fingers, with considerable rigidity of the cervix. A
small fetal head was easily palpable, but there was little indication of a
bag of waters. The head seemed to rest right on the finger, and was
not very movable, probably because it was in a very small sac with
little fluid, with a very large tense sac above it.

The labor proceeded for several hours and then the child was
born, a stillborn boy weighing one pound one ounce. Evidently he
could not account for the great distension, especially as almost no
amniotic fluid came with him or before him. There was not the least
perceptible sign of any diminution in the size and tension of the
abdomen.

Another vaginal examination was made and the os was found
well dilated, a tense sac was felt and there was internal ballottement
obtainable. The sac was ruptured and a very large amount of fluid
came away, and a second stillborn boy was born who weighed one
pound six ounces. This also was an occiput presentation. The
abdomen quickly receded and the uterus could now be easily felt.
The uterus promptly contracted and there was no more than normal
bleeding. The fluid weighed 16 pounds.

Twenty minutes after the birth of the second child the placenta
and membranes were born intact. There was one placenta with two
distinct sacs and two cords. The placenta was large in area but not
thick and weighed just one pound. The cord of the first child was short, tenuous and easily broken, while that of the second was much longer and stronger.

With the exception of the rupture of the second sac, the labor was not assisted in any way, nor were there any lacerations, bleeding, or any other complication.

The puerperium immediately following labor was without incident. The lochia was normal and by the fifth day was scanty and of a light red color. The height of the fundus gradually lowered until on the sixth day it was four inches above the symphysis pubis. Two days after labor the patient appeared as happy and as comfortable as though nothing unusual had happened. The oedema of the legs gradually disappeared. On the morning of the seventh day she insisted on leaving the hospital and was dismissed as "cured."

Diagnosis after Labor: Twin Pregnancy, Miscarriage at sixth month (or a little earlier) and Acute Polyhydramnion of one amniotic sac.

---

MULTIPLE GUNSHOT WOUNDS

A Report of a Case

J. C. McCracken, M.D., F.A.C.S.

With the advent of automatic fire arms into China multiple gunshot wounds are becoming more frequent. During the past year the Surgical Services of St. Luke's Hospital, Shanghai, have received an unusually large number of patients with such injuries.

The following case Number 26235 is one of that kind and illustrates well what the human body may be able to endure from gunshot wounds of vital organs.

This patient was a Chinese, thirty nine years old, an inspector in a cotton mill. While on duty at the gate of the mill two men approached and fired at him. The inspector turned and ran for protection within the mill. The gunmen continued to fire at him but he did not drop until after he had reached cover.

The patient was immediately rushed to St. Luke's Hospital two miles away. On admission he was in considerable shock. His lips were pale, his hands cold and clammy, his pulse was of fair quality and only eighty six per minute.
Physical examination. Seven bullet holes were found. Anteriorly one hole was found over the liver, one just below the costal region on the left side and another about two inches from the crest of the ilium from which omentum was protruding. Posteriorly there was one hole going into the right ilium, another at the middle of the lumbar spine and two on the left above the crest of the spine. Two bullets were found beneath the skin at the level of the sixth dorsal vertebra, these bullets had passed completely through the body.

The patient was prepared for immediate operation. Under general ether anesthesia the abdomen was opened through a right rectus incision. The peritoneal cavity contained a large amount of free blood. The spleen was explored and found to be uninjured. The liver was then examined, there was free hemorrhage from a bullet wound going through the thickest part of the right lobe. A temporary pack was inserted. The alimentary tract was then examined and three puncture wounds of ileum were found located within six inches of each other. The wall of the large bowel was scraped by a bullet. This wound was quickly closed with three catgut sutures. The damaged part of the ileum was excised and an end to end anastomosis done. The portion of the omentum protruding from the abdomen was ligated and excised. The temporary pack was then removed and a large gauze pack was placed between the liver and the diaphragm and brought out of the operative incision and the abdomen closed. Immediately after the abdomen was closed the lower right chest was strapped with adhesive plaster to immobilize the chest wall and also to compress the liver to aid in the control of hemorrhage from that organ. An immediate transfusion of 1000 c.c. of saline solution and 1 c.c. adrenalin was given and the patient left the table with a rapid small pulse.

By the next morning the general condition of the patient had greatly improved and his progress for the first five days was quite satisfactory. The pulse had returned to about ninety while the temperature was from normal to a hundred. For the first fortyeight hours the urine was very bloody. It became normal within five days. The abdomen was soft and the bowels had moved normally. All wounds were clean with the exception of the one over the ilium. From this opening a considerable amount of dirty clothing had been removed at the time of the operation. This wound had drained and on the thirteenth day secondary hemorrhage required it to be packed. Slight jaundice was noticed on the thirteenth day which was of short duration. Up to this time the general condition of the patient was considered satisfactory. The slight temperature was accounted for by the discharging wound in the ileum.
On the seventeenth day the patient began to cough and to expec­torate a very foul sputum. The temperature arose to 102° and for three or four days he was in much distress and coughed up large quantities of frothy foul liquid.

Because of a dull area over the lower right lung an aspirating needle was inserted and about ninety c.c. of dark thick foul pus was withdrawn. The odor was the same as that of the sputum. For a week daily aspirations were done followed by washing out of the cavity with Dibromine Solution. There was general improvement and the coughing ceased entirely. Because of continued low fever and rapid pulse freer drainage was secured by the insertion of a rubber tube into the pus cavity. The temperature was less but the pulse continued to go up and the patient died on the forty fifth day after admission.

Autopsy Findings. The intestinal anastomosis was smooth, the lumen of the gut was normal and the suture line hardly discernible. The right kidney showed a healed wound through the upper quarter. In the right lobe of the liver a completely healed wound was found extending through the thickest part of the lobe. In the pelvis extraperitoneally was found a bullet. There was no pus anywhere within the abdominal cavity.

Upon opening the thoracic cavity the diaphragm was found to be intact. Beneath the lower right lobe and extending up to the base of this lobe there was a pus pocket with a capacity of about three hundred c.c. which had been completely drained by the rubber drainage tube. At the upper end of the cavity there was found a small necrotic area in the base of the right lung.

Conclusions. It was evident that this patient had completely recovered from a gun shot wound of the liver, of the right kidney and of the small and large intestines but had succumbed to the complication of a lung abscess which may have had its origin from the infected wound in the buttock which was the only infected area when the lung condition developed.
LIQUID PARAFFIN REPLACING CEDAR OIL IN MICROSCOPY

H. J. Shu, M.A., M.D., D.P.H., D.T.M.H.

Attention of the profession and laboratory technicians is drawn to the fact that pure heavy Paraffinum Liquidum, B.P. (Petrolatum Liquidum, U.S.P.) can replace cedar oil in microscopic work in the following two ways.

I. LIQUID PARAFFIN IN EXAMINATION OF FECES

The method of using cedar oil as an aid in finding parasitic ova in feces as reported by Dr. Gordon E. Hein of San Francisco in Jour. of Lab. & Clin. Med. Aug. 27, and quoted in the C.M.J. Nov./27, is of great practical interest. The technique depends on the property of cedar oil in rendering transparent very thick smears of feces dried at room temperature, so that searching for parasitic ova is facilitated.

I find that pure heavy Liquid Paraffin possesses the same property, and therefore it can be used in the place of cedar oil. This substitution is warranted by certain advantages, which I shall mention presently.

If the smears are made far too thick, I find that neither cedar oil nor liquid paraffin can clarify them.

II. LIQUID PARAFFIN AS AN IMMERSION OIL

Liquid paraffin can be recommended for microscopic work with oil immersion lenses. It is excellent for the purpose.

The following are reasons for preferring liquid paraffin to cedar oil. It remains clear in any climate; it is not volatile; it is more limpid and easier to use; in cold weather it does not require warming before application, because it does not thicken; it does not make the slide adhere to the objective, as cedar oil sometimes does when it resinifies; it is easily wiped off the lens; it may be used as a lubricant and protective for the microscope; its cost is much lower; and it is readily procurable.

The brand of pure heavy liquid paraffin I have been using with great satisfaction for a long time past is 'PAROLEINE' brought out by Burroughs Wellcome & Co. I have also tested several other brands of heavy mineral oil specially refined for internal use, such as 'CALOL,' 'LIQUID PETROLATUM SQUIBB,' and Parke, Davis & Co.'s 'AMERICAN OIL,' and I have found them to be equally good both as an aid in detecting ova in the feces and for bacteriological work.

When a microscopist tries liquid paraffin, it is not likely that he will return to cedar oil.
Editorials

CANCER IN CHINA

In this issue we return to the perennial subject of cancer. The disease is one of special interest in this country owing to the general lack of knowledge with regard to its distribution and frequency. As to the latter it is evidently quite impossible to come to any conclusions in the absence of any adequate system for the registration of deaths and the lack of properly qualified physicians over a large part of China. Any estimates of frequency are therefore open to so many possible fallacies that it were well to avoid attempting them at all.

With regard to the incidence of the disease in anatomical areas the matter is quite different and there is no reason why fairly reliable conclusions should not be reached. It is not suggested that the paper referred to does in any way reach such reliable conclusions, but we believe that it is a step in the right direction. It naturally invites criticism and this it is intended to do. The object of the paper will be largely attained if it succeeds in doing this.

There have been singularly few papers in the Journal on this important subject, and these have been either too much of generalisations on inadequate premises or have dealt with limited geographical areas. The latter are of great value if produced in sufficient numbers but there is a danger to all of us in thinking that local experience is necessarily of general application.

One point illustrates this and as a matter of great interest requires careful investigation. The figures in the paper referred to show cancer of the liver as very infrequent. On the other hand there are physicians of wide experience in their own localities who would not hesitate to say that this conclusion is incorrect. Now it is possible that both these views are correct, that is that the disease is frequent in certain localities while being rare in China as a whole.

If some such explanation should be correct there must evidently be a factor in cancer of the liver which is prevalent in certain localities while rare over the country in general. Is this actually so? We believe that it is, though we must confess that we have absolutely no proof that this is a case of cause and effect, and merely throw it out as a point well worth consideration. If we are not mistaken the area of high incidence of cancer of the liver seems to correspond pretty closely with that of the distribution of Clonorchis Sinensis. The suggestion naturally occurs at once that the chronic irritation of the liver by the presence of the parasite, often in great abundance, gives rise to
malignant neoplasm of the viscus. Is this correct? The problem certainly calls for careful enquiry and should it prove correct it adds greatly to the strength of the argument against attempting to generalise for the whole country even on the most carefully proved facts from one locality.

DEVOlUTION

The Secretary has recently been able to pay a visit to Canton and returned feeling not a little encouraged as regards the prospect of progress in medical mission work despite the recent untoward political situation.

The unhappy state of the City following on the recent Red emeute was very evident and the future political conditions appeared to be very uncertain. On the other hand there was evidence, especially in mission circles, of renewed opportunities for work and as a matter of fact the foreign physicians are rapidly returning to their country stations in the Kwangtung Province. A local exception to this occurs in the north east of the province to the south of the Swatow district where terrible outrages are still being committed by "Red" agents and their following. Some extracts published in the Association Section of this issue from a letter to the Editor from one of the Swatow doctors give a few of the ghastly details of the conditions of this area.

The most interesting development however in Kwangtung and indeed in any part of China has been the taking over the responsibility of the work of the New Zealand Presbyterian Church by the Kwangtung Synod of the Church of Christ. This includes the large Hospital at Kongchuen under our former President, Dr. John Kirk. In view of this development we thought it wise to again review the whole question of devolution and to include in our review a detailed report of how the work in the hospital was being carried on. This appears as an article in the Missionary Section of this issue. We believe that this paper may give rise to considerable difference of opinion with regard to the principles there advocated and criticisms of a constructive nature will be very heartily welcomed.

DR. A. W. TUCKER

It will be learnt with great regret that Dr. Tucker has been unable to accept the post of Vice-President of the Association. His many friends will be distressed to hear that a breakdown in health has necessitated Dr. Tucker declining any extra responsibilities. He left on short leave early in January and will, we trust, return with completely restored health in the autumn.
Reports of Conferences

WUHU HOSPITAL

One of the remarkable survivals through all these months of political disturbance has been the Methodist Hospital in Wuhu. That City has been, and still is, one of the leading storm centres of the Yangtse Valley, yet not only has it been found possible to continue the work without interruption, but a fine new hospital has been built during this period.

Our heartiest congratulations to Dr. R. E. Brown, whose interesting description of the new buildings we publish in this issue.

Reports of Conferences

NATIONAL MEDICAL ASSOCIATION OF CHINA
VIIIth BIENNIAL CONFERENCE

The Seventh Conference of the National Medical Association was held in the Red Cross Hospital in Peking from January 26 to February 2, 1928.

To a visitor from the South, Peking has a peculiar beauty in the winter and the Conference was favoured with especially good weather during its meetings. For the most part the days were bright and sunny with sharp frost at night, while a heavy snowstorm just before the meetings began made the scenery very attractive.

The Conference itself promises to be epoch making and proved from the point of view of policy to be the most important medical meeting yet held in China. The scientific papers were of an especially high order though the usual complaint was heard of a feast too sumptuously spread with attractive dishes too numerous for proper consumption.

Due to the efficient work of the President, Dr. J. Heng Liu, and the two Secretaries with an exceptionally good committee of organisers, the whole conference went with a swing; the many entertainments provided threw an unusual strain on the gastronomic capabilities of the Members who must have returned to their homes with a high appreciation of the culinary as well as the scientific abilities of Peking.

The Conference was a large one despite the fact that in these days of political disturbance and difficult transit the number of representatives from the South was very small. In view of the importance of the policies decided at the Conference this was disappointing.

Dr. R.K.S. Lim was appointed the new President and although unfortunately the exigencies of travel only allowed him to reach
Peking at the end of the Conference, the tumultuous applause of his reception showed how popular the election was.

As noted above the policies dealt with at the Conference made this meeting a particularly memorable one, and to these we would like to devote the little space that still remains to us.

A spirit of friendliness and unity was particularly noticeable all through the meetings and made it a special pleasure to have been present at this gathering. This spirit showed itself in the decision come to at the business meetings with a view to uniting in one strong body the whole medical profession in China on the broadest basis possible. The immediate prospective is a union of the two large Chinese Medical Associations, the National Medical Association and the Medical and Pharmaceutical Association and to this end Committees have been appointed by the two Bodies to draw up terms of union with the hope that this may be consummated at the next Conference in two years time. A further union is envisaged however in the possibility of another step, when this first one has been taken, in bringing in our own China Medical Association as well. While no definite proposals in this direction have yet been made, the desire for this was clear and doubtless some request for a general approval of the principle will come before our own Association at its next Conference.

In the meantime definite steps looking to co-operative work were taken by the present Conference. Such steps took two forms. The one was the appointment by the National Association of their own Committees for Research and Public Health. Especially in the case of the former body there appears to be no reason why, as far as work goes, there should not be early co-operation if not complete unity of action between this Committee and the C.M.A. Council on Research. The C.M.A. has of course no separate Public Health Council, but close co-operation should be possible between the National Association's Committee and the Council on Health Education, in which the China Medical Association takes a share.

The most interesting and specific proposal for union with our own Association we have kept to the last, and in view of the fact that this proposal must come immediately before our own Executive Committee and through it to our Members at large we shall in this report merely state it in outline.

The National Medical Association recognises the desirability of medical journals which, combining all the elements of medical progress in the country, can speak more authoritatively from the Chinese point of view. The C.M.A. publishes its Journal in English and the N.M.A. its own Journal both in Chinese and English, and there is thus a good
Reports of Conferences

deal of unnecessary reduplication. The National Medical Association
has therefore minuted the definite suggestion that there be two Journals
published; one by itself (in union with the Medical and Pharmaceutical
Association) in Chinese, thereby assuring a thoroughly good Journal in
that language, and one jointly by the National Medical Association and
the China Medical Association thus assuring one fully representative and
high standard Journal in English. The name to be adopted would be
Chinese Medical Journal in the one case and Chinese Medical Journal—
English Edition—in the other. In the latter case the Journal would
be published under the joint auspices of the two Associations with two
Editors, while the actual publishing work would remain in the hands
of the China Medical Association.

Should this proposal be approved by the Association the amalgama­
tion of the Journals will be carried out as soon as the necessary
arrangements can be made.

The Editor of the China Medical Journal had several interviews
with the representatives of the National Medical Association while in
Peking and personally is heartily in favour of this proposal. J.L.M.

THE NURSES ASSOCIATION OF CHINA

The Nurses Association of China held its Bi-Annual meeting at the
Moore Memorial Hall, Shanghai, from January 18-24, with an attend­
dance of 116 registered delegates including some Student Nurses from
Schools in Shanghai, representing 12 provinces and Formosa.

At the opening reception given by the Shanghai Branch of the
Nurses Association there were present as guests and speakers Miss
Edith Pye, Mme Drevet, and Dr. Lowe, the Secretary of the Shanghai
Branch of the National Medical Association.

At the opening session on the first day Dr. J. L. Maxwell brought
the greetings of the China Medical Association.

Many subjects of general importance to Schools of Nursing were
discussed and resolutions passed which should make for the improve­
ment of the nursing situation in China.

Perhaps the most important item of business, was the election for the
first time, of a Chinese General Secretary, Miss Mary Shih of Peking.

Miss Lillian Wu of the Red Cross Hospital, Shanghai was re­
elected President.

The outstanding feature of this Conference was the large pro­
portion of Chinese delegates and the part they took in discussions. This
shows how rapidly the Association is becoming a Chinese organization,
as contrasted with the Conference held in Shanghai in 1914 when
there was one Chinese graduate nurse present. R. A. B.
CLONORCHIASIS IN IMMIGRANTS TO THE UNITED STATES

Dr. W.W. Cadbury has kindly sent us an interesting item of news in regard to the above which we here reproduce. He writes:

Dear Dr. Maxwell:

The readers of the China Medical Journal generally will be interested to see the enclosed statement, which will remove one of the great causes of irritation to Chinese coming to this country. The absurdity of the law as it formerly stood made it a reproach to the U.S. Public Health service.

U. S. DEPARTMENT OF LABOR. BUREAU OF IMMIGRATION
WASHINGTON, D.C.

Dr. Wm. W. Cadbury Dec. 6, 1927
Mooresstown, N. J.

Dear Sir:

Referring to your letter of the 30th. ultimo, you are advised that the United States Public Health Service has reclassified the disease clonorchiasis and no longer holds that it is a dangerous contagious disease so far as the United States is concerned, as said Service has become satisfied that the medium for transmission of the parasite is not present in the United States. Aliens afflicted with clonorchiasis are still excluded if the progress of the disease is such that it has affected their physique to such extent as to affect their ability to earn a living.

Respectfully,

(signed) Harry E. Hull,
Commissioner General of Immigration.

HOSPITALS IN THE SWATOW REGION

The following extracts from a letter to the Editor give a terrible picture of conditions round Swatow.

I expect you will wish to keep in touch with the welfare of our hospitals. Since reporting to you last, three of our up-country hospitals have had to close down. The work in the Shang Hang Mission Hospital has come to an end owing to the political activity of the assistant in charge. Could another more reliable assistant be found
the hospital might be reopened, as the value of its work is greatly appreciated, but I do not think that the matter will be taken up for some months at any rate.

The Wukingfu Hospital Assistant was taken off by bandits, and closely confined for some 6 weeks before his ransom was satisfactorily arranged, and his release effected. This experience has led to his resignation, and the bandits are so active now, and the Peasants Union so dangerous in districts not so far away, that plans for re-opening the work have been postponed.

I can only give a partial report of the effect of the Communist regime on the Swabue Mission Hospital. When the Communists first rose up, some little time after the Reds had been driven out of Swatow, they demanded that the hospital should set free two men to accompany the Communist leaders up-country to work in the Communist centres. Refusal was impossible, so the assistants and students drew lots, and two were taken. Two other students, who had been sent down from the Swatow district, escaped at the first opportunity, as in the first place much of the Communist activity was directed against the Tie Chiu folk on account of their wealth and their non-manual occupations! The assistant also tried to escape but was hauled back from the salt-boat on which he, with others, had begged a passage, to keep the hospital open under the Communist control. Since then communication has been practically cut off, and it is difficult to know what has happened. That the hospital has run out of drugs and dressings, the assistant been taken inland, and the Communists turned actively anti-Christian, are points amongst the later developments that have been reported. Accounts of the slaughter of hundreds of people, have appeared in the press, and more recently, the outrageous treatment of the priests and nuns of the R.C. Mission in Swabue; the accounts that we have had from those who have escaped from Swabue confirm every detail. There has been no exaggeration—exaggeration is almost impossible. There is a lust for blood on the people and nothing will satisfy them but blood and more blood.

The declared aim is to reduce the population by one third in order that the remainder may live in more comfort. In one city that resisted the first invasion of the Communists over 800 people were beheaded, and their heads were pickled and distributed over the country as a warning to those who were anti-Communist. All boundary stones have been removed. All deeds have been destroyed. The rice fields have been made common to all and the dividing banks have been removed as far as possible. Amongst those killed are two of our preachers, two boys from the Swabue School and several Church members.
I can give you no orderly account of the position. Should the assistant from the hospital escape with his life, his story will be well worth hearing. In the meantime it is very hard waiting for news, for we are powerless to relieve the situation in any way.

Troops are pouring into Swatow and we hope that some of them will be spared to clear up the South-West district. I can see no hope of reopening the hospital for some time to come. And I fear that in any case the assistant will not be eager to return.

So three of our hospitals are accounted for. Meantime the work goes on in Swatow with undiminished numbers.

---

Missionary Section

DEVOLUTION IN PRACTICE

JAMES L. MAXWELL, M.D.
Secretary Missionary Division, China Medical Association.

For a long time now we have been paying lip service to the principle of devolution. We all recognise the advisability of it in theory and from our hearts we wish for the cause of Medical Missions in China that it could everywhere come into being, yet here for the most part we stop and as a matter of fact little progress has really been made.

I am well aware that a statement of this kind will give rise to strong criticism in many quarters. It will be pointed out that in quite a few places the foreign medical superintendent has resigned his position to make place for a Chinese incumbent of office; that other hospitals have gathered round them composite Boards of Management of which the majority is Chinese; and that in one way or other responsibility and office is being given to Chinese members of the staff in a way that has never been done before. I willingly acknowledge this and believe that it has all been done for the best, out of the best of all motives and undoubtedly is pregnant of much good but also I would venture to suggest of much harm. BUT this is not devolution in the proper sense of the word or in the meaning of the word as implied by the findings of the Missionary Division of the China Medical Association at its Conference eighteen months ago.

To support such a strong statement as this it is necessary to define devolution and to dwell on the full meanings of the term.
Devolution, as it applies to Medical Missions, is the act of devolving the responsibility of the work of the Mission hospital on some body other than that which heretofore has carried that responsibility, that is the Foreign Mission Boards. It has nothing whatever to do with the racial position of the medical superintendents of the hospitals. In Christ there is neither male nor female, Scythian, barbarian, bond nor free. If a foreigner is working for the Christian Church in China as medical superintendent of a hospital and he is the right man for the post, he is doing nothing whatever to hinder the fulfilment of a devolution such as we desire. It may be a desirable thing for many reasons that his place should rather be taken by a native of the country but that has nothing to do with the principle of devolution and I believe that those who are advocating such a change from this point of view are merely deceiving themselves.

Devolution as has been pointed out is the devolving of the responsibility of the work on some other body and this body as advocated by our Association is the Christian Church in China and none other. We acknowledge at once that this is an impossible ideal in many parts of the country at this moment and to meet this difficulty various types of Boards of Management for the hospitals are being here and there formed. In some places these are composed partly of missionaries appointed by their own Mission Boards and partly of Chinese appointed in the same way or co-opted on the Hospital Boards by the members so appointed.

It is at least a question whether this is a desirable thing and in any case it brings the solution of the problem of devolution no nearer, for the final responsibility at the back of all such Boards of Management is the Foreign Mission. In other cases the Medical Superintendent has himself gathered round him a group of Chinese interested in mission and in charitable work and has constituted these a Board of Management for the hospital. Such a plan as this is no nearer a true solution of the problem of devolution and is in itself open to very serious dangers. In the present unsettled condition of the country there are two special dangers. One that the Chinese members of the Board may have to flee on account of a local political upset and thus may leave the hospital stranded as has happened in at least one case. Or unwittingly a member may be placed on the Board who has strong radical affinities and may not only make the working of such a Board impossible but may actually be the instrument for handing over the hospital to a political and possibly anti-Christian party.

But in any case if neither of these dangers threatens I would still ask what security is there in such a Board for the continuance of the
hospital as an actively Christian evangelistic agency? The original members of the Board however worthy pass away and there is no security for the appointment of equally good men as their successors. In any case the hospital stands alone as a unit in itself without any responsible Christian body at its back and such a position is eminently unsafe. It has proved itself so in our own home lands and must be even more so in a land like China.

We come back therefore to what I believe were the very wise resolutions of our Missionary Division in conference which visualised devolution as the passing over of the responsibility for the mission hospitals to the Christian Church in China. These hospitals are at present organised for the active presentation of the Gospel of the love of God in action along the lines of healing of body and soul alike which our Lord laid down by the example of His life on earth. They are a gift to China from those in foreign lands who have felt in their own lives the love of Christ and are held in trust by groups of men and women constituting the Boards of Foreign Missions.

They have absolutely no right to pass these over to any except those who can by their position carry them on with the same Christian aims. It is this that we insist on. Methods may vary. Our own methods may be wrong and the Chinese may improve on them. Our methods may be the best and such handing over may temporarily impair the efficiency of the hospitals. I maintain that this is relatively a small matter compared to the essential aim that they are still carried on to reveal Christ.

Now there is only one body of men and women in China who can ensure this and that is the organised Christian Church. The Christian Church in China will make its mistakes as that Church in other lands has done. But when all is said it is the only body in China that is in a position to ensure the continuance of the Christ spirit, and the Christ aim in the Mission Hospitals. Devolution, I believe, should be devolution to the Christian Church and to no other body.

I have felt it necessary in this article to emphasize as strongly as I can the fundamental position of devolution. I want now to show just how it has been put in practice in one small area and to envisage its measure of success and the difficulties which have to be met.

In March, 1927, the work of the New Zealand Presbyterian Mission was handed over completely to the Church of Christ in China, evangelistic, educational and medical work alike. The statement of acceptance of this act of devolution by the Vice-chairman of the Kwangtung Divisional Council reads as follows:
"The Kwangtung Divisional Council of the Church of Christ in China is earnestly endeavoring to lead the Chinese Christian Church one step further toward assuming her full share of burden-bearing responsibility. It is in the attitude of most genuine sincerity that we assume to-day the responsibility for administering the work—Evangelistic, Educational, and Medical—established and administered hitherto by the New Zealand Presbyterian Mission.

"Having assumed this responsibility, from this day forth the Kwangtung Divisional Council of the Church of Christ in China will strive to the utmost, in carrying out this responsibility, to realize the very purpose for which Christ established His Kingdom in the earth, as well as the purpose for which our Council has been organized.

"It is our hope that, working hand in hand with the Presbyterian Church of New Zealand, we may together succeed in carrying out this purpose.

"GREETINGS!"

This statement is signed by Rev. L. T. Kwong and Rev. Y. S. Tom, Chairman and Executive Secretary respectively, of the Kwangtung Divisional Council.

The work of the New Zealand Church included the large hospital at Kongchuen with its training school for nurses, and it is the position of the hospital thus handed over that interests us most here. It will be my endeavour to show just how the hospital now stands and what the special difficulties are which have to be met in the new situation.

It is well at the same time to remember that this hospital is placed in a region which has now for some two years been very seriously disturbed with much political upheaval, banditry and constant changes of government. I recently heard one of the missionaries say that there had been four changes of government in the past six weeks. It is needless to point out that any success attending this effort is therefore particularly noteworthy and the difficulties in connection with the hospital should be at least somewhat discounted.
Organization of the Hospital.

The organization may be diagrammatically represented as follows:

Synod of the Church of Christ in Kwangtung

Medical Committee of Synod
  responsible directly to it

Medical Board of Kongchuen Hospital
  responsible to the Medical Committee

Staff of Hospital

Details of the bodies referred to above should now be given.

Medical Committee of Synod.

This is one of the regular Synodical Committees and its members were appointed by the Synod itself. Their duties are to make themselves responsible for the work of any hospital taken over by the Kwangtung Synod of the Church of Christ and to report to the Synod thereon; to co-ordinate such medical work of the Synod in different districts, and to recommend to the Synod the initiation of new work.

The personnel consists of six members, one of whom is the Executive Secretary of the Synod ex-officio, and the other five members are all doctors. At the moment three of these are Chinese and two are foreign missionaries.

Medical Board of the Hospital.

In view of the fact that this is an entirely new experiment an Advisory Committee was first appointed by the Synod Executive to nominate members for the Hospital Board. This Advisory Committee in consultation with the Medical Committee nominated the Members of the Board and these having been duly approved were appointed by the Synod Executive.

As soon however as the Board was constituted the Advisory Committee was dissolved.

It is perhaps interesting to note that no individual invited to become a member of the Hospital Board refused to accept office.

The personnel of the Medical Board consists of 9 members with in addition the Medical Superintendent of the Hospital without a vote.

The Board as constituted contains:
Two Foreigners (missionaries non-medical) and seven Chinese.

The Chinese Members are:

The Executive Secretary of the Synod ex-officio. Two doctors—resident in Canton (one of these is Chairman of the Board). The Dean of the Women's Faculty of the Lingnam University.

Three local merchants. Of these two are Christian and one non-Christian.

Staff of Hospital.

The Staff of the Hospital consists at the present time of the Medical Superintendent (foreign) and two Chinese doctors, the Nursing Superintendent (Chinese), two Foreign nurses (one of whom has been only a year on the field and is still doing language study), and two Chinese graduate nurses as well as the pupils in the Nursing School, and one Business Manager (Chinese).

Since the change of administration was inaugurated the hospital has been in a much better position than formerly to deal with those occasional internal and external troubles which have been the universal experience of kindred institutions throughout the province during the past few years. The moral support of the Board (and the Church at the back of it) in dealing with periods of inevitable restlessness on the part of the nursing students and in cases of necessary discipline has been invaluable.

In closing I think it would be well to call attention to the advantages that have accrued to the hospital by the new arrangement, to make a few criticisms of the plan and to point out one or two difficulties.

The advantages come first and are really the most important. First and foremost of these I believe would be placed by the Medical Superintendent, the recognition through the whole area that this is now a Chinese and not a foreign hospital, and this has probably largely helped to carry it through the many difficulties of the past months associated with the constant political changes. Next, though this cannot be divorced from the former, is the freedom of the Medical Superintendent from certain very serious worries of the past. As an example of this, a threat of labour troubles arose in connection with the hospital from outside. The Superintendent, instead of having to lay his work aside and take up negotiations with the Chinese authorities on the matter, at once referred it to the Chairman of the Board who in his turn consulted the Chairman of the Synod Executive. These gentlemen arranged for a deputation to the District Magistrate. The Deputation, entirely composed of Chinese, was received in a very
friendly way. The position of the hospital was explained and the threatened trouble averted. This is but an example of what such an arrangement is able to effect.

The Board is responsible for finance.

Finance.

At the First Annual Meeting of the Hospital Board held in July 1927 the following Budget was passed for the ensuing year.

**Receipts HK currency**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.Z. Presbyterian Church Grant (ordinary)</td>
<td>$6,000.00</td>
</tr>
<tr>
<td>(special for Repairs and Improvements)</td>
<td>250.00</td>
</tr>
<tr>
<td>Church of Christ in China</td>
<td>500.00</td>
</tr>
<tr>
<td>Board of Directors</td>
<td>1,500.00</td>
</tr>
<tr>
<td>Employee's Boarding Receipts</td>
<td>2,760.00</td>
</tr>
<tr>
<td>Inpatient Receipts</td>
<td>13,750.00</td>
</tr>
<tr>
<td>Outpatient ,,,</td>
<td>800.00</td>
</tr>
<tr>
<td>Donations (per Hospital)</td>
<td>500.00</td>
</tr>
<tr>
<td>Miscellaneous Receipts</td>
<td>2,000.00</td>
</tr>
<tr>
<td><strong>Total Receipts</strong></td>
<td><strong>$28,060.00</strong></td>
</tr>
</tbody>
</table>

**Expenditure HK currency**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries, Wages, Boarding</td>
<td>$9,000.00</td>
</tr>
<tr>
<td>Domestic Expenditure</td>
<td>13,060.00</td>
</tr>
<tr>
<td>Miscellaneous (including improvements and repairs)</td>
<td>2,250.00</td>
</tr>
<tr>
<td>Medical Supplies</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Surgical ,,,</td>
<td>1,750.00</td>
</tr>
<tr>
<td><strong>Total Expenditure</strong></td>
<td><strong>$28,060.00</strong></td>
</tr>
</tbody>
</table>

According to present arrangements the N.Z. Presbyterian Mission promises to continue its past grant for current expenses to the amount of $6,000 per annum and not to reduce this, unless for serious cause, for a period of at least five years.

The Medical Board this year undertakes to raise $1500 and solicits the Church Synod to contribute another $500. The suggestion already adopted at the Annual Meeting of the Synod last July is that the Church members in the province shall be asked on a special “Hospital Sunday” to be arranged for, to give a voluntary offering in aid of the Church’s medical work.

The Kong Chuen Hospital has had a fixed grant from the N.Z. Presbyterian Mission which has covered about $\frac{3}{4}$ of its annual budget, the raising of the remaining $\frac{1}{4}$ has been the sole responsibility of the Superintendent and his staff. Although the hospital superintendent still, of course, carries a considerable responsibility for hospital finance,
he now has the Board at his back pledged to support the financing of
the hospital's work, and should there be any lack it is upon the Board
that the responsibility falls to meet the need. At the back of the Board
is the Synod of the Church of Christ in China.

Now I feel personally that this whole scheme is open to one
criticism and that is the constitution of the Medical Board. My own
opinion is that the medical profession is quite inadequately represented
on the Board and that the large majority of a lay element may in the
future give rise to trouble in details of hospital management. Further
I think that the Medical Superintendent should be a full member of
such a Board with a vote and also that there should be a representative
of the Nursing Staff on it. I think that this matter, not as regards
this special case but in respect of the general principle should be
carefully considered by our Missionary Division and especially by the
Chinese Members of it.

And now lastly I wish to refer to the one difficulty which this
hospital in particular and which our hospitals in general are likely to
meet and which is the only factor that in any way endangers the
scheme.

It will have been noted that the medical superintendent is a
foreigner. Now as I have pointed out above there is not the slightest
objection to this in principle. He acts as a servant of the Church of
Christ and it is a small matter to what race he belongs. But it is of
very serious import that he is acting as Superintendent solely because a
well qualified Chinese Doctor will not face the responsibility involved.
We happen to know that this is very far from being an isolated case.
The position in China at the present moment is that Chinese Medical
and Nursing Superintendents are often unwilling to take office or are
anxious to resign if they have taken office unless they have a foreigner
behind them to back them up and to carry quite a good deal of the
responsibility himself or herself. I have stated the case quite frankly
as I feel it should be stated; the fault may be our own in not having
in the past gradually put the responsibility on these men as we should
have done, but this and the terrible lack of a sufficient number of well
qualified men with the intense desire for carrying the Gospel to their
own people are the two factors which threaten the success of any true
scheme of devolution.

In the present case the Medical Superintendent is due his furlough
and must leave in the course of the next few months. In view of the
unwillingness of the Chinese to assume responsibility the position of
the hospital becomes precarious. It is true that in the past Foreign
Mission Boards have had to close hospitals in the necessary absence of the doctor in charge, but that this should possibly be so when the responsibility is completely transferred to the Chinese Church is nothing short of a tragic situation.

A LETTER TO THE MISSION BOARDS

It has been brought to the knowledge of the Council of the Missionary Division that there is an unwillingness on the part of the Home Boards to sanction the return of some of their medical missionaries or to appoint new doctors to China. It is quite easy to understand such reluctance, especially in the absence of a definite policy with regard to Mission Hospitals. On the other hand it is evident that with the country as disturbed as it is no final policy can possibly be adopted. We feel however that this is no reason at all for failing to seize the opportunity of reoccupying the hospitals as occasion offers and this is certainly possible in many districts. In others it is still quite impossible and set backs may still occur in what appear to be likely situations for again taking up work. We cannot believe that this is any true reason for holding back men who might be engaged in missionary work and re-opening closed centres. This was not the spirit that brought the missionary out to China or that opened up in the face of much opposition many closed doors sometimes only after numerous apparent defeats. Nor was it the spirit of the first great missionary who counted not life itself dear to him if he could finish his ministry to testify the gospel of the grace of God.

Only in this way can China or the world be won for Christ and the Council has therefore sent a letter, a copy of which is given below, to the different Mission Boards having Medical Mission work out here.

The China Medical Association
Missionary Division

Dear Sir:

It has recently been brought to the knowledge of the Council of the Missionary Division of the China Medical Association that medical missionaries now on furlough are being detained in view of the supposed necessity of formulating a definite policy for the carrying on of medical mission work in China before their return to their stations. We are not aware as to how far this may be the avowed intention of the Boards and Societies at home but we believe that a statement of the present position here will be generally welcomed and may assist the Boards at this critical period in coming to a decision about the return of missionaries to the field and the obtaining of new recruits. We would emphasize that in doing this we are referring to medical missionaries only, as
Missionary Section

our knowledge of other branches of the mission service is not sufficient to arrive at an opinion and we should be going beyond our province if we attempted to do so.

On the other hand with as full information as it is possible at the moment to have of the position of medical mission workers all over China, this international and interdenominational Council feels that it would be failing in its duty if it did not place the facts before the Home Boards and Societies and the deductions that it believes should be made therefrom.

The facts as they present themselves to our notice are as follows:

1. During the past twelve months the political upheavals in China drove from their stations either directly or at the earnest request of their national consular agents in whose action the Mission Boards concurred, the large majority of the foreign medical missionaries in China.

2. Many of the medical missionaries took furlough either approximately due at the time of their leaving their stations or ante-dated because of the disturbed conditions.

3. The remainder were compelled to stay at the coast ports or to assist in work in neighbouring countries.

4. A few of the hospitals were seized or destroyed but the majority were carried on by the Chinese staff as best they could under the very difficult circumstances. For the loyalty of these men and women no praise is too high.

5. During the past two or three months there has been a steady return of the foreign doctors to their stations where almost without exception they have met with a very hearty welcome both from the people and from their Chinese assistants. Exceptions must be made to this statement in the case of a few of the larger cities and to one or two areas especially in north-eastern Kwangtung where the communist element is still in power and continues to commit horrible outrages on the people, and in Honan where the country has been terribly ravaged by conflicting armies and continues to be in this unhappy condition.

6. The political troubles, which are yet prevalent, have destroyed two of the mission medical schools and have suspended the activities in whole or in part of practically all the purely Chinese medical schools. The result of this is that the output of trained doctors in China for the next few years has been lessen by more than a half.

7. The foreign doctors returning to their stations are taking up work again according to the individual needs and possibilities of each separate locality and without any idea of a uniform policy which in the conditions of the time would be out of the question.

These are the facts of the case as they apply to this country at the moment and everything points to a continuation for the time of this state of things with increasing opportunities for the doctors to return to work.

Certain deductions with regard to foreign medical missionary work can clearly be drawn.

1. The need for foreign medical missionaries in China will in the long run be increased rather than diminished by the present troubles. The needs of the people in the country districts are greater than they ever were while the supply of doctors is smaller than it has been for years. The people are
impoverished by heavy taxation to meet the needs of the armies, and by the excesses of the soldiers, while these have added largely to the toll of communicable diseases. The supply of Chinese doctors as shown above must greatly decrease in the next few years and in addition to this large numbers of those formerly in practice in country districts have been caught up by the armies. The enormous increase of the opium habit in certain areas adds to the prevalent physical distress.

2. The preventive aspect of medicine should be stressed, especially with those newly coming out in view of the present special conditions.

3. The establishment of a general policy of devolution with regard to the mission hospitals in the disturbed conditions of the moment is quite impossible. These are ideals which must be kept to the front; and policies which would place the bulk of the work and responsibility both for organisation and finance on Chinese shoulders must not be lost sight of, but the crying need of the moment is to relieve the sufferings of the people. The former work should be re-established on the basis best suited to each separate locality.

4. The opening for medical evangelism is greater than it has ever been. The anti-Christian outbreak has completely died down in most places and the people are particularly open to the Gospel message. The ordinary evangelistic methods are still in abeyance in many places owing to the increase of banditry in the country districts, the problems of the educationalist are still unsolved and no immediate solution is in sight. The hospital as a basis for evangelistic work is in a unique and wonderful position and it will be tragic if this opportunity is lost.

A general summary of the position then is that the medical missionary work can be resumed in most centres with possibilities of a uniquely successful missionary enterprise. In the past medical missions have proved the spear point of the mission advance into unoccupied regions. Now it offers the certainly successful method of taking up the missionary work again and regaining lost ground. It is however essential that the hands of the workers should not be tied by questions of general policy nor that medical missionaries should be held back till problems of policy have been solved.

Further the crisis in China demands a fresh supply of consecrated men and women. We believe that if this is fairly put before the Churches at home both the personnel and the finances will be forthcoming and we would beg the Home Boards and Societies to broadcast this appeal as widely as possible.

A time of crisis in national affairs has ever called forth an adequate supply of volunteers for the succour of their own lands and we cannot believe that the Church in time of crisis will ask in vain for men and women for a cause greater than any merely national need. The danger, if one there be, is that some fear of embarking on a wrong policy should hold the leaders back from putting forth the clear note of appeal that the time and the cause of Christ require.

In the name of the medical missionaries of China,

I am,

Yours sincerely,

James L. Maxwell
Secretary
The fact cannot be over-looked that, if prevention were carried out on the public health lines to be suggested, machinery would be brought into existence whereby cases of cancer would more often be detected in the early stages of the disease. The peril was so great that if we failed soon to conquer this disease, a few years hence nations would not be fighting one another, but would have united to stamp out a horror that might threaten the very existence of mankind. Professor Bell did not agree with those who asserted that the rapid increase in the mortality-rate of malignant disease must reach a peak, and then recede. It appeared, rather, that, if unchecked by science, cancer would only cease to exist when there was no longer material on which it could develop.

A Growing Mortality-Rate

There seemed little doubt that the mortality-rate from cancer in most civilized countries was on the increase, in support of which view Professor Bell gave the following statistics, showing the deaths from cancer per million persons living in England and Wales:

<table>
<thead>
<tr>
<th>Year</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1847-1850</td>
<td>274</td>
</tr>
<tr>
<td>1851-1855</td>
<td>306</td>
</tr>
<tr>
<td>1856-1860</td>
<td>327</td>
</tr>
<tr>
<td>1861-1865</td>
<td>367</td>
</tr>
<tr>
<td>1866-1870</td>
<td>403</td>
</tr>
<tr>
<td>1871-1875</td>
<td>445</td>
</tr>
<tr>
<td>1876-1880</td>
<td>494</td>
</tr>
<tr>
<td>1881-1885</td>
<td>548</td>
</tr>
<tr>
<td>1886-1890</td>
<td>632</td>
</tr>
<tr>
<td>1891-1895</td>
<td>712</td>
</tr>
<tr>
<td>1896-1900</td>
<td>800</td>
</tr>
<tr>
<td>1901-1905</td>
<td>867</td>
</tr>
<tr>
<td>1906-1910</td>
<td>939</td>
</tr>
<tr>
<td>1911-1915*</td>
<td>1,055</td>
</tr>
<tr>
<td>1916-1920*</td>
<td>1,182</td>
</tr>
<tr>
<td>1921-1925</td>
<td>1,269</td>
</tr>
<tr>
<td>1926</td>
<td>1,362</td>
</tr>
</tbody>
</table>

In 80 years the death-rate of malignant disease had increased fivefold, and this had gone hand in hand with improved diagnosis.

*Civil population only.
The actual numbers of persons whose deaths in 1916 and 1926 were recorded as being due to malignant disease, are shown in the following table:

<table>
<thead>
<tr>
<th></th>
<th>1916</th>
<th>1926</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated total population</td>
<td>36,480,000</td>
<td>39,069,000</td>
</tr>
<tr>
<td>Deaths from all causes</td>
<td>508,217</td>
<td>453,804</td>
</tr>
<tr>
<td>Deaths from cancer</td>
<td>40,630</td>
<td>53,220</td>
</tr>
</tbody>
</table>

From these figures it was clear that in 1916 of all deaths from birth upwards, was, one in every twelve, due to cancer, and in 1926, one in every eight deaths. In 1926, between the ages of 40 and 50 years, one in every six deaths was due to cancer, and between the ages of 50 and 70 years, one in every four. In the list of causes of death in England and Wales malignant disease now stood third. Little need be said regarding age, for it was well-established that in old age cancer was more frequent than in the middle period of life. Of 53,220 deaths from malignant disease in 1926, only 2,448 occurred in persons under the age of 40 years.

**Susceptibility of Women**

The sex of the person appeared at first sight to be of some importance, for more women than men died of the disease, but over the age of 40 years, this might be dependent on the greater number of women in the population. In the age-periods under 40 years in 1926, five females to every three males died of the disease—namely, 1,551 females and 897 males. Sex-predilection seemed, however, to be intimately connected with the site of disease.

According to the published figures relating to the year 1925, it was evident that of organs similar in the two sexes, the stomach and intestines, including the rectum, were most frequently affected. In males, out of 24,002 deaths from cancer, 10,739 were due to disease in the organs mentioned, and, in females, out of a total of 27,937 deaths from malignant disease, 9,857 occurred in these organs. But in women, the reproductive organs were singularly prone to malignant disease. In the same year, however, whereas in males the number of deaths from malignant disease of the lips, tongue, mouth, jaw, tonsils, pharynx, and oesophagus numbered 4,622, in females, cancer at these sites caused only 1,032 deaths. From the statistics quoted we gleaned that malignant disease was very rare still—in spite of individual impressions—before the age of 40 years, and that it killed more women than men, this excess being accounted for by the extreme frequency of cancer of the reproductive organs and by the larger number of women in the population.—*N.C.D.N. Jan, 14. 1928 (from the Manchester Guardian.)*
Adhesion of the Suture Line.—I am persuaded that the commonest cause of persistent and sometimes dangerous vomiting after gastric operations is a sticking together of the anterior and posterior suture lines in the mucosa. Of course, a careless surgeon may actually sew them together, at any rate at a point or two, but apart from this gross technical error it is possible for the cut edges to adhere. If this occurs there will be copious and persistent vomiting, which differs from that of vicious circle in that no bile is brought up. The bile cannot enter the stomach, and the gastric contents cannot leave it. I first learnt of this danger after performing gastro-jejunostomy for pyloric ulcer.

The patient, a woman, vomited about twice a day for three days, bringing up all she took and much gastric juice besides, but no bile. I reopened the abdomen, and found the stomach very large and tense, but the jejunum empty. On opening the jejunum and inserting a finger it was perfectly plain that the anterior and posterior edges at the anastomosis had stuck together. It required some little force to separate them, but they were not bridged by a stitch. After various other complications she recovered.

A few weeks after, a patient with cancer, on whom I had performed a partial resection by the Polya technique, began to vomit the day after operation, and brought up all she was given, and much gastric juice besides, for three days. I reopened, and found a huge tensely distended stomach and an empty jejunum. Here also exploration with a finger inside showed that the suture line had adhered tightly, but there was no stitch bridging it. She died.

These two cases brought to my mind other patients at an earlier date, who gave me great anxiety for a few days by persistent vomiting, which then stopped. It is quite likely, of course, that sufficient pressure might be developed in the stomach to force the passage; in fact, in both my cases the stomach was extraordinarily tense. If that happened the condition would be relieved.

In my opinion, then, adherence of the suture line is a not uncommon, and potentially very serious, complication of gastric surgery. Fortunately it is easily prevented. Ever since the experience related above I have inserted a piece of corrugated rubber dam, a little larger than a postage stamp, within the lumen of the anastomosis, fixing it by a fine catgut stitch to the mucosa of the stomach so as to overlap the suture line and point the way to the efferent loop of jejunum. I have had no trouble with vomiting after stomach opera-
A SEVERE AND EXTENSIVE BURN TREATED WITH SOLUTION OF TANNIC ACID

JOHN HUNTER, M.B.

A young girl received a very extensive and severe burn from an explosion of gasoline. The lower third of the face, anterior and lateral surfaces of neck, anterior and inner surfaces of both arms from shoulders to wrist, and both surfaces of hands, and fingers, with smaller areas on hip and around ankles were involved. The degree of injury varied from a pathological hyperaemia of the skin on the face and neck and destruction of epidermis on hands and fingers, to charring of muscle tissue and destruction of hair follicles and sweat glands, especially on the inner surface of right arm, and anterior surfaces of both forearms. The patient suffered severely from shock.

The fire brigade arrived first, as the room was on fire, and they applied a picric acid dressing as "first aid," which a young physician removed, and substituted a carron oil dressing. This was renewed next morning, after which the case came under the writer's care as family physician. The carron oil dressing was used a third time, but the pain in changing the dressing was so great, and the discharge so profuse that the patient was completely exhausted. The carron oil was immediately discarded, the wounds cleaned with sterile gauze, and a solution of tannic acid (2½ per cent) sprayed on, sufficient to procure a coating one-quarter inch thick. The spray was used when needed to close any cracks in the dressing. No bandaging was used, and no water or oil allowed to come in contact with the dressing. The limbs and patient were placed in the most comfortable position and protected by a sheet. The tannic acid dressing was allowed to "peel off" itself, which took about three weeks to complete. Pain was promptly relieved, and there was no more distress and fatigue from changing the dressings. The profuse discharge was greatly lessened, and although there was considerable pus from several deep abscesses in the more deeply charred tissues, yet these cavities filled up quickly, and were covered with epidermal cells quite as soon as the less injured tissues were. The writer was greatly perturbed, as this was his first experience with tannic acid, when he saw pus oozing out from under the
dressing, but his fears were groundless, as the tannic acid either disinfects the pus or inhibits its toxic effects.

Tannic acid is *par excellence* the drug for use in dressing burns. A teaspoonful of the powder is dissolved in a tumbler of water and sprayed on to form a thick coating. No bandaging or dressing is desirable. Prompt relief of the pain follows. The amount and toxicity of the discharge is lessened. The patient’s comfort and well-being is greatly improved; and after the dressing peels off a clean healthy surface is left.—*Can. Med. Ass. Jour.* November, 1927.

---

**STUDIES ON THROMBO-ANGIITIS OBLITERANS (BUERGER)**

**THE EFFECTIVENESS OF THERAPEUTIC PROCEDURES**

*Samuel Silbert, M.D., New York*

It is generally recognized that, when a great many remedies are proposed for a condition, it is likely that no one of them is entirely satisfactory. A review of the recent literature dealing with thrombo-angiitis obliterans reveals a situation of this kind in regard to this disease. A great variety of procedures have been tried and therapeutic success is claimed by the sponsor for each of them, but the evidence presented is unconvincing, as in no instance has a group of patients been followed for a number of years to see what permanent benefit has been obtained. The relief of pain has generally been used as the criterion by which to judge that the treatment has resulted in improvement. And yet, it is well known to any one with experience in the treatment of this disease that occasionally pain will suddenly and inexplicably subside even without treatment of any kind, and without any visible change in the gross objective condition.

In a chronic process of this type, nature sometimes comes to the assistance of the patient to limit the necrotic process spontaneously or heal the ulcer or develop a collateral circulation in an affected extremity. In the face of these facts, claims for improvement due to a specific means of treatment must be made with great caution. Frequently, patients who have apparently been relieved by treatment will relapse and progress rapidly to amputation a short while later. A wide experience with this disease has led me to the conclusion that the only satisfactory criterion by which to judge the effectiveness of a method of treatment is the ability to save the extremities of these patients.

A rapid survey of the recent papers dealing with the treatment of thrombo-angiitis obliterans will illustrate the diversity of measures that have been proposed. The first significant suggestion came from Japan.
in 1916, when Koga reported benefit from frequently repeated subcutaneous injections of Ringer’s solution. In a group of patients treated in Germany, Schlesinger noted improvement from repeated subcutaneous injections of sodium nitrite. In France, the Leriche operation or femoral sympathectomy was employed, a procedure from which I have never seen any permanent benefit. More recently, improvement has been claimed from the use of insulin. A paper published by Brown from the Mayo Clinic reported favorable results in four cases treated by lumbar ramisection, although the patients were observed for less than ten months. Phillips and Tunick reported excellent results from the use of deep roentgen-ray therapy over the lumbar spine in a series of fifty cases treated at the New York Hospital for Deformities and Joint Diseases, although all their cases were observed for less than a year. A noted surgeon at one of our foremost scientific hospitals has had the courage to suggest that the way to improve the inadequate circulation in an affected extremity is to ligate the main arterial supply and thus produce improved collateral circulation. This conclusion is based on a roentgen-ray and pathologic study of two amputated extremities. The procedure was actually carried out on one patient, and after less than three months’ observation it is reported that he is improved. Steel reported improvement in six patients treated by intravenous injections of sodium citrate. Suprarenalec­tomy has been performed by European surgeons in 120 cases, reports of which were collected by Herzberg. He reviews the literature and finds that although the immediate effects were often good, the end-results have been disappointing, as the majority of patients followed up required amputation. Among the more innocuous methods of treatment are the exercises advocated by Buerger, the white light treatment favored by Frauenthal, and the administration of large quantities of fluid by duodenal tube, employed by Dr. Willy Meyer. I have contributed an article advocating the repeated intravenous injection of hypertonic sodium chloride solution, based on experience with sixty-six cases observed for about three years. The criterion of improvement employed by most of the writers named has been the relief of pain during the period of observation, which was usually short. It is not reported for how long pain was relieved or how many of the patients subsequently came to amputation.

To establish a basis for comparison, I carried out an extensive study of the spontaneous course of thrombo-angiitis obliterans unmodified by treatment. I have personally examined 184 cases of thrombo-angiitis obliterans, seen in hospital, dispensary and private practice, and have studied our hospital records of seventy-four additional patients with this disease.
From a study of this material I have found that nearly every case of thrombo-angiitis obliterans followed for a sufficient number of years has come to amputation. Of 258 patients, amputation of one or both lower extremities was done in 137. In 120 of the 137, or 87 per cent, amputation became necessary and was performed within five years from the onset of the symptoms. Of the remaining 121 of the 258 patients—those in whom an amputation was performed—the spontaneous course without amputation exceeded five years in only eighteen. It is thus fair to state that of the 155 cases of thrombo-angiitis obliterans followed for a sufficient time, 77 per cent came to amputation within five years from the onset of symptoms and this figure may be accepted as representing the probable outlook for untreated cases of this disease.

I take this opportunity to state my conviction that, whatever the underlying cause, prolonged smoking is the immediate causative factor in the production of this disease. I have passed through the phases of skepticism in regard to the importance of smoking, and it is only after considerable clinical experience that I found that I could no longer disregard this outstanding fact. The vast majority of smokers never develop signs of this disease. Furthermore, experimental work on the effects of smoking has thus far failed to produce convincing evidence of pathologic changes in the vessels due to this cause; but these experiments were conducted with normal animals. It must be concluded, therefore, that smoking is not the sole cause of the disease, but that an additional underlying factor, a predisposition to vascular disease, or special susceptibility to the effects of tobacco poisons is present in the patients who develop thrombo-angiitis obliterans.—J. A. M. A. September 17, 1927.

THE VACCINE TREATMENT OF ACUTE PNEUMONIA

W. H. Wynn, M.D., F.R.C.P.,
Professor of Medicine in the University of Birmingham

For acute lobar pneumonia I use a stock vaccine of pneumococci made from primary growths under twenty-four hours old. The vaccine contains several strains, but it is more important that it should be an active vaccine from virulent organisms. For an adult at least 100 millions should be injected, for a child aged 12 half the dose, and a child aged 3 or 4 a quarter. As at present true lobar pneumonia is comparatively infrequent, and the majority of cases we see are bronchopneumonias of mixed infection, I use a vaccine containing equal parts of pneumococci, streptococci, and B. influenzae, 100 million of each.

In either case the important thing is to inject early. I would urge that pneumonia be regarded as an acute emergency, demanding as
prompt action as an acute surgical emergency such as a perforated ulcer. Our plan should be “strike early and strike hard.” It is a great advantage of vaccine treatment that a stock vaccine can always be at hand and injected at once. The object is to control the infection as soon as possible after its onset and so prevent dangerous intoxication. After the toxins are fixed in the cells the issue is out of our hands. If injected within the first twenty-four hours after the initial rigor it is my experience that in the majority there is a fall of temperature combined with general improvement during the following twenty-four hours. The earlier the injection the more certain the result. If the first injection fails we can repeat the vaccine every twenty-four hours.

The results in 100 consecutive patients were that 49 were injected during the first three days; of these only one died. This was a pregnant woman who had been a chronic asthmatic and was confined forty-eight hours after the onset of pneumonia. Of 51 injected after the third day 12 died. This shows the importance of treatment before dangerous intoxication has occurred.

Of patients injected during the first day, 83 per cent had a normal temperature in twenty-four hours and 100 per cent in forty-eight hours. Of those injected on the second day, 57 per cent had a normal temperature in twenty-four hours, 93 per cent in forty-eight hours, and 100 per cent in seventy-two hours, whereas of those injected for the first time on the third day only 20 per cent had a normal temperature in twenty-four hours, 60 per cent in forty-eight hours, and 73 per cent in seventy-two hours. I think those figures again show the importance of early treatment.

In vaccine therapy, therefore, I consider that we have a weapon which can be applied promptly and effectively, and which, if used on a large scale, would help to reduce the very high mortality from pneumonia.—B. M. J. Sept. 17, 1927.

AN UNUSUAL METHOD OF TREATMENT OF MORPHIA POISONING

The danger in all cases of morphia poisoning lies in the failure of the respiratory centre, and after appropriate treatment has been employed to eliminate the poison, every effort should be made to stimulate the centre. We are told to give strychnine and atropine hypodermically, and strong coffee by the mouth or rectum; and to walk the patient about so that the muscles may increase the amount of CO₂ in the blood; but the easiest method of stimulating the centre when the facilities are present is to make the patient breathe a mixture containing 10% of carbon dioxide.
A woman, æt. 21, who had been subject to such severe attacks of asthma that she had been admitted to the general wards on three occasions during the last nine months, had an unusually severe attack. As she had failed to respond to the routine treatment, including adequate doses of adrenalin, she was given morphia, gr. ½, atropine gr. ⅒₁₀₀₀, hypodermically at 10 a.m., and as there was no improvement this was repeated at 3.30 p.m. By 6 p.m. she presented the typical clinical picture of acute opium poisoning as she lay with an ashen complexion and pin-point pupils—having slow, shallow respirations and an only just palpable radial pulse. The more usual methods of treatment having been tried without any improvement in her condition, it was decided to attempt to stimulate her respiratory centre with carbon dioxide given by means of a Boyle's anaesthetic apparatus. An intranasal catheter was passed, and oxygen containing for the first half minute 5% and subsequently 10% of carbon dioxide was administered. There was immediately a dramatic change in the patient's condition, for within thirty seconds her respirations became deeper and her cyanosis disappeared. She had recovered sufficiently to speak 1½ hours later, but the catheter was not removed until four hours later, when the patient had nearly completely recovered. In our opinion this case would have proved fatal treated by any other method.—St. Bartholomew's Hospital Journal. September 1927.

EXPERIMENTAL TRACHOMA

The report by Noguchi of the Rockefeller Institute for Medical Research in a recent issue of The Journal serves to strengthen materially the evidence in favor of a parasitic origin of trachoma. He has succeeded in producing in monkeys ocular lesions closely resembling the clinical and histopathologic aspects of the human disease. This result was secured by inoculation of the primates with cultures of a micro-organism isolated from human cases among the American Indians. The bacillus is superficially like some of the diphtheroids, though differing from them in many ways. The transmissibility of the experimental conjunctival disease in series has been clearly established. Koch's postulates have been fulfilled.

Possibly, the Indian malady is distinct in its etiology from the trachoma encountered among other persons. The presumption is, however, against such a diversity. Noguchi's result appears, like many of his earlier accomplishments, as a triumph of investigative skill coupled with patient effort and scientific logic. This is emphasized by the circumstance that direct inoculation of monkeys with human material failed. Not until the various microbial contaminants of the eyes of trachoma patients were isolated and tested in pure cultures was
success attained with one of them. Apparently the natural resistance to the disease can be broken down or overcome only by massive invasions of the causal bacteria. The imagination will suggest easily what the success of various investigators in transmitting trachoma experimentally may lead to in the direction of prevention and treatment.—*J. A. M. A. September 17, 1927.*

**A SIMPLE BLOOD TEST FOR DIAGNOSIS OF KALA-AZAR**

While working at the antimony test we have been trying to simplify it so that any medical practitioner could perform it in the field and confirm the diagnosis he has made clinically without any elaborate technique. In this we have fortunately succeeded.

*Technique.*—All that is required are a 2 per cent. solution of potassium oxalate, a 4 per cent. solution of a urea antimony salt such as ureastibamine, two small test tubes and a few Dreyer's tubes, which simply consist of 2-inch pieces of glass tubing 3 to 4 mm. in diameter sealed at one end. Both the potassium oxalate and antimony solutions once made can be stored for a month or even longer in glass stoppered bottles. One or two drops of blood obtained from a finger pricked with a needle are allowed to mix well with about 0.25 c.c., of a 2 per cent. solution of potassium oxalate. This can be easily done by putting the mouth of the small test tube containing the oxalate solution firmly against the tip of the cleaned and pricked finger from which the blood is oozing and inverting the tube 2 or 3 times over it. Alcohol should not be used for cleaning the finger as if some of it gets into the oxalated blood solution a precipitate is formed.

A little of the solution is transferred into a Dreyer's tube and a 4 per cent. solution of the antimony compound is added by means of a capillary pipette along the side of the tube. The heavy antimony solution sinks to the bottom, and in cases of kala-azar a flocculent precipitate forms almost immediately at the junction of the two fluids. This precipitate soon settles down at the bottom of the tube with the red corpuscles entangled in it. In very early cases of kala-azar the precipitate may take 10 to 15 minutes, very rarely 1 to 2 hours to appear, but in well developed cases it appears almost immediately after the solutions are mixed. The precipitate is obvious to the naked eye but the use of an ordinary magnifying hand lens is helpful in doubtful cases.

It should be mentioned here that solutions of potassium oxalate stronger than 2 per cent by themselves form a precipitate with the antimony compounds even in the absence of kala-azar blood. Solutions
weaker than 2.0 per cent do not give satisfactory results. 0.25 c.c.,
of oxalate solution is just enough for one or two drops of blood; the
greater the quantity of oxalate solution, correspondingly larger would
be the amount of blood that will be required.

This simple test has great possibilities as it can be applied in the
field on a very large scale in areas in which kala-azar is prevalent.
The test, like the antimony serum test, is given by early cases of the
disease and we have no doubt it will help the kala-azar centres in the rural
areas to diagnose very early cases of the disease. Further possibilities
of this test are under investigation. Ind. Med. Gaz. August, 1927.

A CONGENITAL CASE OF KALA-AZAR

Low (George G.) & Cooke (W. E.)

An Englishwoman aged 33 was incompletely treated with urea
stibamine for what was thought to be kala azar in Calcutta, after which
she returned to England, where she again became seriously ill and was
given further injections of the same drug, as a result of which
improvement occurred. About 2½ months later a healthy child of
normal weight was born. It was not nursed at any time by the mother,
who after her confinement began to fail in health again and was admitted
to the Hospital for Tropical Diseases, where it was found that she
showed all the symptoms of kala azar. As there was no doubt as to the
diagnosis, treatment with Von Heyden 471 (stibosan) was commenced.
After the administration of 4 gm. of the drug she was discharged to all
intents and purposes cured.

For the first fortnight after its birth the child progressed normally.
It had a convulsion, was not well for a week and did not completely
recover. About 7 weeks later it had had diarrhoea and pain and was
taken into a nursing home. During her period in hospital the mother
inquired if it were possible that the child's illness could be kala azar and
examination of the child was suggested, and this was done about a
month after the mother was discharged. The child did not look well,
but as it had no splenic enlargement no puncture was made. During
the next 6 months the child was not well, while the abdomen became
prominent. It was then brought again for examination. There was
marked anaemia, emaciation and protuberant abdomen due to an
enormously enlarged spleen. There was high temperature of a
remitting type, while the blood count showed R.B.C., 1,600,000;
W.B.C., 2,600; Hb. 30 per cent.; poikilocytosis and nucleated red cells
were present. A spleen puncture revealed the presence of leishmania.
The child was treated with stibosan intramuscularly and made what
appeared to be an uninterrupted recovery. About 3 months after the
diagnosis of kala azar had been established in the child the mother again became ill. Spleen puncture was then performed and the presence of leishmania confirmed the original diagnosis.

The interesting point about the child is that of a congenital infection. Owing to the mother’s illness the child was not nursed by her and was mainly looked after by other people. It does not seem probable that infection took place through contact or orally so that the most reasonable conclusion is that infection took place in utero. Against this might be urged that when seen at the age of 7 months there was no enlargement of the spleen and that the illnesses from which the child had suffered were those common in infancy. It was only 6 months later that marked enlargement of the spleen was noted and the diagnosis of kala azar made. It is evident that the increase in size of the spleen took place after the 7th month. The authors are probably correct in their interpretation of the case, but for a final conclusion it would be necessary to find leishmania immediately or soon after birth.— Trop. Dis. Bull. August, 1927.

CLINICAL AND PATHOLOGICAL NOTES ON CASES OF KALA-AZAR

Hodgson (E. C.)

The author discusses certain difficulties encountered in the clinical diagnosis of kala azar in Assam. The main features of the disease are splenomegaly, hepatic enlargement, anaemia, pyrexia and leucopenia while the blood gives the aldehyde reaction. With regard to the first four symptoms cases have been seen in which every one of these was absent over fairly long periods, such as a month. The most constant symptom, unless some complicating disease occurs, is leucopenia, the next being anaemia. In these cases one other feature is very constantly present, and that is an increase in the pulse rate to 90 or 110, even when the temperature is normal or subnormal, the rate scarcely rising when the temperature mounts to 102° or 103° F. A failure to recognize this may account for the fact that so many cases, especially those in Europeans, have been treated for enteric fever. More common are the cases showing enlargement of liver and spleen with a normal temperature. These patients as a rule have a history of treatment for malaria or enteric, but usually without disappearance of the enlargement of the spleen and without slowing of the pulse to normal even weeks after the supposed cure. Such are not necessarily errors of diagnosis, for several examples of kala azar with associated malaria infection have been seen and after quinine treatment the temperature has become normal and the general condition improved. Similarly a case of associated enteric fever improved considerably, showed decrease
in the volume of the spleen and appeared to be convalescing satisfactorily after having gone through an ordinary attack of enteric fever. The only suspicious signs were a persistent rapid pulse and a leucopenia. So many of the cases of kala azar admitted to the Shillong hospital have some secondary infection that one is led to wonder whether a preliminary breakdown of resistance may not be a necessary antecedent to kala azar.

The commonest diseases complicating kala azar are gingivitis and pyorrhoea, malaria during the fever season, hookworm and worm infections generally, dysenteries, both amoebic and bacillary, jaundice, oedema resulting from renal insufficiency, and pneumonia. It comes about, therefore, that in Assam, after making a diagnosis of any disease in an Indian, one must always remember that kala azar may be present also. The successful treatment of these diseases is often followed by such definite improvement that the presence of the underlying malady is unsuspected.

Of a considerable number of drugs experimented with three are mentioned—urea stibamine of Bramachari has been a valuable improvement on tartar emetic, but too much has been ascribed to it; Von Heyden 471 (stibosan) was found to act quite as effectively as urea stibamine, while patients showing toxic symptoms with urea stibamine would not necessarily show them with stibosan. Stibamine glucoside (neostam) of Burroughs and Wellcome was quite as effective, if not more so, than the two other drugs in the 23 cases in which it was tried. A decoction of Vitex pedunculata, a reputed cure for kala azar, was found to be useless while scale preparations of antimony were not as effective as sodium antimony tartrate.

Three cases are quoted to illustrate definite resistance to antimony treatment. It is pointed out that this resistance is often the outcome of an incomplete initial treatment. Another point emphasized is the increase in the size of the liver which frequently occurs as a result of the use of the newer organic preparations of antimony. Recession takes place when the antimony treatment is stopped. In certain cases no diminution in the size of the spleen occurs even after complete disappearance of parasites. These cases are extremely resistant to any form of treatment, though recently X-ray appears to be giving gratifying results.

In fatal cases of kala azar ascites is present in most, the heart is usually found dilated and flabby with degeneration of the muscle fibres, the pancreas is much enlarged, hard and fibrotic, the mesenteric glands are enlarged in cases dying with chronic diarrhoea while the kidneys show an acute inflammation and desquamation of the tubule epithelium which leaves a suspicion of antimony poisoning. *Trop. Dis. Bull* August, 1927.
Book Reviews

MINOR SURGERY

ARTHUR E. HERTZLER, M.D., F.A.C.S. AND VICTOR CHERSKY, A.B., M.D., F.A.C.S.
C. V. MOSBY COMPANY, ST. LOUIS. U.S. $10

In a book of 21 chapters and 556 pages the authors deal with a great many minor surgical and some not strictly surgical complaints.

They start with a description of Sutures of all kinds and then they take up Bandaging, Closure of Wounds, Haemorrhage, Transfusion, and Inflammations dealing with them in a more or less general way.

This takes up about one fifth of the book and after that minor diseases of the body are dealt with regionally starting with some specific infections and then going on to affections of the scalp and cranium, the nose, face, mouth, neck, chest and so on until the whole body has been covered.

There are a great many illustrations most of which are good and many of the photographs are taken in a striking way so that they are not easily forgotten.

The authors modestly say that “the book is prepared with the idea of helping the dispensary student to understand what he sees in the out-patient clinic—it is hoped that the intern may find it useful in his work and that it may be “a source of occasional information to the general practitioner.”

This would have been better attained had the authors covered a less wide field and instead supplied more details, especially of methods of treatment which are often so generalised and short that they can be of little practical value to the beginner. More space for descriptions of methods of treatment could easily have been found had the authors not found it necessary to repeat themselves so often.

It is difficult to see what good purpose is served by giving a separate description of clinical features, diagnosis and treatment of Lipomas in eight different places. Lipomas are the same and the treatment of them is the same wherever the tumour happens to be situated.

The same might be said of contusions which are dealt with in at least five different places and also of a great many other common surgical complaints which are given a separate description under each region where they may be met.

One hopes that in future editions such repetitions may be avoided and valuable space found for a fuller treatment of procedures which now are dealt with in such a very off hand manner that it can be of little good to those for whom it is intended. For instance treatment of prolapse of the rectum in the adult is dealt with in the following words: The redundant bowel may be excised or the intestine retained within the pelvis by fixation through an abdominal incision.”

Surely such information is of little use to the man who wants to know how to set about to “excise the bowel” or to fix the intestine!

The book is interesting because of the number of complaints that are mentioned; it is well worth reading. Some very valuable hints are given and the treatments recommended are safe and well tested procedures; to this perhaps one or two exceptions could be found, thus to suggest that “Hysterectomy may be done for the relief of Vulvitis” seems to be more than radical. P. N. P.
Booth Reviews

GONOCOCCAL INFECTION IN THE MALE

ARR. L. WOLBAST, M.D.
C.T. Mosby Company, St. Louis. U.S. $5.50

This is a Monograph of 229 large clearly written pages dealing exclusively with Gonorrhea in the male.

I have read it with great benefit.

Symptoms and more especially differential diagnosis and complications are very carefully and thoroughly described.

The author draws from a very large experience and the diagnostic methods he describes have stood the test of practical use. They are clearly stated and any practitioner who will take the trouble to follow out his methods should never need to guess at a diagnosis.

For the author's 5 glass differential test he claims: "By means of this test it is a simple matter to differentiate with accuracy the source of pus and threads as between the anterior Urethra, Prostate, Seminal vesicles and the major urinary tract." Surely an optimistic statement but the test is very useful.

The description of treatments adopted is not so detailed and in some places lacks in clearness; for instance of Autotherapy he says that it has been highly recommended but he only has six lines on it in which he says;" The technic is simple: A few drops of blood are drawn off and incubated; of the resulting serum 0.5 to 1 c.c. is injected intramuscularly every few days." One would like to know how to get a few c.c. of serum from a few drops of blood, one would also like to know the incubation temperature and so on.

The newer forms of treatment are more fully dealt with than the older ones and again one has the impression that only what is tried and tested and not found wanting is recommended. To anyone who wants an up to date, readable and trustworthy guide to diagnosis and treatment of Gonorrhea I have no hesitation in recommending the book.

I have found no noteworthy errors, grammatical or otherwise, but it is a pity that a book of this standard should be blemished by always referring to the Compressor Urethrae as the "Shut out muscle."

AIDS TO THE TREATMENT OF DISEASES OF CHILDREN

JOHN McCaw, M.D. REVISED BY F.M.B. ALLEN, M.D.

There are many large and authoritative books on the treatment of children's diseases, but there is no small one as useful as this volume. It contains all the most recent suggestions on this subject. There are quite a number of simple yet good prescriptions given at the end of the book. For those physicians who take special interest in the treatment of sick children, I feel sure that this textbook will prove of great value.

P. N. P.

U. K. K.
The China Medical Journal

Obituary

Dr. Henry Lovett Cumming

The medical profession in China and especially in Shanghai is poorer for the loss of a distinguished member in Dr. Lovett Cumming, who was generally beloved by a wide circle of friends. As a Member of the China Medical Association and acting on one of its committees we shall especially feel his loss. The following obituary notice is taken from the North China Daily News:

Dr. Henry Lovett Cumming was born in Glasgow in 1878 and was educated at Merchiston Castle and George Watson's College in Edinburgh. He studied at Edinburgh University from 1897 to 1902, and before that time had attended the Technical College at Glasgow for a year. In 1903 he became house physician and pathologist at the Prince of Wales' Hospital in London and this was followed by the same post in the Royal Hospital for Diseases of the Chest in London, and by the post of resident medical officer in the City Hospital for Infectious Diseases. He received his M.D. in 1905, and did general practice in southwest London until coming to the Far East in 1910. For the five years subsequent to that time he was medical officer to various groups of rubber estates in Johore and Malaya, and in 1915, he became a lieutenant in the Royal Army Medical Corps, with duties as resident officer at Fulham Military Hospital in London.

His important work in tropical diseases gained for him the Duncan and Lalouca Medals, and degrees were received by him in tropical medicine and public health from Cambridge University in 1917. For a time, also, he was medical examiner for the Chelsea Medical Board.

In 1918 he came to Hongkong and joined the firm of Harston, Mariott & Black, with whom he remained for a year, following which he came to Shanghai to engage in general practice.

Dr. Cumming took an active part in all the Scottish activities of the community, and served for four years on the committee of St. Andrew's Society. He was Master of St. Andrew's Lodge in the Far East and one of the most enthusiastic members of the Masonic order, which showed its respect for him at yesterday's Masonic service at his funeral.

Whether viewed from a personal or professional aspect, Dr. Cumming's death arouses great regret in the community which had come to know him as an eminently likeable man and able physician.
The Secretary

The Secretary has returned to Shanghai after a visit to Peking to attend the Conference of the National Medical Association. The Meetings were of an especially interesting nature as will be gathered from the brief report in this issue.

Dr. R. K. S. Lim

Dr. Lim has been elected as the new President of the National Medical Association. His many friends will congratulate both him and that Association on the appointment.

Mr. J. S. Hogg

We greatly regret having to report the death of Mr. J. S. Hogg when on leave in Scotland from his duties as Comptroller of the Peking Union Medical College. Many of us associate Mr. Hogg's name with his active and efficient help on the business side of the last Conference of the China Medical Association in September, 1926.

Korea Medical Missionary Association

The 20th anniversary of this Association was held on January 18th to 20th in Seoul. Some 40 members were present at the meetings which were both enjoyable and helpful. Two of the original members, Dr. O.R. Avison and Dr. U.S. Hall were present.

At this meeting plans for the formation of a Tubercular Sanitarium were discussed, this being considered one of the greatest untouched needs of Korea to-day. There was also a short discussion on the future of medical missions in Korea and on problems of devolution.

Cassia Oil

Dr. Constand referring to Tomb's treatment of Cholera writes in a private letter to the Editor as follows: "With regard to essential oils in Cholera it will be worth while looking into the efficacy of Cassia oil (Chinese cinnamon). The Chinese set great store by it and I found myself using it more and more in various troubles. The powdered bark, from bark rich in oil, has excellent astringent properties as well as the stimulating and other properties of the oil it contains."

Dr. Adrian S. Taylor

Dr. Taylor, formerly in charge of the surgical department of the Peking Union Medical College, in a letter from the States tells us that he is now in partnership with Dr. Earle Drennen of Birmingham, Ala. His office address is 619 Bankers Bond Building and he will be delighted to see any China friends passing through that city.

Anti-Gas-Gangrene Serum

Anti-Gas-Gangrene Serum W. (B. Welchii) is a new surgical serum now prepared by Messrs Burroughs Wellcome and Co. It is issued in hermetically sealed phials of 10 c.c. and 25 c.c. though only the former can be obtained in Shanghai. This product is issued with a "life" of 21 years.

As with Tetanus Serum it is usually required in a hurry when required at all, and for this reason a small emergency stock is advisable.
NEW MEMBERS PROPOSED

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualifications</th>
<th>Mission</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black, Donald M.</td>
<td>M.D. University of U.C.C.</td>
<td>U.C.C. Lungchintsun, Kirin Prov.</td>
<td></td>
</tr>
<tr>
<td>Ho, Chang</td>
<td>M.B., B.S., Hongkong.</td>
<td>Private Yunnantu, Yunn.</td>
<td></td>
</tr>
<tr>
<td>Flowers, Wilfred Stephen</td>
<td>M.B., Ch. B., Leeds B. M. S.</td>
<td>Tsinan, Sung.</td>
<td></td>
</tr>
</tbody>
</table>

Proposers:
- Dr. G. Gushue-Taylor
- Dr. David Landsborough
- Dr. A. J. Watson
- Dr. H. P. Yew
- Dr. S. E. Bethell
- Dr. James L. Maxwell

NEW MEMBERS ELECTED

<table>
<thead>
<tr>
<th>Name</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. C. Chang</td>
<td>P. N. Pingtu, Sung.</td>
</tr>
<tr>
<td>Dr. R. G. Cochrane</td>
<td>Mission to Lepers Bankura, India.</td>
</tr>
<tr>
<td>Dr. H. E. Henke</td>
<td>P. N. Peking.</td>
</tr>
<tr>
<td>Dr. A. G. Taylor</td>
<td>C. I. M. Shanghai.</td>
</tr>
<tr>
<td>Dr. F. I. Tseung</td>
<td>Ind. Hongkong.</td>
</tr>
</tbody>
</table>

CORRIGENDUM

The Editor expresses his regret for an error that has crept into Dr. Skinner's article on the Kahn Precipitation Test for Syphilis in the Journal of December 1927.

Page 1005 line 10 should read as follows:

Into the first is discharged 0.05 cc., into the second 0.025 and into the third 0.0125 cc.