REPORT OF THE PATHOLOGY DEPARTMENT OF THE SCHOOL OF TROPICAL MEDICINE FOR THE PERIOD BEGINNING APRIL 15, 1929 AND ENDING JUNE 30, 1930

ENRIQUE KOPPISCH

From the School of Tropical Medicine of the University of Porto Rico under the auspices of Columbia University

The first report of the routine activities of this department was published by Dr. Alice M. Burke in September 1929, and covered the period from the opening of the School in 1926 to April 15, 1929 or nearly three years. To facilitate comparison between the previous report and the present one, the same general plan of presentation will be followed.

The period under consideration has been marked by a very rapid increase in the number of miscellaneous specimens received and autopsies performed. The rate of increase will undoubtedly be maintained for the importance of such service is now generally recognized among practitioners in all parts of the island, and this is the only laboratory in Porto Rico having the technical equipment for the handling of such material on a large scale. The policy of rendering services gratis to all who call for them is being continued.

A marked increase in the pathology service is indicated by the following table which demonstrates that the number of specimens has doubled during the past year:

April 1926 to April 1927	581 specimens
April 1927 to April 1928	692 specimens
April 1928 to April 1929	625 specimens
April 1929 to April 1930	**1,106 specimens**

Thirteen hundred and sixty specimens removed at operation have been examined during this fourteen-month period, as compared with nineteen hundred and fifty specimens during the preceding three-year period. This material has been received from 122 physicians in twenty-five towns of the Island. There were six specimens from two different cities in the neighboring island of Santo Domingo and two from Saint Thomas, Virgin Islands. Twenty-two of the Porto Rican physicians have sent more than ten specimens each.

An interesting feature has been the number of autopsies performed by physicians not connected with the School, the organs from

which are sent in for examination. These are usually listed with the miscellaneous specimens. Eighteen such autopsies are found in the records for the first three years, and twenty-four for the subsequent fourteen months. In not more than four of these was the post-mortem examination done for the elucidation of problems connected with legal proceedings so that the figures may be taken as an indication of the increased interest on the part of practitioners to confirm or classify ante-mortem findings at the autopsy table.

Among the specimens examined have been six spleens from cases in which splenomegaly was the outstanding clinical problem. Four of these were recovered at the operating table; the remaining ones at autopsy. Malaria was the cause of the splenic enlargement in two. In two others changes similar to those seen in Banti's disease were found. In one the splenomegaly was apparently caused by Schistosoma mansoni. In the sixth case the changes could not be classified.

Lympho-granulomatosis inguinalis (climatic bubo) has been encountered eight times. The condition appears to be not at all uncommon in the island but the diagnosis was not made in any of the above cases prior to examination of the biopsy material.

Ten thyroid glands removed at operation fall under the following headings: Adenoma of thyroid gland (five cases), colloid goiter (one case) and diffuse hyperplasia of glandular epithelium with goiter (four cases). The latter cases were classified at the bedside as exophthalmic goiter. These specimens were received from physicians on the northern and western coasts only, but no conclusions can be reached as to the distribution of goiter in the Island because of the limited number studied and because the bulk of the total specimens received comes from San Juan and its environs on the northern coast.

Eosinophilic infiltration of the tissues has continued to be noticed in the appendix. It has not been a prominent feature in other organs or tissues except occasionally in carcinomata of the cervix uteri.

In agreement with the findings of Lambert and Burke, the incidence and distribution of tumors, particularly the malignant ones, is no different from that in non-tropical countries. Among the 1,360 miscellaneous specimens there were 347 tumors of which 140 were benign and 207 malignant. The relatively high proportion of neoplasms in the series is explained by a higher interest on the part of practitioners because of practical considerations relating to diagnosis, treatment and prognosis.

The ease with which permission for post-mortem examinations is obtained has been a continued source of gratification to both clinician and pathologist. Indeed, a few curious instances are remembered in which relatives of the deceased have requested a verification of the clinical diagnosis by autopsy. These facts stand in strong contrast with the very generalized impression among practitioners four years ago as to the difficulties supposed to be inherent to this part of the service. Autopsies have numbered 144 in fourteen months, giving an average of about ten a month. In the preceding three years there were 225 autopsies.

These examinations have been performed in nineteen different institutions, ten of which are located in San Juan and its immediate surroundings and the remaining ones at Naguabo (2¼ hours from San Juan), Guayama, (3½ hours), Trujillo Alto (45 minutes), Yabucoa (3 hours), Carolina (½ hour), Río Piedras (20 minutes), Cataño (20 minutes) and Juncos (1½ hour), respectively. The Municipal Hospital in Santurce has lead with forty-five posmortem examinations. The Presbyterian Hospital follows with thirty. The Municipal Hospital in Río Piedras is third with twenty-three autopsies.

The number per year including the present report has been as follows:

May 13, 1926 to April 15, 1927	53 autopsies
April 15, 1927 to April 15, 1928	84 autopsies
April 15, 1928 to April 15, 1929	92 autopsies
April 15, 1929 to April 15, 1930	101 autopsies

From April to November 1930 there has been a further increase. During this seven-month period there have been eighty-nine autopsies or an average of 12–5/7 a month, against a monthly average of 8–5/12 for the period of April 1929 to April 1930.

The diseases predominantly tropical in distribution have been, in general, a minor factor as a cause of death in comparison with the more cosmopolitan forms of disease. Infestation with parasitic helminths has been as follows:

Uncinariasis	21
Schistosomiasis	10
Trichuriasis	23
Ascariasis	5
Strongyloidosis	1

Of the cases of Schistosomiasis, eight presented pseudotubercles in various organs, mostly liver, in addition to changes in the lower gut. In some they have been found in the pancreas, spleen, supra-

renal glands and lungs. Fragments of ova formed the nucleus of the pseudotubercles. One case, that of a young man of sixteen, presented an extensive colloid carcinoma of the cecum with metastases to the peritoneum. Schistosoma ova were present in the tumor tissue. In two of the cases the bilharzia ova were found only in the feces. Two autopsies were performed on young children (the eldest was 7) in whom death took place very shortly after ingestion of therapeutic doses of oil of chenopodium. No pathology was demonstrable.

Of other tropical conditions there were the following:

Malaria	4
Leprosy	3
Sprue	5
Filariasis	4

Of the malaria cases, two died from the pernicious form. In two cases malaria was an incidental finding and was diagnosed by the presence of malarial pigment in the spleen and liver. Of the three lepers one died with extensive pulmonary tuberculosis, another with acute tuberculous broncho-pneumonia and a third of lobar pneumonia.

The five cases diagnosed clinically as sprue have shown the various lesions of glossitis, extreme emaciation, atrophy of organs, chronic enteritis and aplasia of bone-marrow. One case was doubtful at post-mortem examination because of the marked hyperplasia of the bone-marrow. Differentiation from pernicious anemia was not possible. However, there was extreme emaciation, atrophy of organs and enteritis. In one case the cause of death was lobar pneumonia; in the remaining ones sprue was apparently the only factor concerned.

Filarial worms were found in the tissues of four bodies that came to autopsy. Their locations were: epididymis (2), lymph node of external iliac group (1), and scrotal tissues (2). Two of these presented unilateral or bilateral hydrocele; a third had a bilateral hydrocele and elephantiasis of one leg; the fourth, varicose from glands.

Of the diseases of more general distribution, lobar pneumonia was fatal in eleven cases and lobular pneumonia in seven; typhoid fever in six and epidemic encephalitis in one.

Tuberculosis was met with in its chronic pulmonary form twelve times; as an acute bronchopneumonia once, and in generalized miliary form twice. Obsolete lesions were present in five bodies.

Of six instances of syphilis of the aorta, aneurysm was present in four. Syphilitic changes were found in the liver of two additional cases. Congenital syphilis was met with in a stillborn child and in a boy seven years of age.

The eight cases of septicemia in which the etiologic agent was ascertained were due to the following micro-organisms:

Hemolytic staphylococcus	2
Non-hemolytic staphylococcus	1
Staphylococcus pyogenes aureus	1
Hemolytic streptococcus	1
Non-hemolytic streptococcus	2
Bacterium putrificans	1

Endocardial vegetations were noted in six cases. In two of these rheumatic fever was suspected but its presence was not fully confirmed by microscopic study. One other case was an instance of subacute bacterial endocarditis due to the streptococcus viridans. Three cases remain unclassified.

It is interesting that there were no examples of rheumatic cardiac disease and that mitral disease was not noted in any of these autopsies. In this connection it may be mentioned that two undoubted cases of acute rheumatic fever have come to our observation with typical cardiac lesions, both grossly and microscopically, during the months of August and September, which are not included in this report.

General Statistics

Surgical cases examined	1,316
Thyroidectomies	10
Tonsillectomies	33
Appendectomies	63
Uterine curettings	11
Cervical amputations	37
Bone-marrow drills	16
Malignant tumors	187
Benign tumors	**130**
Total number of tumors	317

Malignant Tumors

Carcinomas:	
(*a*) Squamous cell type	69
(*b*) Basal cell type	25
(*c*) Gland cell type	44
(*d*) Embryonal carcinoma of testis	1
(*e*) Unclassified as to cell type	15
Sarcomas of all types	22

Chorio-epithelioma	1
Melanoma	3
Adamantinoma	1
Glioma	3
Endothelioma	2
Hemangioendothelioma	1
Total	187

Location of Malignant Tumors

Skin of face, nose and eyes		32
Skin of extremities and body		8
Mouth, tongue, tonsil, antrum, nasal cavity		12
Neck (6), mandible (2), scalp (2), axilla (1), leg (4), arm (1), back (1)		17
Larynx (2), bronchus (1)		3
Female G. U. Tract		63
Breast	21	
Uterus (cervix)	23	
Uterus (body)	9	
Vagina	2	
Ovary	6	
Clitoris	1	
Placenta (chorio-epithelioma)	1	
Male G. U. Tract		21
Pelvis kidney	2	
Bladder	1	
Prostate	3	
Penis	13	
Testicle	2	
Gastro-intestinal tract		12
Parotid gland	1	
Oesophagus	1	
Stomach	6	
Colon	2	
Rectum	1	
Anus	1	
Omentum		1
Retroperitoneal lymph node		1
Lymph nodes (metastatic)		6
Umbilicus (metastatic, unknown origin)		1
Bone-multiple		1
Abdominal wall		1
Spinal canal		1
Location not known		7

Benign Tumors

Adenoma	11
Adenoma, fibro (breast)	9

Angioma (1), lymphangoma (1), hemangioma (8)	10
Cyst of ovary excepting dermoids	11
Sebaceous cyst	1
Dermoid cyst (ovary)	1
Fibroma	11
Fibromyoma	26
Lipoma	2
Mixed tumors of parotid	1
Naevus of skin	4
Papilloma; larynx (1), penis (1), mouth (2), anus (1), skin (5), vagina (1), unknown location (1)	12
Polyp fibrous	2
Polyp adenomatous	10
Epulis (giant cell tumor of gum)	2
Keloid	2
Giant cell tumor of extremities	1
Osteoma	2
Branchiogenous cyst	2
Hydatid mole	3
Teratoma	3
Myxoma	2
Cartilaginous exostosis	1
Carotid gland tumor	1
Total	130