

fed. Those children who survived through the spring and summer would apparently have the trouble clear up to reappear next spring. As soon as this addition to the diet was begun in two of the institutions, probably two hundred cases with pellagra were fed as prescribed by the Public Health Service, and only one out of these two hundred cases had a recurrence the following spring; that is, these patients went one year without recurrence, with only one exception.

Dr. Goldberger concludes that pellagra can be prevented by appropriate diet without any change in environment, whether it be hygienic or sanitary. In other words, there was no change made in any of these cases except the addition to the diet. No attention was paid to the sanitary condition.

For the prevention and treatment of pellagra his recommendations are as follows: Increase in diet of fresh animal and leguminous foods, particularly during late winter and spring. He also advises the ownership of milk cows and an increase in the milk production for home consumption. He lays emphasis upon poultry and eggs received for home consumption. He speaks of the recent reduction in the diet of carbohydrates, that is, starchy foods. Also, he advises improved economic conditions by increasing wages and reducing unemployment, so that working people can buy better food. Another recommendation is that this class of foods should be made cheaper, so that this class of patients or this class of people can buy them.

PELLAGRA COMMISSION OF DALLAS
MEDICAL AND SURGICAL SOCIETY.
REPORT OF COMMITTEE STATE-
AT LARGE.*

By W. L. ALLISON, M.D., Chairman,
Fort Worth, Texas.

We, the undersigned committee, appointed

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by you from the State at large to study and investigate the disease, pellagra, beg leave to make the following report:

This report is compiled by the various members of the committee, and is gathered from their own personal experiences, observation and reading of all the available literature on the subject up to date.

Each member of the committee does not make this report as his own personal opinion, but we have tried to review in a brief way, the theories and opinions of others as well as ourselves.

There are many reasons to believe that pellagra came to this country direct from Italy and the adjacent countries through immigration.

There is no proof to show that the disease existed here to any extent prior to 1906.

The disease has spread rapidly through the entire South since 1907, until now each of the Southern States can number its cases by the tens of thousands.

The medical profession is better acquainted with the disease now, and therefore its presence is suspected and diagnosed earlier than formerly.

While it is true that in Europe the disease was largely among the poorer classes, this does not hold true in this country and especially is it not true in Texas.

We have no such poor in Texas as are found in Italy, and the disease is frequently found among the well-to-do classes of people here.

We have every reason to believe the disease is not directly contagious.

It is a significant fact, that with few exceptions, nurses and doctors handling these cases in the various institutions where pellagra is treated have not contracted the disease.

Notwithstanding the many theories as to the cause of the disease, none has as yet been proven.

Like many other diseases, a low diet and a run-down constitution seem to be predisposing factors. That the disease is purely

a dietary one is advocated by many, but this theory will not account for all the cases, nor will it explain its sudden incidence and rapid increase in this country.

Many have developed the disease with whose diet no fault could be found.

Corn as a dietary factor seems to be losing favor.

The occasional failure of mild cases to respond promptly to a well-balanced diet would seem to discredit any dietary theory.

The theory of Alessandrini and Scala that "Pellagra is nothing more than a mineral acidosis" due to an excess of silica or alumina in the water, has met with little favor and does not seem to be supported by facts. That the disease may be an infection seems to be gaining favor and has much to support it.

The disease has the power of becoming latent for long periods, which is true of some of our protozoan diseases, namely, malaria and syphilis.

The geographical distribution of the disease and its prevalence in the warmer countries, and its peculiar seasonal incidence is very similar to malaria and could be explained by its being an insect-borne protozoan disease.

There is much to support the theory of its being an insect-borne disease and the work of the Thompson-McFadden Pellagra Commission shows much to indicate that the stable fly (*Stomoxys Calcitrans*) may be the carrier.

Some members of this committee believe strongly that an infective agent of the disease may be associated with the soil, especially that polluted by human excreta.

In this connection it is a significant fact that certain investigations have shown the disease to be more prevalent in communities using the unscreened surface privy, and less prevalent in communities having a water carriage sewage system.

The Thompson-McFadden Pellagra Commission points to the significant fact that no

new cases developed in those mill villages having a water carriage sewerage system.

This commission also reports that close association with a previous case existed in 80 per cent of their cases.

There is nothing to show that the disease is hereditary.

Morphine habitues seem fairly susceptible.

So far as is now known, the incubation period of the disease seems to be from two to six weeks.

All animal inoculation experiments have been negative, with possibly one or two exceptions.

This might be the case if it is an insect-borne protozoan disease.

The greater prevalence of the disease among women between the ages of 20 and 45 make it appear that the causative agent is to be found about the home in the day time.

This peculiar incidence of the disease in women can hardly be accounted for by any dietary theory.

The symptoms of the disease are all of the nature of an intoxication, more or less chronic in its course.

The mucous membrane and skin symptoms do not constitute the disease *per se*, but are trophic in nature and depend on an intoxication of the cord.

The mucous membrane symptoms are frequently early in their appearance, while the skin symptoms are more often a late manifestation.

Being trophic in nature the skin symptoms are not symmetrical if the nerve supply of one side is interfered with as in some hemiplegias and in injury to the nerve supply of one limb.

The skin lesions are more often seen on the feet in children.

There is an absence or diminution of the hydrochloric acid content in most cases, particularly if there is a looseness of the bowels.

The most frequent early symptoms are a

history of stomach trouble and loss of weight.

Insomnia and nervousness occur early in the majority of the cases.

The burning sensation complained of in most cases is often very distressing and is probably peculiar to this disease, and therefore worth much as a diagnostic symptom.

There are probably two kinds of diarrhoea—one due to the absence of hydrochloric acid, and one due to the lesions throughout the intestinal tract, like that found in the mouth.

Mental symptoms are present in about 40 per cent of the cases, and consist essentially of delirium and do not belong to the insanities.

Pellagra is not a feverless disease, as once thought, but usually presents a change in temperature, similar to that found in incipient tuberculosis.

The diagnosis need not depend on the presence or history of a symmetrical skin lesion. In the majority of cases the diagnosis should be made before the skin lesions develop. A marked loss of weight with a history of stomach trouble and nervousness and insomnia, should arouse any one's suspicions.

The red, inflamed mouth with any of the other symptoms is probably enough to make a positive diagnosis. An alternating constipation and diarrhoea without obvious reason should be regarded with suspicion.

Mental symptoms of the nature of delirium and unaccompanied with fever and other evidences of well known infections should be regarded as probably pellagrous. The earlier the diagnosis is made, and any one's treatment instituted, the better the prognosis. An accurate prognosis is impossible.

When the disease first appeared in this country, 67 per cent of the cases died—to-day probably at least 80 per cent get permanently well. The prognosis for complete recovery is more favorable in children and

diminishes with age, being very unfavorable in old age, though even the old get well. Marked cord symptoms are an unfavorable prognostic sign, especially in cases with much tremor.

Marked mental symptoms are not necessarily an unfavorable sign; the cases presenting mental elevation are more favorable than cases presenting mental depression. A continuous high temperature is an unfavorable indication. A moderate pulse rate is a favorable sign, though a pulse of 120 to 140 does not always mean death.

There is probably no such thing as chronic mental or chronic nervous disease following when the patient has recovered physically. A pellagra patient is a bad surgical risk, though many can be operated on with safety after the acute symptoms have disappeared and the patient is on the mend.

Morphine habitues who have pellagra usually develop more acute symptoms when the drug is withdrawn. In view of the rapid increase of pellagra, more attention should be paid to the prophylactic treatment. Everything should be done to improve the hygienic and sanitary conditions about the home. A well-balanced and nourishing diet will do much to increase the individual resistance and prevent the disease, even if it be of infectious origin. A sanitary water carriage sewage system is certainly a step in the right direction. In view of the possibility of its being an insect borne disease, the houses should be well screened and each patient protected against all biting insects. This should be especially done, as a large per cent of the cases show close association with a previous case.

Active treatment of a case of pellagra should be begun by placing the patient in bed for at least a few weeks, depending on the severity and progress of the case—this of itself lessens the force of most diseases and conserves body energy. The patient should have a well-balanced and nourishing diet that is quickly and easily digested. Certain advertised specific and guaranteed

cures should be condemned—too often they foster a false hope and postpone a more rational line of treatment till there is but little chance of a recovery. (We have no specific remedy—therefore we have many so-called remedies and near specifics.

Many men report excellent results from the use of this or that remedy which does not yield such good results in the hands of another. There is much in the personal equation of the physician using his own remedy which no doubt often accounts for another's failure with the same remedy.

Alessandrini and Scala would have us use 1 c.c. daily intramuscular doses of a 10 per cent solution of sodium citrate, which they report gives good results. No doubt many cases get well without any treatment, which accounts for so many remedies and their apparent success.

Hydrochloric acid should always be supplied where it is diminished or absent. Of the many remedies, thymol, quinine hydrobromide, picric acid and the arsenical preparations, especially sodium cacodylate, are apparently the most popular.

In view of the fact that the symptoms are largely toxicemic in nature—rest in bed and the many measures to rid the patient of his toxins, probably bring about many recoveries, regardless of the remedy used.

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PELLAGRA IN TEXAS.*

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As there are a number of distinguished

speakers who are to take part in this symposium, I shall consume only such time as the importance of my remarks may seem to justify.

Like the sister States of the South, Texas faces a new health problem, and while a conservative alarm has been sounded throughout the State by a few, the State government has done very little to check the ravages of this new enemy. It was in 1907, eight years ago, that the first report of a death from pellagra was made in Texas by Dr. Merrill, of Colorado City. Eight years ago pellagra was purely of academic interest to us, but last year it killed at least five hundred of our citizens, invalidizing many thousand more.

I have upon this first chart (referring to chart) placed the number of deaths according to years, beginning with 1910 and ending with 1914. Each dot gives the number by months. When we consider that it has been only eight years since the first death was reported, you can appreciate the terrible ravages of the disease in the last eight years. (A glance at this chart shows the summer increment, the disease increasing every mid-summer, and while this is quite complete from the standpoint of mortality statistics, it represents fairly well the morbidity of the disease also.) In the last two or three years the profession has been very well educated along the lines of pellagra, and this increase, this big jump, represents an increase in the disease.

Upon this county map I have a large number of dots, each dot representing a death from pellagra, which is reported to the State Board of Health at the first of the year 1914.

Texas has within her confines a great many varieties of soil, climate and altitude, and it is interesting to compare the disease in different parts of the State. However, I shall not consume your time in doing that. You can do it for yourselves as well as I can.

There are some points I might say a word

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