GENERAL STAFF MEETING
UNIVERSITY GENERAL HOSPITAL
UNIVERSITY OF MINNESOTA

CONTENTS

I. ANNOUNCEMENTS:

1. Fly Today

With us from San Francisco to New York via Hanford-United Air Lines Movies through courtesy of A. G. Kinsman, Representative of the Lines. The largest air transport system in the world today is the United Air Lines, which operates the New York-Chicago-Pacific coast, the Chicago-Kansas City-Southwest and the Seattle-San Diego air mail, passenger and express airways. This company recently completed the flying of its 50 millionth mile, of which approximately 23 million miles were flown at night. This is an international record, no other air line having recorded that much mileage.

United Air Lines operates on government lighted airways, which are equipped with such aids to flying as radio telephone communication between planes in flight and ground stations, directive radio beacon service, full U.S. Weather Bureau reports on weather conditions prevailing along the routes, modern planes and efficient engines, and accurate instruments for air navigation.

It takes about 27 hours to fly from San Francisco to New York on United Air Lines.

In spite of economic conditions which aren't at all conducive to expansion, air passenger traffic is steadily increasing, which is evidence that people in this country have accepted this new mode of transportation.

We were to have been cared for on this trip by Ellen E. Church, former chief hostess of the Boeing Air Transport who is prevented by illness from going along. A glimpse of the type of service rendered by the new "Air Nurses" follows.

"PUBLIC HEALTH NURSE"
370 - 6th Avenue, N.Y.

When Boeing System, one of the largest air transport lines in the world, announced it had employed women as the third member of the crew on its trimotored passenger transports flying between Chicago and San Francisco, a new field was opened up for the nursing profession. This is the first company to employ women instead of male couriers as members of airplane crews.

It was six months ago that the experiment started, but the response of the traveling public has been such that company officials have expressed their opinion that the service has justified itself and that the employment of these nurses has been good policy.

Several of the young women, who have been employed since the stewardesses were first placed on the ships, have already flown in excess of 100,000 miles.

The Boeing System stewardesses, ten in number, were chosen from some 200 applicants. To qualify they must be graduate nurses with an excellent record at the hospital at which they were employed as to ability and character. An effort has been made to have these young women uniform in appearance and personality if possible. Experience, personality and character are the controlling factors in choosing the stewardesses. It is interesting to note that there are far more applicants than there are positions available. Apparently this new avenue of employment for young women has caught the public fancy. The stewardesses average in age from 21 to 27 years and, because of requirements in uniform, they average five feet four inches in height and one hundred fifteen pounds in weight.

The uniform of the nurse, which is furnished by the company, is most attractive. It is a four-piece suit, including beret and cape. On the planes a gray smock and cap is worn. During the winter season beautiful tailored leather coats are substituted for the capes. The upkeep of the uniform is also at the expense of the company.

The nurses have every other day off (or night, as the case may be) and two days or nights at the end of the week. Their work days average about thirteen a month, although they are paid on the monthly basis.

Their duties are varied. One activity is to furnish lunches while in flight. As the first asset of the airplane is speed, lunches are served in flight rather than on the ground, except at Cheyenne, Wyoming, where hot meals are served while

planes are being changed. The lunches are carried in hampers and a typical lunch is as follows: Assorted sandwiches, cold fried chicken, potato chips, cake, cookies, olives, coffee and lemonate; for the midnight lunch, sandwiches with hot drinks are served. Eating on this transcontinental, twenty-hour flight between the Great Lakes and Golden Gate is an interstate affair, with breakfast in Chicago, lunch over Omaha, dinner at Cheyenne, and a midnight supper over Nevada.

The stewardesses supply reading and writing material, send telegrams and dispatch letters, furnish pillows and, in case of its becoming chilly over the high altitude sections of the flight, passengers are given blankets if necessary, although the planes have forced heating and ventilation.

Contrary to popular opinion, the stewardesses do not frequently have to administer to those suffering from air sickness. A check made of passengers traveling on the Chicago-San Francisco line shows that not to exceed five per cent are really ill from air sickness. Experience shows that considerable of this could be reduced if passengers would eat properly before boarding the planes and get on the ships in good physical condition. Sometimes people taking their first flight fail to eat a hearty meal before boarding the ship, which is a mistake, as a person who will eat a fairly substantial meal before flight is less susceptible to air sickness. Also, fewer people are air sick on their second trip than on their first, probably due to nervousness on the first flight.

Air Transport holds considerable novelty for the traveling public and passengers are anxious to know points of interest flown over and are eager to learn the details of the construction and operation of the large Boeing transports. These ships, with a wing span of 80 feet, weight eight and three-quarter tons when fully loaded and carry enough gasoline for a 500-mile flight without refueling. Consequently, the stewardess must be informed both as to the route and the airplane industry.

Night flying is new to most travelers, but the stewardesses have found that practically without exception and even on their first flight, passengers are asleep within an hour or so after the take-off.

Many passengers profess a preference for the night flying rather than the day flying. One reason for this is that on the Boeing line the service is so speedy that passengers can travel between cities as distant as a thousand miles between dusk and dawn without losing any business hours. The stewardesses frequently find passengers who take night flying so callously that they scarcely awaken when a landing is made.

In general, the function of the stewardess is to see that the trip is made comfortable and interesting for the increasing number of people who now recognize that air transportation is an important and increasingly necessary unit in their national scheme of transportation. Regular schedules, large passenger transports, improved airports and great terminals, together with the added dependability of the radiotelephone, enabling the pilot to talk to the ground stations and to pilots of other planes in flight, and lighted airways and directive radio beacons to keep him on his course, have brought about this change, and it is natural that, in line with catering to a high class of travel which uses the airplane, stewardesses should be employed. Some air transport lines in this country and in Europe use male couriers, but the public's response to the stewardess idea has been prompt.

The graduate nurses employed by Boering Air Transport are: Ellen E. Church, Chief Stewardess, Cornelia Peterman, Margaret Arnott, Harriet Fry, Emma Monay, Ernestine Rackliffe, Olette Hasle, Katherine May and Ida Novelli."

Note: Miss Church, a Central School (U. of M.) graduate, is now with us on Pediatrics V.

II. ABSTRACT:

NEUROGENIC SARCOMA.
Abstr. Koucky.

Ref.: Stewart, F.W. and Copeland, M.M., "Neurogenic Sarcoma", Am.J.of Cancer, XV: 1235-1320, (July) 1931.

The term "fibrosarcoma", used to designate many of the sarcomatous tumors of the soft parts, conveys little real information. It implies no intelligent understanding of the tissue or tissues of origin, the etiology, general pathological scope, or presumptive clinical course of such tumors. The term includes neurosarcomas, (neurogenic sarcomas, neurinomas, perineural fibroblastomas), myosarcomas, liposarcomas, extra-periosteal fibrosarcomas of uncertain origin, and melanoma-like tumors of the deeper nerve trunks. The solitary, very cellular, anaplastic, rapidly metastasizing, fatal neurogenic sarcoma is but one link of a chain leading through varied clinical pathologic entities up to fully developed von Recklinghausen's neurofibromatosis with all its diverse related manifestations.

The whole scope of this latter disease is not as yet defined. Its manifestations are widespread. We recognize pigmentation, cutaneous neurofibromatas, plexiform neuromas, multiple or solitary malignant neurosarcomas, elephantiasis neuromatosa, ganglionic neuromas, dural endotheliomas, diffuse or circumscribed gliosis and gliomata, secondary central nervous system changes resulting from pressure, syringomyelia, plexiform neuromas, congenital lipomas, bony malformations, osteoporosis as manifestations of the disease of multiple neurofibromatosis. Many other associations have been observed such as spina bifida, suprazygomatic meningocele, hairy nevi, tuberose sclerosis of the brain, multiple adenomata sebaceum. The relation between neurofibromatosis and certain types of melanoma have recently been brought out by various authors. (Masson). The authors state that melanomas (all melanomas?) are tumors of nerve endings, and that there is a relationship between melanoma and neurofibromatosis. Cases of neurofibromatosis associated with disturbance of the glands of internal secretion such as acromegaly, Addison's disease, thyroid disturbance or polyglandular disturbances have been described. Ewing is quoted as saying that he believes that certain cases of Dupuytren's contracture are neurofibromatosis. Similar types of contractures have been observed in the foot, toes and neck. Authors bring out that their attempt in searching the literature for neurosarcomas was made difficult by the classification of spindle-cell sarcomas, fibrosarcomas, small round cell sarcomas, etc. Moreover, the association between the tumor and the nerve is frequently overlooked, particularly in the American literature.

Histological characteristics:

These authors are convinced that the active proliferating cells in neurosarcomas is the Schwann cell. Through long series of cases, they were able to trace proliferation of this type of cell from the early or small tumors into those which were well-developed. The tumors are characterized by the development of fibers, hence the name fibrosarcoma which frequently have a longitudinal palisade arrangement. Some remnant of the nerve fiber or the axis cylinder may be present, however it is frequently degenerated. In some of the tumors, the lamellar sheath shows thickening and increased cellularity and possibly participates in the formation of the tumor. (See Masson). In many of the small neurosarcomas, arrangement of the cells suggested very strongly that condition found in amputation neuromas which show proliferation of the Schwann cells. The tumors, grossly, may be solitary and encapsulated or they may be multiple and fused and apparently infiltrating. The development of multiple fused infiltrating tumors is due either to the sarcomatous degeneration of a previous plexiform neurofibroma or else a progressive involvement of the nerves in a certain locality giving rise to fixation to muscle, fascia or periosteum. In the more cellular tumors, hemorrhage, cystic degeneration, infarction and telangectatic features are common. This suggests the venous route as the explanation for the presence of pulmonary metastases which are most common in this type of tumor. Metastases to other viscera are less frequent and general soft-part metastases are rare. Dissemination appears to be entirely by way of the venous emboli (see Case II). Tumors can be divided into grades in the manner in which carcinomas are graded.

Grade I tumors are very fibrous and tend to run a prolonged course. Grade II and IV tumors are the cellular type with hemorrhage degeneration, etc. in which blood borne metastases occur. Grade II are the intermediate type and these are very variable in their behavior.

Anatomical-clinical groups:

Some cases develop in patients with diffuse classical signs of von Reklinghausen's disease. In other patients, some of the stigmata of the disease may be present, such as pigmentation. In still other groups, there has been observed none of the signs of von Recklinghausen's disease. The authors note that in many of the tumors attachment to a major nerve trunk can be found and pigmentation may be present. The oftener that these findings are looked for the more frequently they are found. The site of occurrence of primary tumor in order of frequency is the region of the knee, groin, upper anterior hip, upper arm, gluteal region, upper posterior thigh, scapular and interscapular region, upper forearm and region of the brachial plexus. When actual nerve connections were demonstrated by dissection, the order of involvement was as follows: ulnar, radian, median, sciatic, femoral, anterior crural, popliteal, lumbo-sacral plexus, cervical sympathetic, peripheral nerve in scapullar region. The grading of the tumor in the prognosis appears to have definite relation. Grade I tumors, 16 patients, 4 were alive and well after 5 years from the date of the last treatment. In Grade II among 36 patients, only 2 are living without evidence of disease in 5 years. In grade III, there were 21 patients with only 1 remaining well over 5 years, 14 died after a total disease duration from 9 months to 4 years and 8 months.

The following conclusions regarding treatment are by the authors:

1. The tumor grade is of decided importance in estimating group prognosis. A tumor of slow growth and long duration does not necessarily show a low-grade structure.

2. After excision, recurrence is the rule. These recurrences are not recurrences in the ordinary sense, but are new tumors arising from nerves in the vicinity.

3. Definite evidence that irradiation after excision prevents or delays recurrence is lacking, although the five-year radiation regressions of certain tumors suggest that this is at least probable.

4. Certain tumors have recurred during the course of irradiation, and it may be that the irradiation should be withheld in the less cellular tumors until there is suggestive evidence of recurrence, to avoid using up the skin tolerance.

5. The best irradiation results have been in the low-grade tumors, which may gradually vanish through a process of slow sclerosis.

6. There is little to support the irradiation treatment of the more malignant types.

7. There is a relation between a long pre-treatment interval of disease and a long post-treatment course.

8. Certain tumors of long duration, and either quiescent or of very slow growth, have recurred after surgery, and the patient has been made worse by treatment. It may be that a policy of non-interference in this type of growth should be instituted.

9. In one instance gold seed implantation in a tumor, without previous external irradiation, was followed by distant soft part metastases, not characteristic for that type of tumor.

10. There exists a group of tumors where the cell structure is epitheloid. These tumors may bridge the gap between typical neurosarcoma and typical melanoma.

11. No patient with a Grade IIor III neurogenic sarcoma in this series has lived for 5 years without disease and without any treatment during the 5 year interval, except patients treated by amputation.

Ref.: Masson, P., "Experimental and Spontaneous Schwannomas (Peripheral Gliomas)", Am. J. Path., VIII: 367-388 (Pt. I), 389-416 (Pt.II), (July) 1932.

This author deals with the histology and histogenesis of neurosarcomas. He uses for illustrative cases the peripheral nerve type (our

own cases are of the visceral type).

The Schwannian Syncytium:

In the adult medulated nerve fiber each segment is enclosed in a delicate protoplasmic envelop, bounded externally by a cuticle--the membrane of Schwann. The protoplasmic envelop is applied closely to the myelin sheath. In the middle of each internodal segment there is a slight thickening of the protoplasmic envelope. This thickening contains an oval nucleus with fine chromatin network. This membrane forms a continuous syncytium. The Schmidt-Lantermann incisures described in histology text are not cell membranes but represent the line of fusion between cells.

Endoneurium:

The endoneurium is generally accepted as a connective tissue, an assemblage of collagen and reticulin fibrils together with branching cells, all of mesodermal origin. This author by special staining technique and experimental proof has shown that this endoneurium is part and perhaps the product of the Schwannian syncytium (i.e. ectodermal) (this explains the confusion if this histological fact is not accepted of some authors in their attempts to explain the presence of marked endoneurium hyperplasia on the basis of Schwannian hyperplasia.

Experimental Schannomas:

The histology of Wallerian degeneration and regeneration are reviewed. If, however, the proximal segment of a cut nerve in a rabbit is torn out, regeneration is prevented. The distal segment undergoes a hyperplasia of the Schwannian tissue. Schwannian sprouts emerge and, construct a fibroglioma at the end of the fragment. In other experiments, such as isolating a segment of the sciatic nerve or transplanting a segment of the nerve, similar hyperplasia which goes on to form large proliferating tumors can be induced. Histological studies of these tumors show that the tumor is formed of the Schwann tissue. This growth is accomplished (a) by repeated amitotic division, (b) by longitudinal cytoplasmic cleavage, and followed (c) by the production of tubular, ensheathing septa formed of reticular origin. The production of the ensheathing collagen and of the entire interstitial endoneurium of the bundle is determined by the Schwannian syncytium. The growth occurs from the central part of the old nerve and the remnants of this nerve are pushed to the outside and eventually form a capsule about the tumor.

Part II. Spontaneous Schwannomas:

The author discusses encapsulated tumors of the peripheral nerves basing his interpretation upon the results obtained by means of the histological methods and experiences used in the study of the experimental Schwannomas.

The capsule formed of lamellae envelops the tumor except at the point of attachment of the nerve. It probably represents the remnants of the old nerve distended by the growth of the tumor within it.

The tumor tissue is of two structural types, Type A, fasciculated and clearly polarized, that is, arranged in elongated bands, and Type B, reticular, without polarity. The staining reaction and the structure is identical with the experimentally produced Schwannomas. The text follows with an extensive description of staining reactions, staining technique and detailed histology.
Palisades: Pathognomonic of neurosarcomas. These consist of oval nuclei aligned in the same transverse plane "like staves of a barrel." Some of the palisades have a structure which resembles almost identically the structure of a Meissnerian corpuscle. The author asks the question, "Is it not the tactile nerves that produce palisaded neurinomas?" Some neurosarcomas do not show the palisades and therefore it is possible that these represent an origin from non-sensory nerve fibers.

Degeneration: Sclerosis (Case II) and myxoid metamorphosis (Case I) occur in these neurosarcomas. This is considered as a process of decay. The author has traced by serial section the areas of degeneration and has shown that these areas lie within the distribution of blood vessels whose walls show hyalinization.

III. CASE I.

PROBABLE VON RECKLINGHAUSEN'S DISEASE. NEUROSARCOMA OF STOMACH.

Path. Koucky.

The case is white male, 63 years of age, admitted to University Hospitals 10-28-32, expired 11-21-32 (24 days).

Pain

12- -31 - Sharp, stabbing pains in upper part of abdomen, particularly after eating. Occasional vomiting. Swelling of abdomen and ankles.

Worms (?)

Winter 1932 - Few white objects in stool which he believed to be worms. Constipation and bright blood in stools (hemorrhoids). Peculiar sensation of "cold spots" in arms and legs.

Mental Deficiency:

3 children in Faribault State School for Mental Deficiency. 1 son (21 years) spits blood?

Admitted

10-28-32 - Symptoms approximately same.

Past history

Urinary frequency and nocturia. No hematuria. Frequent headaches associated with dizziness and tinnitus (2 years). (Acoustic neurinoma?)

Physical examination

Eyes - defect in inferior portion of iris of left eye and small area of degeneration in retina of same eye; left pupil does not react to light and accommodation. Ears - very deaf (?). Neck - marked enlargement of thyroid on both sides. Abdomen - vague diffuse tenderness, left inguinal hernia.

Laboratory

Repeated urine examinations - negative. Blood - Hb. 104 - 111%, wbc's 8,700, Pmn's 80%, L 18%, M 2%. Stool - large number of Hymenolepis nana. Gastric expression - maximum free Hcl 25°. P.S.P. - 5% (?) (2 hours).

X-ray

Chest - negative. Gastro-intestinal study - stomach filled out well and showed a defect in lower portion characteristic of large benign tumor. Peristalsis went through this area perfectly. No evidence of malignancy. Otherwise stomach normal. Duodenal bulb filled out well. Curve of duodenum markedly enlarged and third portion looped back on itself instead of going up posterior to stomach in usual position of duodeno-jejunal juncture. It looped up toward junction of first and second portion of duodenum and jejunum was visualized in right upper quadrant which was definitely abnormal. This was very suggestive of an intraperitoneal hernia. There is not the usual number of loops on left side of abdomen. Pelvis shows some deformity of upper ends of femora, suggesting old slipping of femoral epiphyses. Diagnoses: 1. Large benign tumor of stomach. 2. Possible right paraduodenal hernia. 3. Bilateral slipped femoral epiphyses, more marked on right. Subsequent gastrointestinal studies show same picture. Diagnosis of probable right paraduodenal hernia adhered to throughout examinations. Ear consultation: Some retraction of left ear drum - impacted wax. (Incomplete examination).

Eye consultation.

Right eye - conjunctiva, cornea, iris, pupil, lens, vitreous - normal. Left eye - Conjunctiva and media normal; coloboma (congenital origin) of iris at 6 o'clock; spot of choroiditis (?) in optic disc occupying about one-third of temporal portion of disc. Medical and surgical consultation - recommendation to patient that he should be explored, and tumor of stomach removed to be followed by medical treatment of intestinal parasite.

Operation

Laparotomy disclosed presence of large lobulated tumor, size and shape of kidney, soft consistence, appeared to be hemorrhagic. Attached by pedicle to stomach and appeared to be retroperitoneal in position. During operative procedure, patient went into shock-like condition. In spite of intravenous medication, transfusion.

he became worse. Respirations ceased. Placed in Drinker apparatus but did not respond. Expired at 12:32 P.M.

Autopsy

External examination

Body shows no special marks? other than puncture wounds in antecubital fossae and recent left rectus incision. Rigor present. Hypostasis purplish and posterior. No edema, cyanosis or jaundice. Pupils irregular, left appearing to be smaller than right. Defect in left iris noted (as described above). Embalming wound in right axilla. Inguinal hernia.

Peritoneal cavity contains a slight excess of blood-tinged fluid. Serous surfaces are smooth except for operative defects. Appendix free and shows no inflammation.
Pleural cavities free of adhesions. Contain no excess fluid. Pericardial sac smooth, glistening and contains no excess fluid.

Slight Hypertrophy

Heart appears to be enlarged (slightly). It would probably would weigh about 400 grams. (No scales.) Definite hypertrophy of left ventricle (slight). Valves intact. Root of aorta of normal size immediately above aortic cusps and shows only minimal sclerotic changes. Coronaries show 1+ sclerosis irregularly distributed along course of vessels.

Lungs slight congestion posteriorly. Minimal degree of atelectasis. No fibrosis, tuberculosis, recent inflammatory changes or tumors.

Defect.

Spleen quite small. On its lower pole facing lesser omental cavity, there is defect of serosa and capsule, apparently caused by operative removal of tumor.

Liver is about normal size. Usual markings and color. Cuts with normal resistance. No fibrosis. Biliary radicles appear normal. No tumors.

Gall-bladder is thin-walled and contains dark bile. No stones or cholesterosis present. Ducts open.

Tumor of Stomach. Anomaly of Bowel.

Gastro-Intestinal Tract. Esophagus postmortem change. Stomach has been incised (and small portion of stomach removed) over greater curvature, about 2 finger breadths above pylorus. Closed with sutures. Stomach mucosa about line of excision shows no disease. Tumor which has been removed from this area is attached to outer wall (musculature) of stomach, is quite well encapsulated, measuring 4 by 5 inches in diameter. On section, tumor resembles large degenerating adenoma of thyroid, shows pinkish, meat-like tissue. In another region, it is dark with caseous bits of material. Tumor quite friable.

Capsule: There is a zone of longitudinally arranged fibers at the periphery in which the nuclei do not appear to be hyperplastic. The capsule is in quite marked contrast to the interior of the tumor.

Tumor tissue: Fibrous tissue and myxoid tissue which is richly supplied with nuclei forms the bulk of the tumor. The tumor is very cellular. The fibrous tissue is not prominent. The myxoid tissue is relatively prominent. The nuclei are generally oval or spindle in shape. Mitosis is frequent. The general arrangement of the nuclei is very peculiar. There is a definite tendency toward palisade formation. At one point imbedded in myxoid tissue, there is a "s" shaped structure composed of 3 or 4 layers of nuclei which interdigitate transversely with each other. The general appearance of this structure resembles very strongly a Meissner corpuscle.

Diagnosis: Neurosarcoma (sensory origin - presence of palisades).

Duodenal loop appears to be slightly widened. Right paraduodenal fossa is well-developed but shows no evidence of paraduodenal hernia. Remainder of small bowel shows definite thickening of wall. No dilatation of bowel present. Cecum is in normal position. Ascending colon appears approximately normal. Hepatic flexure is about normal in position. Transverse colon is peculiar in that mesentery does not begin until almost at midline. Leaves hepatic flexure and beginning of transverse colon closely attached to posterior abdominal wall. Remainder of colon shows no changes.

Defect

Pancreas normal size, consistence

and lobulation. No tumors or cysts found. Serosa overlying tail of pancreas is disturbed. Defect in peritoneum in this region. It appears that tumor attached to stomach had been attached to retroperitoneal tissue at this point and possibly also opposite defect noted in spleen. No displacement or infiltration of pancreas or adjacent tissues to indicate that tumor had arisen in this location.

Adrenals are about normal size and show no hemorrhage, atrophy or other changes.

Hypertension)?)

Capsules of both kidneys strip with slight difficulty. Surfaces are granular with fine even pitting of hypertensive type. Substance of kidney is slightly diminished in amount and pelvic fat increased. Ureters and pelves are not dilated.

Bladder is approximately of normal size.

Prostate shows no enlargement into floor of bladder. Seminal vesicles are large and filled with fluid. No possible focus for tumor is found in this area.

Anomaly of Aorta

As noted above, aorta immediately above valves is normal in size. At junction of arch and thoracic aorta, there is definite constriction of lumen which barely admits finger (due to extensive atheromatous plaques (?). Thoracic aorta below this point of constriction appears to be approximately normal in size (not measured). Immediately below origin of mesenteric arteries, there is definite and abrupt constriction in size of aorta. Small finger cannot be passed through vessel at this point. Common iliac arteries are correspondingly small.
Note: Was sclerosis at upper stricture secondary?

Goiter

Organs of neck: Parathyroids are removed. Thyroid on both sides is very much enlarged, weighing approximately 150 to 175 grams. Enlargement due to large adenomas in each lobe. Adenomas well encapsulated. Interior of adenoma is degenerated (mucoid and calcareous). Grossly, no evidence of malignancy in either adenoma. Behind left lobe, there are 2 bodies measuring 17 and 18 mm. in length which appear to be parathyroid glands but are much redder than these structures usually are.

No appreciable enlargement of lymph nodes. Usual black nodes found at hilus of lung. No other enlargements found.

Examination of head - not done.

Autopsy material is searched again after completion of examination. Visceral pleura, ribs, sternum, vertebrae, testes, skin, bronchi, trachea and lymph nodes are all checked again for possible tumor, either primary or secondary, but none is found.

Diagnoses:

1. Probable von Recklinghausen's disease.
2. Neurosarcoma of stomach.
3. Operation wound.
4. Congenital anomalies of eye, aorta, intestine and bones.
5. Adenomatous goiter.
6. Inguinal hernia.
7. Hymenolepsis nana infestation (clinical).
8. Hypertension (heart and kidney).
9. Slight coronary sclerosis.
10. Marked sclerosis of aorta.
11. Mental deficiency (clinical?)
12. Operative defect of spleen and pancreas.
13. Respiratory failure of undetermined origin.

Note: The possibility of some lesion of the central nervous system was considered due to the complaints of patient. No examination permitted.

IV. CASE II.

VON RECKLINGHAUSEN'S DISEASE. NEUROSARCOMA OF REGION OF LEFT DIAPHRAGM.

Path. Ritchie.

Case is white male, 56 years of age, admitted to University Hospitals 9-6-32 and expired 10-31-32 (55 days).

Poor Health - Injury

10- -30 - Fair health (never strong)

up until this time when 500 lbs. box accidentally fell upon him. Was told he had fractured three ribs. Remained in bed for 2 weeks but was unable to work until 2 weeks later.

During next few months worked but on 6 or 8 occasions was forced to stop for day because of attacks of pain in chest following lifting some heavy object. Attacks of pain very sharp at first but later became dull and remained so for an hour or two. Massage over site of pain relieved it.

Another Injury

5- -32 - Attempted to stop runaway horses and was dragged along ground for about 40 or 50 feet. Injured same side which had been previously injured.

Pain Complex

8-2- 32 - Worked right along since second accident (May 1932) in spite of frequent pain and weakness. In middle of July, pain began to radiate across abdomen, up into chest and left shoulder, and then to left arm. Pain in shoulder is much more sharp than side. Pain became progressively worse until it finally was constant. Became very weak and unable to work. X-rays were taken at this time. Internal medication given without effect. During this month, had loss of appetite and weight (15 lbs. in 2 months).

Defective Child - Operation

Past History:

Cholecystectomy and appendectomy in 1916. Otherwise, the past history is negative. Report from Mayo Clinic (no record of operation) see xray examination. 1. No familial history of defects except for one child born with short, high chest.

Multiple Lumps - Tumor, left upper quadrant.

9-6-32 - Admitted. Physical examination: Mentality subnormal (?). Emaciated, white male, 56 years of age, in no acute distress. Eyes, nose and throat - negative. Thorax - soft mass over left 8th rib in anterior axillary line; small lump in scalp, outer skull table seems to be deformed; small, hard lump in left axilla; mass about size of quarter in left antecubital fossa; no note of pigmentation; well-developed and symmetrical chest. Lungs - voice sounds slightly decreased on left in region of 1st to 3rd dorsal spines; crepitant rales heard over same area; otherwise, lungs clear to percussion and auscultation. Heart - normal in size and shape; no murmurs heard; blood pressure 95/64; pulse 70, regular. Abdomen - scar in right upper quadrant some tenderness left upper quadrant on deep palpation; no movable dulness; liver, spleen and kidneys not palpable. Genitalia - negative. Extremities - lower right foot shows deformity in region of arch present since birth.

Laboratory

Blood - Hb. 96%, wbc's 14,900, Pmn's 93%, L 5%, M 2%. P.S.P. - 60% return in one 3 hour specimen. N.P.N. - 37.8. Stool - negative for occult blood. Blood calcium - 10.3. Wassermann - negative.

X-ray

9-13-32 - Chest, skull, spine - small, dense nodule in left lower lobe, which appearsttc be in parenchyma of lung (very early metastasis?) This is so small and as it is only one seen, diagnosis is not definite. No evidence of disease in skull. Dorsal and lumber spine show very definite decalcification. Some narrowing of 12th dorsal suggesting secondary compression.

Note: Osteoporosis in connection with other signs of neurofibromatosis. Gastro-intestinal study - Resection of distal half of stomach shown with anastomosis to small bowel. Anastomosis appears to be functioning (9-9-32).

9-12-32 - Neurological consultation: Examination negative. Pain suggests involvement of left diaphragm, i.e. worse on inspiration - referred to shoulder.

9-14-32 - X-ray of colon - K.U.B. - Barium enema. No evidence of obstruction, adhesions, tumor, diverticula or other disease in colon. No evidence of kidney disease.

9-19-32 - Masses removed from left chest wall and arm show typical neurofibroma.

9-22-32 - X-ray of gall-bladder - negative.

9-23-32 - Neo-iopax - Right kidney

shadow appears normal in size, shape and position. Left kidney shadow is well made out and appears normal in size, shape and position. Kidney pelvis and calyces are poorly filled, however. Some suggestion of deformity of pelvis secondary to possible tumor formation.

9-27-32 - Pyelogram - conclusions - Possible low grade infection of left kidney pelvis.

Exploratory Operation Attempted

10-10-32 - Mass in left side of abdomen seems to be enlarging. Can be felt anteriorly and posteriorly. May be kidney but pyelogram is negative so it suggests retroperitoneal tumor. Transferred from Medicine to Surgery.

10-14-32 - Exploratory examination to be done. Following spinal anesthesia, blood pressure fell so low that it was thought wise to postpone surgical procedures until another date.

Progress

10-16-32 - Surgical note: Tumor mass in left upper quadrant of undetermined origin. "We must consider recurrent (?) carcinoma of stomach as we do not know why resection was done in first place."

10-20-32 - Blood - Hb. 85%, rbc's 4,250,000. Suffered several severe painful attacks today which required morphine sulphate for alleviation. Abdomen distended.

Pleural fluid

10-21-32 - X-ray of chest - fluid in left pleural cavity. Thoracentesis done, 3 liters of straw-colored fluid obtained, last 1/2 liter is bloody. General consensus of opinion is that there is tumor of abdomen, possible carcinoma of bowel or mesenteric tumor.

10-27-32 - Looks pale and complains of pain and distress. Left chest dull on percussion and many rales heard anteriorly and posteriorly.

Peritonitis.

10-28-32 - Definite crepitation over whole left upper quadrant pronounced on inspiration. Believe that this is an adhesive type of peritonitis over mass present in this region. 10-30-32 - Temperature to 104. 2500 cc. bloody fluid removed from left chest. Became unconscious. Pulse imperceptible. Blood pressure 60/42

Exitus

10-31-32 - All attempts at stimulation unavailable and patient expired at 7:55 A.M.

Autopsy

External examination

Body is fairly well-developed, extremely emaciated, white male, about 56 years of age, measuring 177 cm. in length, weighing approximately 100 lbs. Skin dry. Rigor present. Hypostasis present. 1+ edema present throughout. No cyanosis or jaundice. Pupils irregular, right measuring 6 mm. and left 3 mm. in diameter. Small pterygium of right eye. Right upper rectus incision 14 cm. long, which is well-healed. Biopsy scar on left arm. Small puncture wounds in both antecubital fossae. Numerous, small petechiae present over upper chest and abdomen.

Fluid - Tumor

Peritoneal cavity contains about 500 cc. clear fluid. Peritoneum shows no evidence of inflammation but there is diffuse metastatic growth over parietal peritoneum, particularly on left side in upper quadrant. Peritoneum of right side of abdominal cavity free from metastatic growth. Appendix has been removed. Few adhesions in this region.

About 1000 cc. clear fluid in right Pleural Cavity and about 1000 cc. serosanguineous fluid in Left Pleural Cavity. Left parietal pleura studded with small metastatic growths, particularly in lower portion. Pericardial sac contains about 100 cc. clear fluid. Several small metastatic nodules within pericardium.

Heart - 250 grams. Very small but muscle of normal texture. No valvular lesions. Root of Aorta shows small calcified plaques. Walls of coronaries somewhat thickened but patent.

Tumor

Right Lung 700 grams, Left 750 grams. Portion of visceral pleura of left lung contains diffuse, small nodules as well as parenchyma of this lung, most being about 1 cm. in diameter. Visceral pleura of right lung free from nodules but in substance there are 6 or 7 small nodules scattered throughout. Marked

atelectasis of left lower lobe but no evidence of inflammatory reaction in either lung. Right lung is air-containing and shows some congestion at base. Right diaphragm normal. Left diaphragm replaced by large, nodular mass measuring 6 inches in diameter extending up into left pleural cavity and in abdominal cavity. From this mass, there is a radiation of tumor tissue in all directions. It is impossible to tell whether this mass has originated in diaphragm, pleura or below diaphragm. Stomach almost completely circled by tumor tissue. Large mass of tumor between stomach and liver. Splenic flexure of colon surrounded by tumor tissue and lumen somewhat constricted. Tumor extends into peritoneum as described above. Mesentery shows many nodules as well as enlarged glands at base.

Spleen is very small, has very thick fibrous capsule and is densely adherent to mass in left diaphragm. Rather firm and on section shows reddish, firm pulp.

Metastatic tumor

Liver weighs 1650 grams. Several nodules on surface. Swollen and rather light in color, and shows some congestion.

Gall-bladder filled with bile. No thickening of wall or evidence of inflammatory process. No stones in bladder or common ducts. Hepatic, cystic and common ducts patent.

Gastro-intestinal tract. Resection of stomach and enterostomy. Encroachment of tumor on gastro-intestinal tract is described. Otherwise, no evidence of disease of tract. No finlammatory reaction. Adhesions which are present are mostly over tumor area in epigastrium and on left side. (See clinical notes).

Pancreas normal in size, shape and situation. No nodules within substance.

Left adrenal cannot be found but right normal in size, shape and shows no evidence of disease.

Negative

Right kidney 125 grams, Left 150 grams. Capsules strip with ease. No evidence of hemorrhages. Surfaces smooth. Kidneys rather pale and show some swelling (particularly left). There is small cyst, measuring about 4 or 5 mm. in diameter in left cortex.

Bladder shows no evidence of cystitis.

Genital organs - normal.

Aorta shows few calcified atheromatous plaques, particularly around intercostal vessels.

Lymph nodes of neck, axilla and inguinal region not enlarged.

Thymus small and shows no change.

Head not examined.

Diagnoses:

1. von Recklinghausen's disease.
2. Neurosarcoma of left diaphragm, pleura, lungs, stomach and splenic flexure of colon.
3. Metastatic tumors of right lung, and liver.
4. Ascites and hydrothorax.
5. Old operation scar.
6. Pulmonary atelectasis.
7. Atrophy of spleen.
8. Acute peritonitis. (Recent adhesions).
9. Cloudy swelling of kidneys.
10. Congestion of spleen.
11. Multiple subcutaneous tumors.
12. Osteoporosis of spine.
13. Deformity of foot.
14. Mental deficiency? (clinical).

Note: We have not been able to find record of operation at Mayo Clinic (1916). It may have been for neurosarcoma of stomach?

Microscopic study on Case II.

Microscopic study of these sections was made, keeping in mind the ideas recently presented in the literature concerning fibrosarcoma and neurosarcoma.

Capsule: The larger tumor presenting itself on the surface of the diaphragm, as well as some of the tumors studied from the pleura and some recovered from the retroperitoneal space, show a definite capsule. The capsule is composed of longitudinally arranged fibrous tissue in which the nuclei show very little evidence of proliferation. The tumor tissue beneath is frequently separated from the capsule by a zone of dilated capillaries. (Old endoneurium or perineurium?). The tumors in the liver show no capsule separating the metastatic nodule from the liver cords. In this position, the tumor tissue infiltrates directly into the liver substance. The same is also true of the nodules in the spleen.

Tumor tissue: The structure of practically all the tumor tissue examined shows approximately same picture. There is a rather dense framework of tissue which appears like fibrous tissue which is rich in nuclei. These nuclei are oval or spindle-shape and many show mitotic figures. The fibrous tissue is made up of longitudinal bands arranged in streams or in whorls. On cross section under oil immersion, longitudinal bands are almost circular in outline. The cytoplasm stains poorly with the hematoxylin and eosin stain and round circles about the nuclei are frequently found (the unstained syncytium of Schwann?). Definite palisade structures cannot be found. In some areas, there is a transverse arrangement of nuclei within the whorls of fibrous tissue which is quite suggestive but is not definite. In some areas, there can be observed a very definite hyalinization of the arteries. In other section, there is sclerotic change with hyalinization of the tissue, probably of nuclei, and very few mitotic figures. Myxoid degeneration is not present or is not recognized. At one point, there is a round structure filled with vacuoles and a few fibrils which suggest strongly a cross section of the degenerative nerve fiber. (Degeneration secondary to pressure of the tumor or part of the tumor?).

Mode of extension: On cross section one of the larger blood vessels (vein?) at one point shows a complete filling of the lumen with the tumor growth. In the spleen along the blood vessels, can be observed 2 nerves which appear to be quite normal and probably are parts of the nervous system of the spleen. Surrounding the cross section of these 2 nerves is a prolongation of the tumor which forms a collar or sheath about these 2 structures.

Microscopic Diagnosis:

Neurosarcoma, probably arising from motor elements. (Absence of definite palisade.)

V. Meeting

Date: December 15, 1932.

Place: Intern's Lounge, 6th Floor, West Building.

Time: 12:08 to 1:50.

Program: Lipoid Nephrosis and Edema of Unknown Origin.

Present: 84.

Discussion: W. H. Thompson
I. McQuarrie
E. T. Bell
George Fahr

Theme: Very complete and worthwhile discussion of lipoid nephrosis, glomerulonephritis and general subject of edema. Lesion in lipoid nephrosis is in basement membrane of glomerulus. It has not been demonstrated in all cases examined (one or two exceptions). It is same change as in glomerulonephritis except for degree of injury. Result is leakage of protein which explains most symptoms. Some cases of lipoid nephrosis recover. Persistent albuminuria is bad sign. In first case, signs of glomerular damage can be traced in progressive stages (see red cells in urine). Condition not uncommon in pediatric practice. Infection seems to play role throughout. Mechanism of spontaneous diuresis has been observed even before proteins rise to normal level. Pitressin seems to be drug which has something to do with water balance (antidiuretic). Cholesterol and fats do not seem to be directly related to problem. Modern concepts of medicine are developed by comparing normal anatomy with abnormal pathology, normal physiology with disturbed function. We now know normal and abnormal renal anatomy and normal kidney function. The sequence of events in lipoid nephrosis shows all sequelae follow injury of basement membrane. The basal metabolic factor was discussed. If the water is subtracted (from the reading), a higher result is obtained. Many other diseases show lowered basal metabolism. The day will probably come (according to one observer) when arbitrary distinctions between lipoid nephrosis and glomerulonephritis will no longer be made. The use of Congo red in differentiating between amyloid kidney and lipoid nephrosis was advised. The dye comes through in the urine in lipoid nephrosis and is retained by

deposits in amyloid disease. Attempts to treat the edema of lipoid nephrosis by intravenous injections of gum acacia often fail because the acacia particles come through into urine. There is no fundamental difference in the blood protein findings in lipoid nephrosis, nephritis and other diseases. The colloid osmotic pressure factor is responsible for the edema, but the salt is also important and this factor can be used in the treatment of edema. The case of edema of undetermined origin was not nephrosis or any other kidney lesion. The possibility that the patient had hydrops fetus universalis and lived was suggested. Charts were shown illustrating the effect of various methods of treatment on water balance in the body. It is interesting to note that serious infections are not uncommon in lipoid nephrosis and that the patient survives in many instances only to succumb to one later on.

Gertrude Gunn,
Record Librarian.

VI. DOCTOR AND PATIENT

Francis Weld Peabody, born Nov. 24, 1881; died, Oct. 13, 1927, lived his professional life in the period of reorganization and unparalleled expansion in the medical world in which public attention was quite naturally focused on the material phases of these changes. Of the young standard bearers of the new Medicine, he became an affectionately acknowledged leader. At the time of his death he was Professor of Medicine at Harvard, his Alma Mater. His influence was widely felt and during his lifetime many honors came to him , and for a time he was astively associated with the Rockefeller Foundation. As one reads his classical essays in the little book entitled "Doctor and Patient" published after his death by his friends (MacMillan Company 1930), he appears to have been a man who was able to keep his head during the period of invasion of Medicine by the American gods, "System and Efficiency".

In his first essay entitled "The Public and the General Practitioner", he ponders long over the statement he so frequently heard, "I don't think my case was handled right." The modern layman of both the educated and comparatively uneducated class is surprisingly well aware that specific cures are not available for every disease or every symptom, and he is usually remarkably lenient in what he demands in the way of therapeutic results. His dissatisfaction has to do more with the general management of his case in which the equally important social and economic considerations are neglected because of concentration on the so-called scientific aspects. The perplexed patient often says, "What we need, is a good old general practitioner." At the same time, he chases to specialists but finds no one half as interested in him as in the scientific aspects of his disease.

The public has put its seal of approval on specialism and specialists by nature of their training actually treat disease better. Their efficiency is their greatest weakness because they are trained to look with critical eyes but only in their special fields. Patients feel lost wandering about looking for someone able to evaluate them as a whole and often search in vain. The intimate relationship between patient and physician is just as important as any other aspect of medical care.

Hospital treatment and training of physicians tends toward an impersonal attitude toward patients. We do not see him in his natural environment and frequently make no attempt to find out the manner of man we are treating but rather look at him as a case bearing some pathological label.

We fail miserably in dealing with patients who have "nothing the matter with them." Up to a certain point, i.e., as long as they are regarded as diagnostic problems they command our attention. As soon as the visiting physician assures himself that they do not have organic disease, he loses interest. Frequently referred to as a scientific approach to their problems, it represents one of the most unscientific of all practices in that we deal with half truths. When the physician walks away saying "There is

nothing wrong with her" and the clinical clerk sighs "I did a lot of work on that case and it turned out to be nothing after all" and the intern says "Mrs. Brown, you can send for your clothes and go home tomorrow" (to make room for an interesting case) then so-called scientific medicine reaches its lowest ebb.

The important part the laboratory has come to play in medical science is generally accepted and appreciated, but the relation which it should bear to clinical practice remains to be satisfactorily defined. The leading exponents of the clinical laboratory work are the large hospitals, especially the hospitals associated with teaching institutions. The new medical graduate trained in such an institution is rarely given any idea as to how to bridge the gap between the type of medicine he learns and the variety he will eventually practice. This is one of our greatest weaknesses.

When Peabody considers the qualifications for heads of clinical departments, he is at his best. Rightly he feels that the requirements for such places are rarely met by the men who fill them. The administration of such departments is much different than the duties of headships of preclinical departments. It is easy to say that administrative details should be entrusted in part to others but this never works out well in practice. It must be remembered that the primary function of clinical departments is to teach students those things that will enable them to practice the best contemporary medicine and give them a foundation on which to superimpose the advances that will come during their professional life. Intensive training should be carried on in general wards with a moderate development of specialties. The tendency for the chief to delegate ward authority to others and to "spare himself" ward rounds and ward teachings is unfortunate.

Interns should be regarded as the most important group of advanced students that we have. They come with minds, characters and personalities in the most pliable and receptive states, and can be affected in an extraordinary degree even by the atmosphere of the clinical service. Providing the chief has anything to offer here is his chance to turn out each year a group of men who will represent his ideas and his service all over the country, and affect the practice of medicine even in remote communities. This can never be done through subordinates and the chief himself should keep close to his internes. It takes time but it is very much worth striving for.

Research should always be regarded as one of the activities of teaching services. Clinical investigators are frequently forced to go back to the preclinical years for aid and assistance. Research helps to develop critical judgment and even limited experience in investigation is valuable discipline for everyone including the man who subsequently goes into practice. Clinical training however remains the important consideration of the service which clearly sees its problem. Nothing should be allowed to interfere with its proper and natural development.

The chief of the clinical department should early develop in his administration the principle of the "open door." A student or intern lurking outside may interrupt an "important" chief by the simple request "Can I have five minutes with you, sir?". He is told to come back at another time. For some that particular opportunity may represent a lost chance for the youth who may have worked himself up to a pitch where he is full of his problems and it is <u>now</u> that you can help him most. The real question in the final analysis is whether the chief should devote himself to looking after his own career or whether he ought to regard his first duty as stimulating, helping and advancing his assistants. He should of course keep some of his own work going but his real job is assisting others."

Francis Weld Peabody has a real message for all of us in his little booklet entitled "Doctor and Patient". We who have enjoyed the advantages of working in this institution during the past year should ask ourselves as the Christmas Season approaches if we have observed the "spirit of giving" to our patients and associates. Before we meet again a New Year will be with us. One of our resolutions

should be to read "Doctor and Patient" and ponder over the splendid advice derived from the rich experience of a man "whose intellectual and emotional sanity and integrity, from which wisdom, kindness and courtesy are derived were the natural endowments which brought him distinction as a human being and which gave him an importance for American medicine possessed by very few of his contemporaries."

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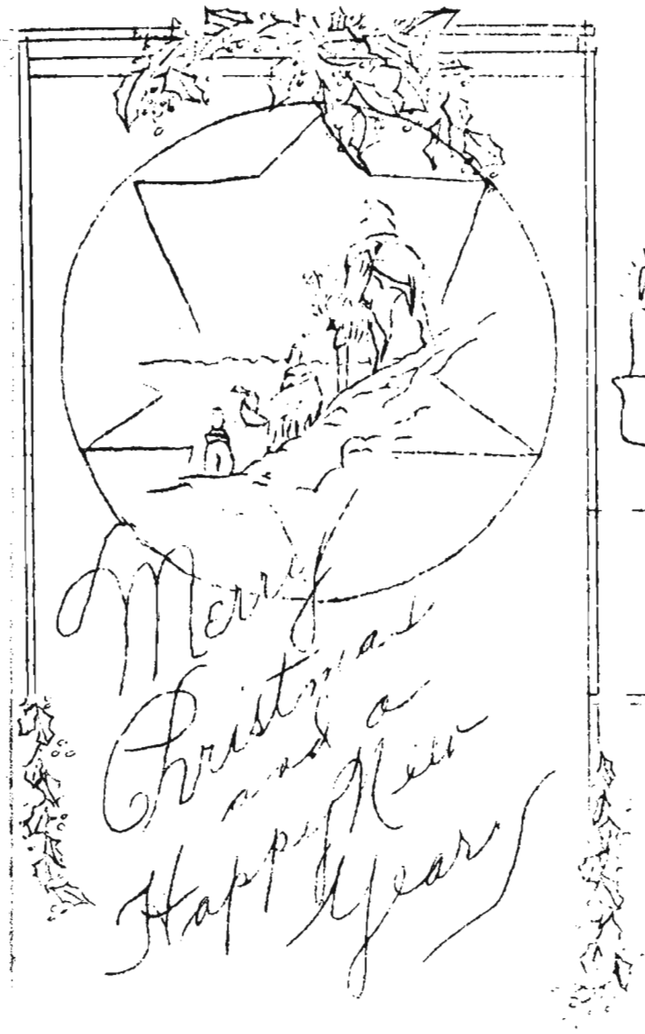

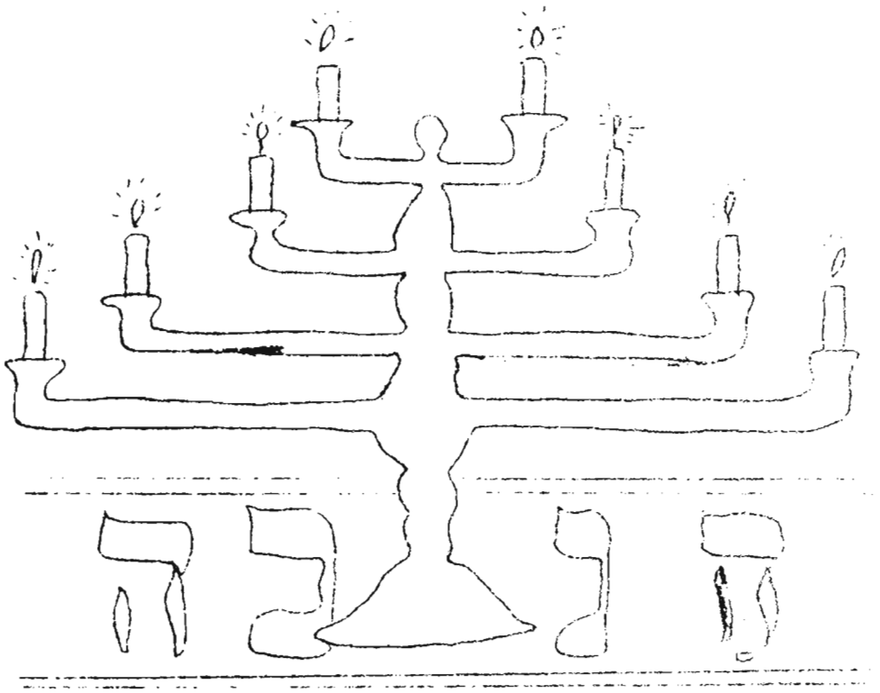

CHANUKAH GREETINGS

No meetings during the Holidays
Next regular meeting - Thursday, Jan. 12, 1933
at 12:00 Noon.