CURRENT LITERATURE

It is intended that the current literature of leprosy shall be dealt with fully in this department. It is a function of the Contributing Editors to provide abstracts of all articles published in their territories, but when necessary such material from other sources is used when procurable.

ALBERTO CASTRO, CARLOS. Perforantes plantares. (Perforating ulcers of the sole.) Med. y. Cirugia. **5** (1940) 82-94.

Basing his views on the theoretical vasodilating action of acetyl-choline, the cicatrizing action of insulin, and the effect of the latter in stimulating and fixing albuminoid substances in the human body and its other actions, the author has used acetyl-cholin-insulin in the treatment of perforating ulcers of the foot in leprosy patients.

His method is to give intramuscularly 1 cc. of acetyl-choline (equal to 10 cgm. of active substance) and on the following day 0.5 cc. insulin subcutaneously (equal to 10 units). He gives 6-8 injections of each, repeated after an interval of 10 days, then after each of successive rest periods of 15, 20, 25, and 30 days, then increasing the rest-period by 10 days till cure is complete (so, for example, after the seventh series of injections there would be 40 days' rest). In early cases of perforating ulcer two or three series usually suffice. In some cases, the site is scraped and cauterized with 15-20 per cent silver nitrate.

He has observed, even after the first course, that the tissues are recovering vitality; the natural color returns, the cyanosis disappears, and the edema is reduced together with pain, and the general state improves. Notes of four cases are given.—[Extract from *Trop. Dis. Bull.* **39** (1942) 9.]

BLOSS, J. F. E. Lí Rangu Leper Settlement. Report of Sudan Med. Service for Year 1940. Pp. 16-21.

The estimated number of leprosy cases in the Sudan is about 8,000; the known cases number 5,888. Of the latter, 3,637 are in the humid southern Equatoria province and 1,992 more are in the Central Kordofan area, leaving only 259 in the dry northern area. The largest number are in the Lí Rangu district where 956 remain in the settlement and 1,458 are out-patients in the Yambio sub-district; the latter obtain treatment at dispensaries. The leprosy incidence here is at the high rate of 4 per cent. From Lí Rangu, 299 patients were discharged in 1940 and a further 120 were to be set free in the next year; most of the remaining cases will be those which are bacterially positive. Pure *Hydnocarpus wightiana* oil is used for injection treatment. Complications due to bilharzia and ankylostomiasis have been greatly reduced by treatment.—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

BURNET, ET. Essais d'inoculation des bacilles lépreux, B. de Stéfansky, B. de Hansen, sur le poumon par instillation dans les narines. (Attempts to inoculate leprosy bacilli by nasal instillation.) Arch. Inst. Pasteur de Tunis. **29** (1940) 174-178.

In attempts to find a method of experimental infection with lepra bacilli the author has tried the nasal instillation of mice and rats under anaesthesia. Stéfansky's bacillus should first be used. The results showed that mice were much more receptive than rats. In the animals in which lesions were produced the acid-fast bacilli were found in the tracheo-bronchial glands and also to some extent in endothelial cells in the lungs, but no nodules were present. In very few animals

were the bacilli found in the spleen or liver, so there was no tendency to generalization. The author therefore concludes that inoculation by the respiratory route is not the method of choice for such work.—[Extract from *Trop. Dis. Bull.* **39** (1942) 9.]

BURNET, ET. Essais d'inoculation de tissues de lèpre humaine aux rongeurs. Quelle est la réceptivité du hamster? Le danger d'intrusion de la tuberculose. (Inoculation of leprous material into rodents.) Arch. Inst. Pasteur de Tunis. **29** (1940) 155-169.

The author gives a valuable résumé of the evidence on this question. He refers to his own failure to infect more than one of 14 hamsters inoculated with human leprous material and states that there is no clear evidence that hamsters are any more susceptible to such inoculations than other rodents. He stresses the difficulty of excluding tuberculous infections, since some types of tubercle bacilli may fail to infect guinea pigs. It is also impossible to determine whether lepra bacilli found in inoculated tissues are living or dead, and he points out that only the development of typical mass infection of lepra cells or globi can be taken to prove infection with living bacilli. The hamster is very susceptible to tuberculous infection. He concludes that we still lack any experimental animal that can at all constantly be infected with human leprosy.—[Extract from *Trop. Dis. Bull.* **39** (1942) 9.]

DUBOIS A. and GAVRILOF, W. Essais d'inoculation de la lèpre humaine au hamster non splénectomisé. (Inoculation of human leprosy into hamsters.) Arch. Inst. Pasteur de Tunis. **29** (1940) 170-173.

The author's report on the inoculation of 12 hamsters with leprous nodules sent by air from the Congo and used after nine days, and also four inoculated with fresh leprous material from a local case. The results in all were negative as regards human leprosy, but one animal showed infection with the Stéfansky rat leprosy bacillus, the origin of which was not traced. They conclude that although their results do not invalidate occasional successes by previous workers, they do confirm the work of such observers as Burnet in showing that experimental infection with human leprosy of hamsters which have not been splenectomized is far from being commonly successful.—[Abstract from *Trop. Dis. Bull.* **39** (1942) 9.]

GOMES, J. M. Lepra murina. Pesquizas com os pigmentos carotenoides. (Murine leprosy. Research with carotene.) Brasil-Medico. **54** (1940) 140-143. English summary.

For this investigation the author gave to 10 rats, by injection into the right flank, 0.5 cc. of a 0.2 per cent colloidal emulsion of carotene, together with 0.5 cc. of an emulsion of Stéfansky's bacillus. Five of them were given 0.5 cc. of the carotene suspension weekly till 2.5 cc. had been given. Five were given the initial dose of carotene and bacillus, but no after-doses of carotene. Five others were injected with the organism alone, as controls. One of each group was killed and examined on the 30th, 34th, 60th, 74th, and 95th days. In the second and third groups the disease was found to have progressed naturally, the lesions being rather more active in the third, the control group. In the first, the animals showed fewer bacilli and in the last one killed on the 95th day, the organisms could be seen only in the liver and spleen, and here these were mostly fragmented. The author believes that the carotene "stimulates the evolution of the bacilli," while it also stimulates the host's tissues to destroy the organisms in the early stage, the homogeneous acid-fast stage.—[Extract from *Trop. Dis. Bull.* **39** (1942) 8.]

DE SOUZA-ARAUJO, H. C. A lepra infantil na Colombia. Séde e typos das lesões iniciaes. (Leprosy in children in Colombia; Site and type of initial lesions.) Brasil-Medico. **54** (1940) 145-151. With 4 figs. and 4 graphs. (15 ref.)

The author gives short details for 20 of 25 cases mentioned. The ages of the 20 range from 3 years to 13½ (nine only are under 8 years of age). All but one of the 25 started with achromic maculae—indicative, it is said, of a certain degree of immunity—and one only presented an initial leproma. Line drawings show the sites of these initial maculae, most of which are on the trunk and lower limbs, for each of the 20 patients.

The author considers the question of congenital leprosy and mentions a child of 31 days with a circinate macula a centimetre in diameter, over the coccygeal region, which the mother asserted had been present at birth, and three nodules which appeared a fortnight or so later, one over the left deltoid, one on the inner surface of the left thigh and one on the right leg. The author intended to watch these for some days before taking a piece for biopsy, but the mother became suspicious and disappeared, taking the infant with her. [—Based on abstract from *Trop. Dis. Bull.* **39** (1942) 8.]

ALBARRACÍN, LEOPOLDO. La lepra frusta. Descripción. Su significado epidemiológico. Una historia clínica. (Abortive leprosy. Its epidemiological significance.) Bol. d. Inst. Nac. de Hig. Samper Martinez. Bogotá. **4** (1941) 21-31.

The author describes the case of a white woman of 27 years born in a leprosy district which in the past ten years has furnished a number of leprosy patients in whom the bacilli cannot be demonstrated. She presented on the outer and upper aspect of the left thigh a macule some 10 cm. in diameter, in which sensation to touch, heat, and pain was absent. It had first appeared 15 years before, when she was 11 years old, as a small spot attaining its present size in about a year. About the same time her nose used to bleed and there was a nasal discharge for about 8 months. This ceased and there was found to be a perforation of the nasal septum 4 mm. in diameter with smooth edge; there was no deformity. The diagnosis is made from lupus and syphilis. Six members of the family with whom she lived were leprosy patients.

Epidemiological study of the patients in this district indicate that the disease is undergoing a change, as though the subjects were acquiring a certain degree of immunity to the infection. Cases such as this, in which the disease seems to come to an end spontaneously after a short period, are increasing in number.—[Abstract from *Trop. Dis. Bull.* **39** (1942) 8.]

BÜNGELER, WALTER. Gibt es eine kongenitale Lepra? (Is there congenital leprosy?) Klin. Woch. **20** (1941) 1169-1171.

The author discusses this question in the light of his investigations in Brazil and the literature of the subject. Experience of the isolation from their birth of the children of leprosy parents throws light on the matter, for in India, Canon Guilford recorded that very few children brought up by their leprous parents escaped the disease, but after Canon Jackson in the Punjab commenced separating young children from their infected parents very few developed the disease; this indicated post-natal infection from their parents as the usual mode of contamination. The theoretical possibility of congenital infection is based on lepra bacilli being occasionally found in the blood of patients, especially during febrile reactions. There is also abundant pathological evidence that lepra bacilli may be present in the placenta, and they have also been demonstrated in semen and in the genito-urinary organs of infected males. Whether they can pass through the placenta into the blood vessels of the child to produce intra-uterine infection, how-

ever, is very difficult to decide. In most of the cases reported as congenital infections the child was not separated from the mother soon enough to exclude the possibility of post-natal infection.

The author has been able to observe 300 infants who were separated at a very early age, and kept under observation up to 13 years; in none of them did leprosy symptoms appear. Moreover, he has made histological examinations of the organs of 60 infants of leprotic mothers, but was unable to demonstrate lepra bacilli in their bodies. He therefore concludes that congenital infections are so extremely rare as to be of no practical importance. Very early separation of infants from leprous parents is therefore an effective preventive measure.—[Extract from *Trop. Dis. Bull.* **39** (1942) 9.]

BURNET, ET. and CABASSO, V. Action de différentes huiles sur le bacille de Stefansky. (Action of oils on the bacillus of Stéfansky). Arch. Inst. Pasteur de Tunis. **30** (1941) 203-226.

This paper deals with the action of oils on the structure and vitality of the rat leprosy bacillus. The authors use the terms reduced or residual for the granulation and segmentation of acid-fast bacilli, which may be observed to some extent in the living tissues, and more extensively in bacilli preserved outside the body. Stéfansky's bacillus of rat leprosy retains its vitality in saline up to about one month and its acid-fast rod-shaped form for months or even a year. If, however, it is suspended in paraffin oil, agglutination is seen in a few days and the organisms become granular and thin. Similar changes occur when it is suspended in oil of turpentine from pine trees and also in chaulmoogra oil *in vitro*, though more slowly. One or two black granules may also appear in them, and then tend to break up. Inoculation into rats shows that the organism has lost its vitality and power to infect the animals. The authors report the experimental inoculation of guinea pigs and of rats with both large and small doses of such "reduced" Stéfansky's bacillus subcutaneously, intraperitoneally, and into the testis. The vitality of the bacilli is lost after 3 days in paraffin, 4-7 days in chaulmoogra, but they are living after 23 days in olive oil. When the bacilli, impregnated with paraffin or chaulmoogra oil, are injected in small doses the development of leprous lesions is prohibited, but months later acid-fast rod-shaped bacilli are found at the site of injection. After large doses, such as 5 milligrammes of the oil emulsion, the bacilli may be found in internal organs as well as locally, and the lesions resemble to some extent those produced by mixtures of tubercle bacilli with oils.

Attempts at treatment of infected mice by subcutaneous injections of living Stéfansky's bacillus, the instillation into the nose or inhalations of the vapour of pine oils, did not modify the course of the disease. Solutions of the bacillus in the oils, freed as far as possible from remaining bacilli by centrifuging, were injected to ascertain the effects of the injection of the soluble portions, but no lesions were produced. The experiments on the same lines with guinea pigs showed that, in place of the very slight effects in rats, in the case of guinea pigs Stéfansky's bacillus in oils produces much more marked effects similar to those with other acid-fast bacilli, such as tubercle and paratubercle organisms. The authors attribute this to the action of chemical substances common to these acid-fast organisms; the lesions, therefore, cannot be regarded as strictly specific.—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

CHATTERJEE, K. R. A conservative method of removing terminal phalanges in leprosy patients. Leprosy in India. **13** (1941) 125-126. With 4 figs. (2 on 1 plate).

The author advocates a conservative operation in cases of necrosis of the terminal phalanges with a view to preserving as much as possible of the soft

tissues and also the nails. For this purpose he makes a horse-shoe incision along the sides of the digit and over the end of the last phalanx, care being taken to preserve the nail bed which is included in the dorsal flap, with just enough soft tissue to maintain its nutrition; the ventral flap is formed by the pulp of the finger. After the necrosed bone has been removed the wound is sutured and a terminal drain inserted. Secondary infection rarely causes much trouble and the results are good.—[Abstract from *Trop. Dis. Bull.* **39** (1942) 8.]

GÓMEZ PLATA, CARLOS. Ideas generales sobre la organización de la campaña antileprosa en el pais. (The leprosy campaign in Colombia.) Rev. Med. y Cirugia. **8** (1941) 11-14, 17-19.

A general account of the foci of leprosy in the country and the numbers in the two lazarettes, Agua de Dios and Caño de Loro. At the former of these there are eight residents, five males and three females; at the latter 145, 106 males and 39 females. The municipalities in which leprosy is found and the prevalence per thousand inhabitants are said to be as follows: Campo de la Cruz, 3.69; Manatí, 2.83; Sabanalarga, 1.22; Santo Tomás, 1.2; Repelón, 1.1; Barranquilla, 0.3.—[Abstract from *Trop. Dis. Bull.* **39** (1942) 8.]

LEPROSY IN INDIA. 14 (1942) 41-72. Report of the leprosy survey sub-committee of the Indian Research Fund Association, September, 1941.

Under the chairmanship of Dr. J. Lowe this committee dealt with both the principles and practical details of leprosy surveys of three types in India. 1) Surveys of large areas to ascertain the approximate prevalence, distribution, and epidemiological features where little is known about the disease. Selected portions of the district or province are carefully studied as samples of the whole, including parts believed to have high and low prevalence. The examination of contacts of known cases and of all village children reveals unreported cases. Schedules are given for entry of the results obtained on uniform lines. 2) Surveys of smaller areas with a view to the detection and recording of as many as possible of the cases where the disease is already known to be prevalent, with full examination of the population of a union or group of villages for five miles around an anti-leprosy center. 3) Specially detailed studies of the epidemiology of leprosy, with examination of every individual, village by village, of small populations of three to ten thousand people carried out by experienced workers. Detailed records with all the cases marked on village maps are prepared to allow for re-surveys to ascertain the changes taking place within a given time. The types, age incidence, types distribution in relation to age, evidence of increase or decrease are all noted so that the relative importance of leprosy as a serious public health problem can be ascertained. Where the disease is prevalent, anti-leprosy work includes the provision for isolation of infective cases in homes, villages, colonies, or institutions, and provision for diagnosis and treatment at existing hospitals, dispensaries, and in special leprosy clinics. Public opinion must be created in the village by propaganda so the isolation of infective cases will be established and maintained. Re-surveys are of great value in estimating the progress being made in any area.—[Based on extract from *Trop. Dis. Bull.* **39** (1942) 12.]

LOWE, JOHN, DHARMENDRA, and SEN, N. R. Epidemiological and clinical studies of leprosy in the Bankura district of Bengal. Leprosy in India. **13** (1941) 127-134.

A report on a study of the epidemiology of leprosy in a typical rural area in Western Bengal, which was commenced in 1936, was published in *Leprosy in India* in 1938. The inquiry has been continued with the following results.

A treatment center was irregularly attended by about half the patients. Because of difficult local conditions, few of the infectious cases were isolated.

As the main object was an epidemiological inquiry, no real attempt was made to control leprosy in the area and the work done can have had little influence on the leprosy position. A comparison with the situation four years ago may therefore be of value.

The total number of cases has remained unchanged. The proportion of lepromatous cases has declined from 22.6 to 21.1 per cent, not a significant change. The proportion of lepromatous cases in children under 14 years of age has increased from 6 to 12 per cent. During the four years up to 1941, 59 of the original 424 patients had died; 23 of these were lepromatous. The death rate was 25 per cent in lepromatous cases against 11 per cent in neural cases. Of 56 new cases 12 were lepromatous and 44 neural. Twenty-three neural cases were in children under 10 years of age, while practically all the new lepromatous cases were between the ages of 5 and 24. Of the 44 new neural cases 11 had shown suspicious lesions in 1937. Definite evidence of contact with an infectious case was obtained in 45, or 80 per cent. Of the 56 new cases, in 28 there was an infectious person living in the house, and in 17 more, there was a definite history of extra-familial contact with an infectious case. Forty-one of the 56 new cases were found in families in which one or more had already been recorded.

A striking fact is that of 328 neural cases found in 1937 only two had become lepromatous by 1941; in addition one neural case, discovered later, had become lepromatous, all three being children living in contact with infectious persons. No adult neural case had changed its type. The majority of the adult neural cases were of the tuberculoid type. Many of the living lepromatous cases had become worse. The evidence indicates that 61 per cent of the new cases originated early in life, but it does not point to leprosy acquired in early life as being more severe than that commencing at a later age. These observations afford interesting information on the natural progress of leprosy in a rural area under close observation during four years.—[Based on abstract in *Trop. Dis. Bull.* **39** (1942) 8.]

PESCE, HUGO. La cutirreacción histaminica de Pierini en los leprosos del Lazareto de Lima y los de Apurímac. (The histamine skin test in leprosy patients.) Guatemala Méd. **6** (1941) 7-9.

This test, known in the Argentine as the Pierini test, is performed by placing on the skin a drop of 1:1000 solution of phosphate of histamine in double distilled water, and puncturing lightly through it with an injection needle, without causing effusion of blood. The author tried it on five healthy subjects and 25 leprosy patients from the Lima Lazaretto and the Apurímac Dispensary. The reaction comprises three stages, or degrees: 1) Local congestion of 1-3 mm. diameter appearing in 10-60 minutes; 2) an erythematous areola of 20-30 mm., appearing in 1½-2½ hours; and 3) an edematous papule, 1-7 mm. in diameter, in 2-5 hours. Even so mild a reaction as stage 1) is interpreted as positive.

The results in this small number of cases and controls were: Negative in all the controls and in the healthy areas of the skin of leprosy patients; positive in all anaesthetic or maculo-anaesthetic areas of leprosy patients (one case in which there was doubt as to the nature of the local lesion gave a positive result). The procedure is easy, as is the interpretation in most cases, and is regarded as useful in differentiating leprous maculae or hypochromic areas from those due to vitiligo or pinta and the like, and is serviceable, therefore, in contacts presenting dubious lesions or suspicious spots.—[Abstract from *Trop. Dis. Bull.* **39** (1942) 9.]

RACINE, W. A propos de la lèpre. (Leprosy.) Schweiz. Med. Woch. **71** (1941) 936-938. With 2 figs.

An account of a case and a general description of the disease.—[Extract from Trop. Dis. Bull. **39** (1942) 11.]

SLOAN, T. B. M. and EBENEZER, ROY. Skin grafts in leprosy. Leprosy in India. **13** (1941) 122-124. With 1 plate.

This is the record of a case in which, after an operation for the removal of necrosed bone from the great toe, sloughing of the skin over the ankle occurred with exposure of tendons. When healthy granulations had appeared, the wound was successfully grafted with small portions of skin removed from the left thigh. The case is illustrated by a photograph taken after recovery.—[Abstract from *Trop. Dis. Bull.* **39** (1942) 8.]

DE SOUZA-ARAUJO, H. C. ¿Poderá o carrapato transmitir a lepra? (Can leprosy be transmitted by ticks?) Mem. do Inst. Oswaldo Cruz. **36** (1941) 577-585. With two plates, one in color.

The author examining various lots of ticks collected in the leprosarium Colonia Santa Isabel, of Minas Geraes, found that those taken from leprosy patients were positive for Hansen bacillus in more than 60 per cent of the smears. Those taken from normal persons, from horses, dogs and plants, at the same place, were negative for acid-fast bacilli.

The author arrived at the following conclusions: 1. Rudolph (1918) stated that for 13 days following the last feeding on leprosy patients the nymphs of *Amblyomma cajennense* had in their intestines leprosy bacilli, which he considered as alive. The author of the present paper found that such bacilli are in degeneration after a week of the sucking, perhaps because they are being digested. 2. The nymphs examined within the first 48 hours after sucking on active leprosy patients, showed in more than 60 per cent of the smears, bacilli, well stained by the Ziehl-Neelsen method, in small bundles or in small spherical or ovoid globi, with the characteristics of Hansen bacillus. By culture in Loewenstein medium of such material and by inoculation of it in white rats the author believes that it is possible to prove the viability and virulence of the organisms. 3. If the *Amblyomma* ticks change their hosts during the three suckings of blood, necessary to their life cycle, they may be occasional carriers of leprosy bacilli. 4. Considering that ticks are widespread in Brazil and that leprosy is both an endemic and epidemic scourge in rural zones of many states, it is urgent to determine the real role of such parasites in the transmission of human leprosy.

Addendum: After 62 days incubation at 37° C. the author obtained a pure culture of an acid-fast bacillus from the sediment of ticks taken from leprosy patients. The medium used was that of Loewenstein.—AUTHOR'S SUMMARY.

DE SOUZA-ARAUJO, H. C. Infecção de ratos brancos com suco ganglionar de leproso, seguida do isolamento dum bacilo ácido-álcool resistente de orgãos do murideo, em meio de Loewenstein. Nota prévia. (Infection of white rats with gland-juice from a leprosy patient; isolation and growth of an acid-fast organism.) Mem. Inst. Oswaldo Cruz. **36** (1941) 379-385. With 15 figs. on 4 plates.

Though this is a short paper, in fact a preliminary note, its importance calls for a full account. In view of repeated fruitless attempts to cultivate Hansen's bacillus from emulsions of lepromata, skin lesions, nasal mucus, and blood, the author started a series of investigations on the sputum and gland-juice of leprosy patients. From 42 samples of sputum he obtained 11 cultures of Mycobacteria, 10 of which had all the characteristics of the human, eugonic type of *M. tuberculosis*. Of 15 samples of gland-juice seeded on media appropriate for growing acid-fast bacilli, one gave a pure culture which also had the characteristics of *M. tuberculosis*. He then proceeded on the following lines, suggested by the work of Marchoux.

A man of 26 years, showing typical symptoms of leprosy—thickening of the ears, enlargement of the cervical and inguinal glands, swollen nose, macules on the forehead, cheeks, chest, and abdomen, lepromata on buttocks, thigh, and elsewhere—came under the author's observation in August, 1938. The nasal mucus, fluid from skin puncture, juice from a cervical gland, all showed Hansen's organism; the Witebsky reaction was 6 plus, the Wassermann reaction negative. During 1939 the patient suffered from repeated leprotic reactions with exacerbation of the cutaneous lesions and suppuration of the groin glands, the pus containing abundant bacilli. In June 1939, some gland juice, rich in bacilli, was emulsified in saline and injected (as suggested by Marchoux for Stéfansky's organism) subcutaneously in the axilla of a white rat. Five months later the animal was killed; the axillary and inguinal glands were much enlarged and contained many bacilli like those of Hansen. Smears of the viscera did not show them; probably it was too early for visceral involvement. In January, 1940, pus from the patient's groin gland was inoculated into three white rats subcutaneously in the axilla, and the following month gland-juice into a fourth rat. (Frei's reaction was tried because of the inguinal adenitis but proved negative, thus ruling out lymphogranuloma inguinale.) The sputum contained no tubercle bacilli and guinea pig inoculation was also negative.

Fifteen months later one of the inoculated rats died, showing areas of alopecia on the back, and lesions, containing bacilli, in the spleen. Two months later another died and autopsy revealed glands and viscera rich in acid-fast bacilli. These organs were sent to Dr. Margarinos Torres, together with a portion of the liver on ice, for seeding. This was triturated and sown on Löwenstein's medium. Dr. Torres reported that the tissues showed generalized infection with lepromatous lesions. A detailed description is given and illustrated by photomicrographs. A fortnight after the sowing, the medium showed growth of acid-fast organisms, in bundles and clumps. Four rats and a monkey were inoculated with the culture on the 2nd and 11th of August, 1941, respectively (the results of these will doubtless be reported in due course).

Eighteen months after being inoculated, the third rat was killed; it showed alopecia on the back, the root of the tail, and the right hip; the glands were enlarged and contained what seemed to be purely Hansen's bacilli, but smears of the viscera did not show any.

The author concludes:

1) The gland juice of a leprous patient is infective for white rats.

2) After an incubation period of 15-18 months, rats inoculated with this gland-juice show typical signs of leprosy in their glands and viscera.

3) Seeding, on Löwenstein's medium, of emulsions of the organs of infected rats gives rise to the growth of a pure culture of an acid-fast bacillus which is not *Myco. tuberculosis.*

4) This work ought to be repeated on a larger scale, as it points out a way of clearing up obscurities in the aetiology of human leprosy.—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

ARGÜELLO PITT, LUIS. A propósito de la inauguración de un nuevo Dispensario Dermatológico en Córdoba. (The inauguration of a new dermatological dispensary in Córdoba.) Rev. Arg. de Dermatosif. **26** (1942) 941-946.

The author describes the work of the dispensary of the Patronato de Leprosos in the Province of Córdoba, of which he is the chief. They have noted 92 cases

in 3 years, of which 23 per cent are lepromatous, 20 per cent uncharacteristic, and 57 per cent tuberculoid. Among the contacts 9 new cases were found.—G. Basombrío.

Castañe Decoud, Aníbal. Infiltración neural para-arterial en la lepra tuberculoide. (Neural para-arterial infiltration in tuberculoid leprosy.) Rev. Arg. de Dermatosif. **26** (1942) 913-924.

The author studies the early histological changes seen in the nervous fibres in cases of tuberculoid leprosy. He demonstrates that the infiltration adopts a very characteristic pattern, which at first spreads around the nervous fibres, without participation, and displaces the vascular elements to the periphery of the infiltrated center. This histopathological picture is called "neural para-arterial infiltration." Seventy-four per cent of the 50 cases of tuberculoid leprosy studied showed this change. The comparative study with other tuberculoid granulomata demonstrates that the pattern noted is found only in tuberculoid leprosy. Based on these investigations the author arrives at the conclusion that this neural para-arterial infiltration is an important element for diagnosis which frequently makes it possible to distinguish the tuberculoid granuloma of leprosy from those of other etiology.—

From Author's summary.

Chabaud, A. Altération du bacille de Hansen par les fixateurs. Rôle protecteur de l'acide phénique. (Alteration of Hansen's bacillus by fixation agents.) Ann. Inst. Pasteur. **68** (1942) 106-113.

The author in this note points out that long fixation of human leprosy material in Bouin alcohol alters the bacilli so that after about three weeks or more the lepra bacilli are no longer stained by the Ziehl method. This change seems to depend on the action of formol, salts of the heavy metals, and especially on the acidity of the fixation agent. Carbolic acid retards this alteration of the bacilli so that they can be stained up to 136 days in a carbolic fixation agent.

(Bouin solution contains 1 gm. picric acid in 150 cc. of 80 per cent alcohol, 60 cc. commercial formalin, 15 cc. glacial acetic acid. The carbolic fixation fluid contains 60 cc. of 80 per cent alcohol, 15 gm. phenol, 5 cc. commercial formalin, 2 cc. acetic acid.)—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

Davey, T. F. Leprosy control in the Owerri Province, Southern Nigeria. Leprosy Review. **13** (1942) 31-46. With 2 maps.

This report records remarkable progress in the control of leprosy in a badly infected portion of Southern Nigeria. At the end of 1941, 1,072 cases, many requiring hospital treatment, were isolated in the central Uzuakoli settlement; 2,000 more infective cases were voluntarily isolated in model leprosy villages constructed on sanitary lines by the patients, under the instruction of the staff of the settlement, on sites provided free by the local Chiefs, with land to cultivate for their own maintenance. These and the other cases of leprosy in the surrounding villages were being treated at 29 clinics (with four more about to be provided) in which 7,183 cases were cared for, mostly early amenable ones, which are six to ten times as numerous as the advanced, all of the patients living within five miles of the clinic they attend. In considerable areas complete control of all the leprosy cases has been attained, first by starting a clinic for treatment, and then, after the confidence of the villagers has been obtained, conducting a house-to-house survey, which leads to about three times as many cases being found and treated. Over 70 male nurses have been trained in the settlement by nursing sisters, together with a few Toc H workers and a number of educated native leprosy inspectors, who carry out the surveys and superintend the construction of the model villages, in which none but leprosy patients is allowed to reside.

Recorded infection rates vary, in different villages, from 1.3 to 15.2 per cent. By these very economical measures the only limit to the extension of the work is the provision of more workers and moderate funds, for at present only two medical men superintend the whole of the work in caring for some 10,000 leprosy cases on the books.—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

DHARMENDRA. The immunological skin tests in leprosy. Part I. The isolation of a protein antigen of *Mycobacterium leprae*. Indian J. Med. Res. **30** (1942) 1-7.

"1. The main features of the lepromin test (the Mitsuda reaction) are outlined. It is considered that the delay in the appearance of the classical nodular reaction, and possibly the non-specific nature of the reaction, may be caused by the nature of the material injected. The need for a refined antigen is stressed.

"2. A method for obtaining from excised nodules leprosy bacilli free from tissue is described. Bacilli have been found to be the active constituents of lepromin.

"3. The bacilli were ground for several hours in an agate mortar and were fractionated into a saline-soluble portion and an insoluble residue. From the soluble portion, protein and polysaccharide have been obtained; from the insoluble residue, various lipoid fractions have been separated.

"4. Tests with the different fractions of the bacilli have shown that, of all the fractions isolated, only the protein is definitely antigenic and that it produces only an early reaction.

"5. By extracting the ground bacilli with different solvents, three protein fractions—acid-soluble protein, nucleo-protein, and alcohol-soluble protein—have been isolated. All the three fractions give rise to early reactions in the neural cases of leprosy."—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

DHARMENDRA and LOWE, J. The immunological skin tests in leprosy. Part II. The isolated protein antigen in relation to the classical Mitsuda reaction and the early reactions to lepromin. Indian J. Med. Res. **30** (1942) 9-15. (11 refs.)

"1. The intradermal injections of preparations from leprous material are capable of causing reactions of three different clinical types: The classical Mitsuda reaction (nodular), the early erythematous reaction preceding the classical reaction, and the erythematous reaction followed by no late reaction.

"2. Since protein is the only definitely antigenic fraction of the *Myco. leprae*, and since all the different types of reaction can be explained on the basis of this one antigen, it is believed they are actually caused by it. If at the time of injection all the antigen is free to act at once, only an early reaction is produced. If only part of the antigen is free, both early and late reactions are produced, the early reaction by the free antigen and the late by the same antigen which is liberated slowly from breaking down of the injected bacilli. If none of the antigen is free, a late reaction only will be produced.

"3. Since late reaction is not produced either by any of the isolated fractions or by the final residue of the bacilli, the idea that the early and late reactions are caused by different antigens is disproved.

"Our work, however, shows the presence of more than one antigen of protein nature.

"4. When compared to the classical Mitsuda test, the test with the isolated antigen is found to be at least as sensitive, to give results of the same significance,

and to have great advantages, particularly rapid results and the absence of unpleasant nodules and ulcers. It is, therefore, suggested that, for performing skin tests in leprosy, the isolated antigen may be used in place of ordinary lepromin.

"5. By providing an explanation for the lateness of the reaction, the observations reported herein have brought the Mitsuda reaction more in line with the allergic skin tests. The lack of specificity and the negative results in cases of the 'lepromatous' type have still to be explained before the reaction can be admitted as one of specific allergy. Work with the isolated antigen will facilitate a study of these phenomena."—[Extract with *Trop. Dis. Bull.* **39** (1942) 12.]

DHARMENDRA and LOWE, J. The immunological skin tests in leprosy. Part III. The isolated protein antigen in relation to the antigens used by other workers. Indian J. Med. Res. **30** (1942) 17-22. (14 refs.)

In this short paper the authors discuss antigens used by other workers in the elucidation of the Mitsuda test. That of Nagai (1938) was made by keeping leprous nodules for long periods in 5 to 10 per cent lecithin or boiling for half an hour in the same solution to produce loss of acid-fastness and degeneration into granules. Intradermal injections produced similar reactions to those of ordinary lepromin. Kitano and Inoue (1941) broke down the lepra bacilli by physical means through the use of ultra-supersonic waves. Their lepromin produced stronger early but weaker late reactions than ordinary lepromin, very similar to those of the present authors. A few other workers have attempted to isolate the antigenic fraction from emulsions made by grinding up lepromatous tissue. The active non-lipoid fraction of Villela and his co-workers could not be a protein antigen and it is believed that their methods would neither break down the bacilli nor liberate the antigen. Henderson (1940) isolated proteins from leprous spleens rich in acid-fast bacilli by grinding dried spleen at -70° C. This produced only very slight early reactions of the "tuberculin" type. It thus resembles a weak antigen similar to that of the present workers. A proteose isolated from the brains of leprous patients by Berny and Mauze produced a different reaction from that of a bacillary antigen.—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

DÍEZ, LUIS F. Contribución al estudio del tratamiento quirúrgico de la neuritis leprosa del nervio cubital. (A contribution to the study of the surgical treatment of leprous neuritis in the ulnar nerve.) Anales de Cirugía, Rosario, Argentina. **8, 97-125.**

The author indicates that the susceptible part of the nerve for localizing the process is the epitrochleo-olecranon canal. The process being formed, the nerve suffers by compression. He recommends, as treatment, the preepitrochlean transposition of the nerve, because in this way the compression is avoided. He has obtained excellent results in the cases upon which he has operated.—G. Basombrío.

FERNANDEZ, JOSÉ M. M. and OLMOS CASTRO, N. La reacción leprosa provocada por la lepromina. (The early reaction induced by lepromin.) Rev. Arg. de Dermatosif. **26** (1942) 556-580.

Several antigens obtained from *M. leprae* have been injected into leprosy patients, contacts, and healthy people. The early reactions were studied and the results confirm previous work by Fernandez. The results of the early reaction to whole or "integral lepromin" coincided in the great majority of cases (94 per cent) with those of the late nodular reaction in leprosy patients and contacts. Both reactions were negative in the lepromatous forms of the disease, frequently positive in the neural, and more so in the tuberculoid variety. In healthy people both reactions frequently gave divergent results; the early reaction was usually

negative (98 per cent), while the Mitsuda reaction was frequently positive (38 per cent). These persons could be sensitized by intradermal injection of a sufficiently active "integral lepromin" antigen, and a large number of positive early reactions were then observed. A filtrate of "integral lepromin" produced the same early reaction as integral lepromin in patients, contacts, and healthy people. This antigen did not produce a late nodular reaction. The antigen prepared according to Dharmendra's technique (soluble proteins of *M. leprae*) gave similar results to those obtained with the filtrate. In cases of cutaneous tuberculosis (hyperergic to tuberculin) frequently a stronger positive early reaction was observed when other antigens (Frei, Dmelcos) gave a negative early reaction. These results of the early reaction are interpreted as the manifestation of an allergic state previously induced by the *M. leprae* and in some cases by the Koch bacillus.—FROM AUTHOR'S SUMMARY.

FERNANDEZ, JOSÉ M. M. A propósito de una nueva clasificación de las formas de lepra. (A new classification of leprosy forms.) Rev. Med. de Rosario. **32** (1942) 923.

The author describes the classification adopted for leprosy by the South American leprologists. The three forms are lepromatous, tuberculoid, and uncharacteristic. Each of these may be divided into any one of the following subtypes: cutaneous, neural, and neuro-cutaneous.—G. Basombrío.

HENDERSON, HOWARD J., SPAULDING, E. H., and GAULT, E. S. Demonstration of globi and leprosy bacilli by fluorescence microscopy. Proc. Soc. Exper. Biol. & Med. **50** (1942) 91-92. With 1 fig.

The authors present an illustration which shows that direct impression smears from the tissues of leprosy patients, stained with auramine O and examined by fluorescence microscopy, show globi and leprosy bacilli more clearly than when the Ziehl-Neelsen method is used. (For description of the technique of fluorescence microscopy, see *Bulletin of Hygiene*, 1941, Vol. 16, p. 144; 1942, Vol. 17, p. 207.)—[Extract from *Trop. Dis. Bull.* **39** (1942) 11.]

HENDERSON, HOWARD J. A method for separating intact leprosy bacilli from leprous tissue. Proc. Soc. Exper. Biol. & Med. **50** (1942) 92-94. With 1 fig.

The author has found that a buffer solution extract of finely ground leprous spleen does not give, in leprosy patients, any reaction comparable with that provoked by tuberculin in those infected by tubercle bacilli. This may be due to lack of sensitivity of the tissues in leprosy, or it may be that extraction of the leprosy bacilli was hindered by the splenic cells, and that the test fluid was therefore impotent.

It is known that, in emulsions, acid-fast bacilli pass readily from the water to the oil phase. The author therefore obtained leprosy spleen tissue, minced and dried by the cryochem process, ground this in water and homogenized it at 3,000-3,500 lb. pressure. In this material almost all the spleen cells were disrupted but the bacilli were intact. The homogenized material was shaken with an equal volume of olive oil for one hour, and the mixture was then centrifuged. Four layers separated out; the layer between the oil and water consisted chiefly of acid-fast bacilli, and was separated, washed with acetone and subjected to the cryochem process. This substance is to be used in further studies. Acid-fast bacilli were scanty in the other layers.—[Extract from *Trop. Dis. Bull.* **39** (1942) 11.]

LOWE, JOHN. Comments on the history of leprosy. Indian Medical Gazette. **77** (1942) 680-685.

The author attempts only to clear up some of the more common misconceptions of the history of leprosy. For ancient India, the Rig Veda and Athawa Veda and also the Laws of Manu have been said to describe leprosy, but many of these descriptions are open to question. The author believes the Susruth Somhita, probably written about 600 B.C., to be the most reliable ancient reference, and feels that one can at least infer from it that leprosy, even in mild forms, was recognized and prevalent in India at that time.

For China, there is uncertainty about the early descriptions, the first fairly definite account appearing in the seventh century A.D. Japanese descriptions came later.

The author believes that none of the descriptions in the Bible is of leprosy, at least as we know it today, and that the cases were more likely leucoderma. He also believes that "we have no definite proof that leprosy was common or even known in ancient Egypt."

There follows a discussion of leprosy in Medieval Europe, from which it is concluded that "the prevalence of leprosy in England, and in fact in Medieval Europe, was very considerable," although it is pointed out that it is unjustifiable to consider it, as has been done, a scourge of proportions almost as serious as the Black Death. He does argue, however, that the possibility of incorrect diagnoses has been exaggerated. This is stressed particularly in relation to confusion with syphilis, which did not appear commonly in Western Europe until much later than about the thirteenth century, the period when leprosy was at its height.

He concludes: "It seems unlikely that the incidence of leprosy in the Middle Ages in Europe was any higher than it is today in certain parts of Africa, Asia, and South America, and it was possibly much lower, although of course any accurate estimation is out of the question."—N. C. KEIFER.

McCOY, G. W. Observations on the epidemiology of leprosy. Pub. Health Rep. **57** (1942) 1935-1944.

Leprosy has been introduced into different areas of the United States, with very different consequences. In Louisiana, Florida, and Texas, the presence of imported cases has resulted in the establishment of foci in which the disease shows a strong tendency to perpetuate itself, while in the central northwestern states and in California the reverse prevails, and the disease has shown little tendency to become established. Elsewhere in the United States, leprosy transmission occurs so rarely that it is negligible from the public health point of view.

The data presented refer to experiences with leprosy up to the present time. But in an age in which great changes, both social and economic, are occurring, no one can predict what unexpected influence these may have on the occurrence of leprosy as well as other diseases.—AUTHOR'S SUMMARY.

MARCHOUX, E., CHORINE, V., CHABAUD, A., and TISSEUIL, J. Essais négatifs de la transmission de la lèpre humaine aú hamster de Syrie, *Cricetus auratus*. (Negative leprosy transmission trials on hamsters.) Ann. Inst. Pasteur. **68** (1942) 99-105.

This paper records the negative results of attempts, by different methods of inoculation, to infect hamsters with human leprosy material. The experiments were carried out with 40 animals that had had their spleens removed; these, with 25 in which the spleens were intact, were inoculated subcutaneously with

emulsions or small fragments of lepromas; five others with intact spleens were inoculated intraperitoneally. The authors point out that the long survival of lepra bacilli in large numbers at the site of injection, or in the internal organs in small numbers, furnishes no proof of infection, because Araujo in Brazil showed that this may occur after inoculation of killed lepra bacilli. They obtained no evidence of multiplication of the bacilli in any of the inoculated animals. The hope that infected hamsters might be used for chemotherapeutic tests must therefore be abandoned.—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

MUIR, E. Report of leprosy in British Guiana. Leprosy Review. **13** (1942) 22-31.

This report brings out well the success of the 15 years' devoted work of Dr. F. G. Rose. British Guiana was the first of our colonies to modify, at the suggestion of B.E.L.R.A., their compulsory segregation laws relating to all types and forms of leprosy, so as to permit early and uninfective cases to be treated at out-patient leprosy clinics. There are now nine clinics treating 500 cases out of a total of 1,000. The 500 more advanced and infective patients are cared for in the up-to-date leprosy colony at Mahaica, most of the inmates of which are now voluntary admissions for the sake of treatment. Yet in 1923, before the law was relaxed, only 267 cases were segregated at Mahaica, but by 1932, there was 747 cases in residence. The value of regular and persistent treatment is shown by the fact that among the patients who received 61-100 per cent of the prescribed course, 71.4 per cent became "arrested cases," against only 16.7 per cent of those who received 60 per cent or less of the course. Child cases are accommodated in a separate building, and healthy children of leprosy patients in the Lady Denham Home. During his 1941 visit, Muir records that he saw many formerly advanced lepromatous patients who had been free from infection and active symptoms for years; he concluded that, "There is good reason to believe that this decline in notifications (namely of the yearly admissions from 40-100 to only 39) is the result of actual decrease of leprosy in the colony."—[Extract from *Trop. Dis. Bull.* **39** (1942) 12.]

OLMOS CASTRO, N. and SCHEREIER, J. Lepra autóctona en Tucumán. (Indigenous leprosy in Tucumán.) A 16-page pamphlet. Tucumán, Argentina. July, 1942.

A study of the cases of leprosy in Tucumán, an Argentine province situated in the northwest of the republic. There were 21 patients; lepromatous 16, uncharacteristic 1, and tuberculoid 4; 14 male and 7 female. The majority of these cases were indigenous to Tucumán, the capital of the province.—G. BASOMBRÍO.

OLMOS CASTRO, N. and SCHEREIER, J. El problema de la lepra en Tucumán. (The problem of leprosy in Tucumán.) A 29-page pamphlet. Tucumán 1942.

Tucumán is the smallest of Argentine provinces (23,000 kms, 360,000 inhabitants). The number of leprosy patients has been very small. The authors, from the Hospital Avellaneda, are carrying on a campaign to discover all individuals suffering with leprosy. From 1922 to 1932 they observed 27 patients (2.7 per year). From 1932 to 1942 they discovered 74 patients (7.4 per year).—G. BASOMBRÍO.

PAROLA, JUAN. Evolución de la profilaxis antileprosa en la Rep. Argentina. (Evolution of antileprous prophylaxis in the Argentine republic.) Rev. Médica Quirúgica de Patología Femenina. **20** (1942) 451-457.

Brief description of the state of antileprous prophylaxis in Argentina in December, 1942.—G. BASOMBRÍO.

SCHUJMAN, SALOMON and VACCARO, AGUSTÍN. Las adenopatías leprosa. (The leprous adenopathies.) Rev. Arg. de Dermatosif. **26** (1942) 925-940.

A clinical, bacteriological, histological, and experimental study of 200 cases of lepromatous and tuberculoid leprosy. In leprous patients it is common to observe the same histological alterations in the lesions of the skin and of the glands. (Lepromatous structure in the form L and tuberculoid in N T.) The presence of hypertrophic lymphatic glands in some lepromatous cases with incipient lesions and in those which are in a frank regression, suggests that in certain cases the alterations of the lymphatic glands may be the first to appear and the last to disappear. This is an important fact not only from the point of view of diagnosis but for the epidemiology and prophylaxis of leprosy.—FROM AUTHOR'S SUMMARY.

DE SOUZA-ARAUJO, H. C. Cultura cromogênica dum bacilo ácido-álcool resistente isolado de pus de lesão fechada de lepra humana. (Chromogenic culture of an acid-fast organism isolated from pus from closed lesion of human leprosy.) Mem. do Inst. Oswaldo Cruz. **37** (1942) 29-34. With 2 plates.

On October 2, 1941, the author smeared nine tubes of Loewenstein media with material obtained (by galvanocautery opening) from closed pustules of a seven-year-old boy, an L2 case of leprosy. This material was rich in Hansen bacilli in its different forms, including globi. Part of the material obtained from pustules was also inoculated, on the same day, into white rats and guinea pigs.

On November 26th a new biopsy gave more rich material, which again was smeared onto Loewenstein fresh media.

On December 15th, three tubes of the first series of cultures and two of the second showed growth of a yellow, dry and rough culture, covering almost the total surface of the medium. Microscopic examination showed that it was a pure culture of an acid-fast organism. Passages into glycerinated potatoes produced good growth covering the surface with a clear yellow granulated culture, with the fluid (glycerinated water) remaining quite limpid. The growth in gylcerinated broth produced a yellow velum on the surface of the medium, without becoming turbid. The microorganism isolated twice from the same source of material was cocciform (as *Mycobacterium pulviforme* of Marchoux) in the original culture, becoming more bacilliform, always acid-fast, after passage into glycerinated media.

The author has sent his culture to foreign colleagues for study and will inoculate it soon into laboratory animals. March 4, 1942. Subcutaneous inoculation of this culture (15 days old) into white rats and guinea pigs proved its pathogenicity for both kinds of animals. Sixteen to 18 days later some of the rats and guinea pigs died, and both showed, by necropsy, caseous abcesses at the site of the inoculation, and in the lungs, liver, and peritoneum. Pus collected from such lesions was rich in acid-fast bacilli and sub-cultures produced cultures similar to the original.—FROM AUTHOR'S SUMMARY.

DE SOUZA-ARAUJO, H. C. Os bacilos de Hansen e de Stéfansky. Contribuição para a sua morfologia. (Hansen's and Stéfansky's bacilli. Contribution to their morphology.) Mem. do Inst. Oswaldo Cruz. **37** (1942) 11-18. With 7 plates, 2 in full color.

The author's contribution to the morphology of Hansen and Stéfansky bacilli is based upon various kinds of material from human and rat leprosy.

The paper is illustrated with plates, representing the most characteristic aspects of both *Mycobacteria,* from natural and experimental infections.

The author arrived at the following conclusions:

1. The morphological similitude of Hansen and Stéfansky bacilli confirms the assertion of Marchoux that they are brothers.

2. Experimental research carried out by the author showed that the pathogeny of both diseases is identical, and that more accurate studies are needed to explain their histopathological dissimilitudes.—FROM AUTHOR'S SUMMARY.

DE SOUZA-ARAUJO, H. C. ¿Poderá o carrapato transmitir a lepra? Isolamento e cultura dum bacilo ácido-álcool resistente de sedimento de *Amblyomma cajennense* capturado em leproso. (Can ticks transmit leprosy? Second note. Isolation of an acid-fast bacillus from sediment of *Amblyomma cajennense* infected on leprosy patients.) Mem. do Inst. Oswaldo Cruz. **37** (1942) 95-103. With 3 plates.

The author describes the positive results of examination of sediment of ticks, the cattle tick *Boophilus microplus* (Cannestrini 1888) received from Parana (Leprosario São Roque). After two of these ticks had been allowed to suck on active leprosy patients for nine days, and one for seven days, two of the three ticks were killed for examination and were very strongly positive for acid-fast bacilli. A series of tubes of Loewenstein media were smeared with the sediment of such ticks. The author also describes his own experiment, carried out in Rio de Janeiro, in which he attempted to infect normal ticks on leprosy patients. The experiment with *Boophilus microplus* was negative, but the experiment with *Amblyomma cajennense* (Fabricius, 1794) was twice positive. The experiment is still in progress and will be continued in other places of Brazil.

Finally, after giving the general characteristics of *Boophilus microplus,* the author describes the non-chromogenic culture of an acid-fast bacillus isolated by him from sediment of ticks (*Amblyomma cajennense*) taken from leprosy patients from Colonia Santa Isabel (Minas Geraes), which parasitism was spontaneous. The first isolation was obtained in Loewenstein medium after 62 days incubation at 37° C. The culture is pure and the bacillus is permanently acid-fast. The colonies are pearl-white in color, dry, elevated and rough, developing slowly and beginning as white pinhead points scattered upon the surface of the medium. The culture is not yet rich enough to be inoculated into laboratory animals.—FROM AUTHOR'S SUMMARY.

DE SOUZA-ARAUJO, H. C. Colonia de Itanhenga. Preventorio Alzira Bley. Granja Eunice Weaver. Rio de Janeiro (1942).

This booklet with 39 pages and 37 plates was published to commemorate the fifth anniversary of the Colony of Itanhenga, the State Leprosarium of Espirito Santo. The author describes the annexes of the Colony, i.e., its preventorium and "Granja," a small organization for farming instruction for boys, both exclusively reserved for healthy children of leprous parents. The Colonia de Itanhenga is a model of small leprosaria of the agricultural colony type. Its products are consumed by the patients and reduce considerably the cost of the institution. Cattle and fowl are bred for local consumption.—FROM AUTHOR'S SUMMARY.

DE SOUZA-ARAUJO, H. C. and NORONHA MORANDA, R. ¿Poderá o carrapato transmitir a lepra? Mais quatro amostras de culturas de bacilos ácido-álcool resistentes obtidas de carrapatos (2 de *Amblyomma cajennense* e 2 de *Boophilus microplus*) infectados em lepros do Paraná. 3a. Nota. (Can leprosy be transmitted by ticks? Third note. Isolation of four more samples of cultures of acid-fast bacilli from ticks infected on leprosy patients.) Mem. do Inst. Oswaldo Cruz. **37** (1942) 391-425. With 23 figures.

The authors, by experiments in the leprosarium São Roque, State of Paraná, South Brazil, were able to show that the cattle tick *Boophilus microplus* could be infected by feeding on leprosy patients.

They were also able to demonstrate that *Boophilus microplus* and *Amblyomma cajennense* could change hosts during their feedings. Both ticks continued feeding, the latter for many days after being transferred from one leprosy patient to another.

The junior author also describes a dermatitis caused by tick bites. The senior author brought to Rio de Janeiro most of the infected ticks for examination. He smeared the sediments from lots of both species on Loewenstein media and after incubation at 37° C. he obtained four new samples of cultures of acid-fast organisms, two from *Amblyomma cajennense* and two from *Boophilus microplus*. These cultures are being studied and will be inoculated into laboratory animals.—FROM AUTHOR'S SUMMARY.

BALINA, PEDRO L. Terminologia used en la práctica leprológica. Conveniencia de uniformarla y depurarla. (Usual terminology in leprological practice. The convenience of its uniformity and selection.) Rev. Arg. de Dermatosif. **27** (1943) 243.

The author suggests the suppression of words in leprological lexicon which might be disagreeable for leprous patients, such as "leper," "leprosarium," "clean part and unclean part," etc., substituting for them "leprous patients," "sanatorium-colonies," "administrative zone," "patients' zone," etc.—G. BASOMBRÍO.

BASOMBRÍO, GUILLERMO. Beneficio del tratamiento chaulmoógrico intensivo en la lepra lepromatosa. (Benefit of the intensive chaulmoogric treatment in lepromatous leprosy.) Rev. Arg. de Dermatosif. **27** (1943) 238-240.

The treatment with high doses of chaulmoogra oil or its esters (20 or 30 cc. weekly) by intramuscular or subcutaneous injections, showed benefit in three cases of not very advanced lepromatous leprosy. It was possible in a period of two to two and one-half years to succeed in eliminating all the patches and to make the patient bacteriologically negative. However, the Mitsuda test continued negative in all cases.—FROM AUTHOR'S SUMMARY.

GARZÓN, RAFAEL and ARGÜELLO PITT, LUIS. Neuritis leprosa tuberculoide a forma de abcesos caseosos múltiples. (Tuberculoid leprous neuritis with multiple caseous abscesses.) Rev. Arg. de Dermatosif. **27** (1943) 247.

Three patients with caseous abscesses in peripheral nerves are presented: two males and one female; ages, 17, 19, and 22. All three cases gave a positive Mitsuda test. The histopathology showed tuberculoid structure in all the cases. In none of them was it possible to find *M. leprae*.—G. BASOMBRÍO.

IGLESIA V., RAFAEL. Las altas dosis de vitamina B^1 por vía raquídea en el tratamiento de la lepra. (High doses of vitamin B^1 intraspinally in the treatment of leprosy.) Le Semana Médica. **17** (1943) 956-958.

1) The treatment of leprous neuralgias with vitamin B^1 intraspinally is well tolerated and has favorably changed the state of our patients. 2) Only a few injections of high dosage every 6 or 7 days are needed (0.25 to 0.50 grams). 3) Under this treatment it is possible that the thickened nerves may return to their normal state or, at least, there is diminution of their thickening in the majority of the cases, thus avoiding surgical intervention with the ulnar nerve in order to attenuate the pain.—FROM AUTHOR'S CONCLUSIONS.

LLANO, LEONIDAS. Clasificación de las úlceras leprosas y su tratamiento. (Classification and treatment of leprous ulcers.) Rev. Arg. de Dermatosif. **27** (1943) 241.

The author adopts the following classification for leprous ulcers: 1) leprous ulcers of vascular origin, 2) leprous ulcers from trophic or nervous causes. The former originate in accumulations of bacilli, or "globi", which obstruct the capillaries, impede local circulation, and cause necrosis and ulceration of the tissues. These ulcers may have a trophic origin caused by peripheral neuritis. The author tried the local and intramuscular treatment of tartar emetic, which benefits ulcers of the former class only.—G. BASOMBRÍO.

LÓPEZ GONZÁLEZ, JERÓNIMO. Sobre un caso de lepra tuberculoide. (A case of tuberculoid leprosy.) Fev. de la Sanidad Militar. **6** (1943) 389.

A case of tuberculoid leprosy. The author discusses the clinical forms of the disease according to the classification adopted by the South-American leprologists. —G. BASOMBRÍO.

OLMOS CASTRO, N. and SCHEREIER, J. Un año de profilaxis antileprosa en Tucumán. (A year of antileprous prophylaxis in Tucumán.) Revista Médica de Tucumán. **7** (1943) 1.

A review of the work of the leprological service of Hospital Avellaneda in Tucumán during the year 1942. There were 28 new patients, 13 of the tuberculoid form, 13 lepromatous, and 2 uncharacteristic.—G. BASOMBRÍO.