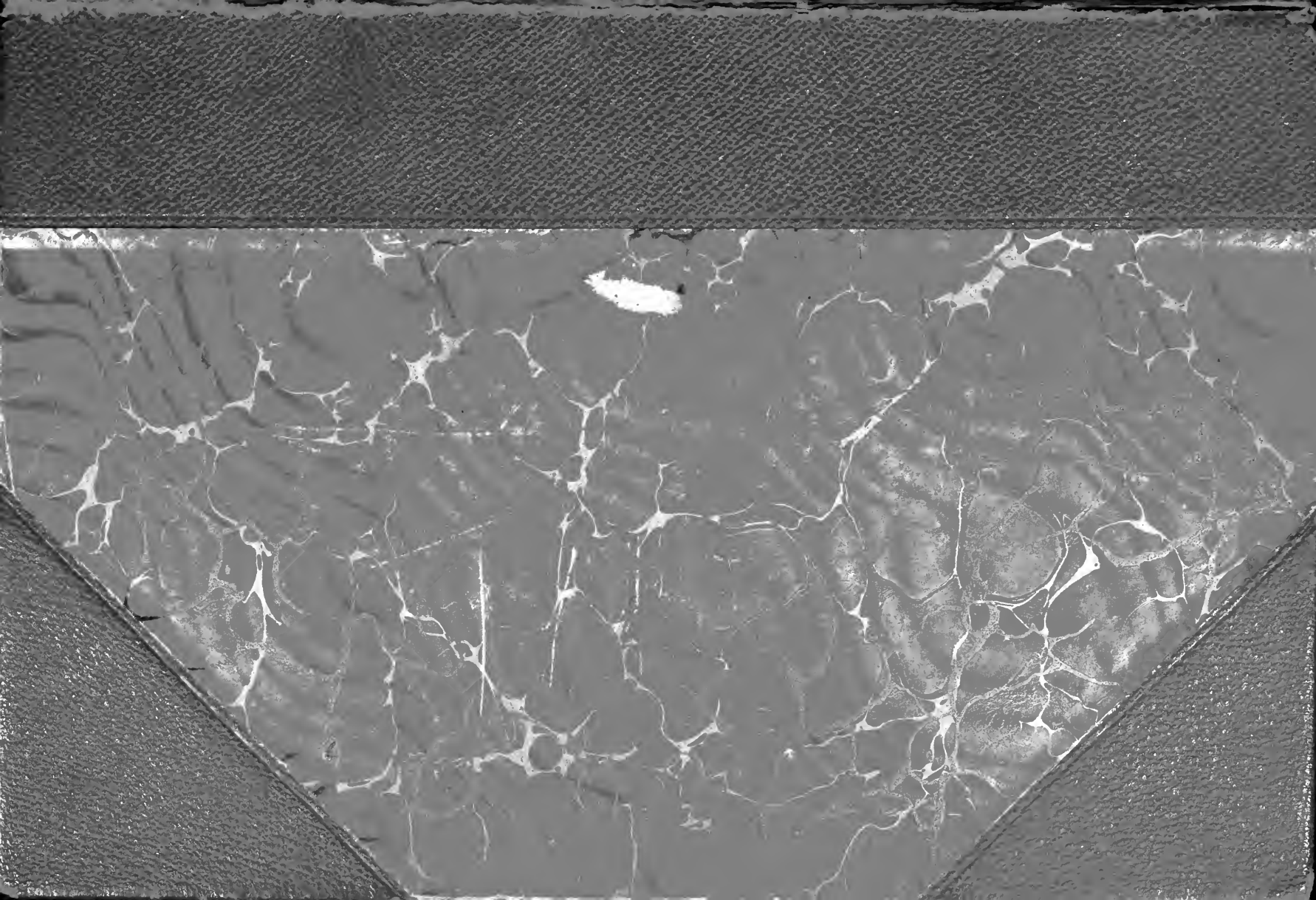

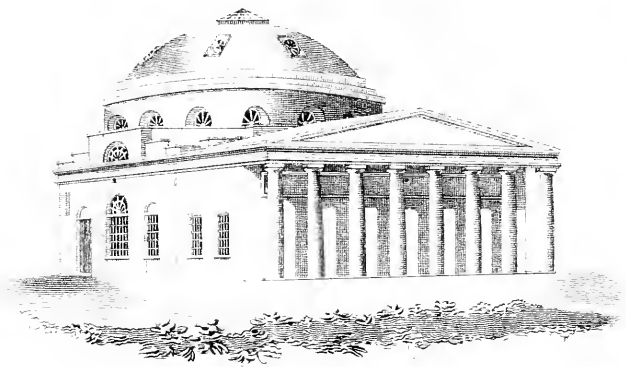

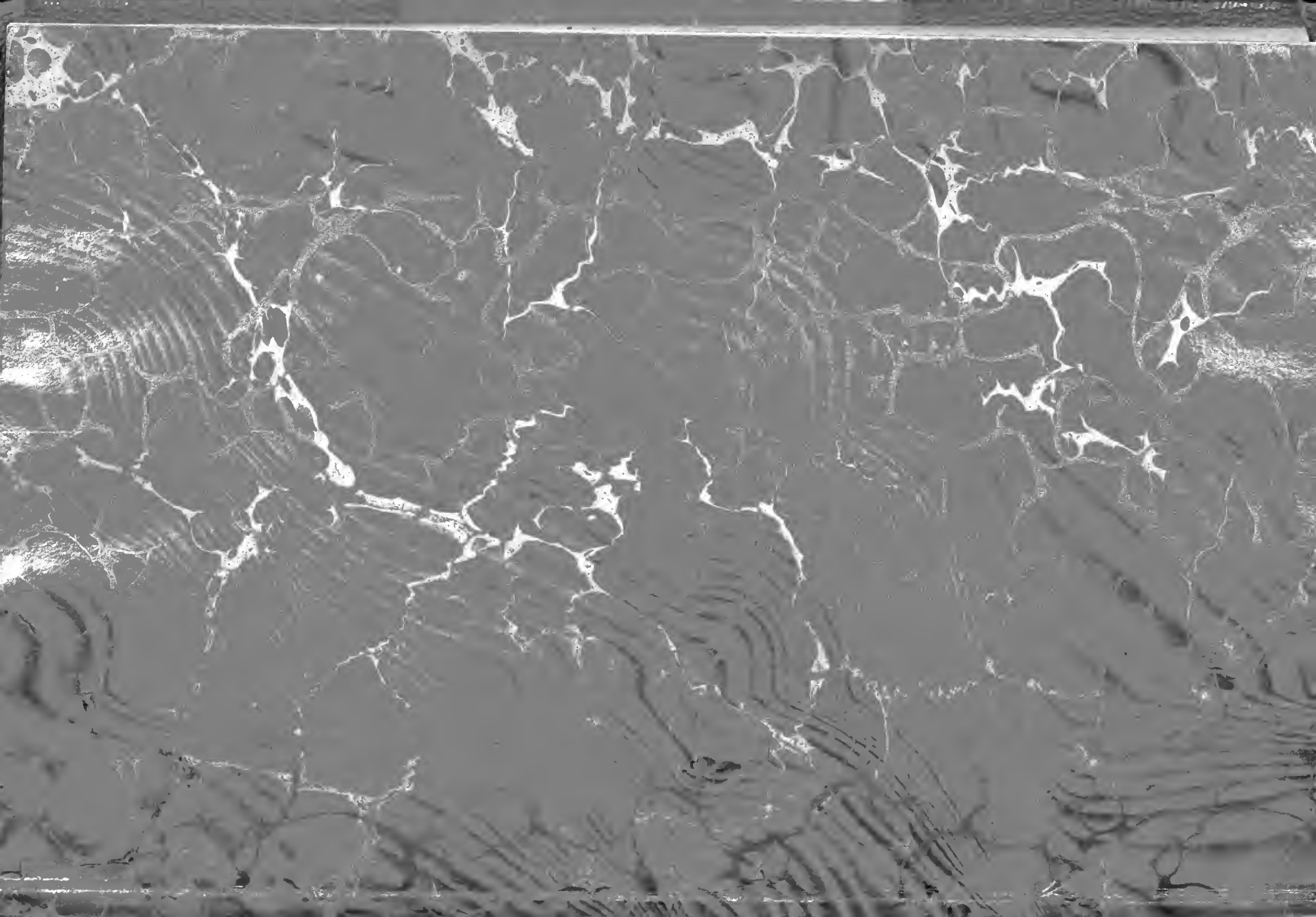

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GENITAL TUBERCULOSIS WITH INVOLVEMENT OF THE CERVIX*†

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Raynaud in 1831 was probably the first to describe tuberculosis of the cervix and reported two cases. Lisfranc in 1842 reported a similar case and, while no histological study was made, the gross description seemed characteristic. In 1851 Giel in his work *Tuberculosis of the Female Genital Organs* described the gross picture so accurately that little has been added since then. Virchow in 1853 presented a case which was confirmed by microscopic section. Between that time and 1883 a few cases were recorded from various parts of the world, two of which were secondary to tuberculosis of the lungs. In 1883 Babes found the tubercle bacillus in the vaginal secretions of a patient with tuberculosis of the cervix. He was the first person to prove definitely the cause of the disease. In 1892 J. W. Williams was one of the first, if not the first person in America to write on this condition. In an extensive review of all the literature he found sixty-eight cases. In 1919 Moore in an exhaustive search of the literature was able to collect only 170 cases from all parts of the world. Not more than twenty cases have been reported since that time and only three or four articles have been from the United States.

At the University of Pennsylvania among 15,130 gynecological specimens removed at autopsy, four showed tuberculosis of the cervix. It is interesting to note that 719 showed carcinoma of the cervix. The outward appearance is somewhat similar in both conditions.

*From the Department of Gynecology, University Hospital.
†Received for publication, May 27, 1938.

Tuberculosis of the cervix may be primary or secondary in character. The primary type is very rare and only a few authentic cases have been reported. With careful study many of these so-called primary cases will fall into the secondary class. Supposedly, the primary type is contracted by infected douche nozzles, tubercular infected semen, instruments and other means that may carry the disease into the vagina. For these reasons women who are in direct contact with tubercular patients, or who have the disease in some form, should use precaution in their hygiene. Experiments have shown that if tubercle bacilli are deposited into the normal vagina, lesions seldom occur; however, if trauma or edema exists in the vagina, tuberculous lesions may result. The immunity of the cervix is proven by the fact that not one investigator has yet artificially infected it with tuberculosis.

The secondary type is caused by direct extension from neighboring organs, the secretion which pours down from the uterus or from the blood stream. It is difficult in most cases to tell from which source the cervix becomes infected. In the genital organs themselves the spread seems to be by continuity. In 200 cases of tuberculous salpingitis examined at the Johns Hopkins Hospital the uterus was diseased in 72.5 per cent of the cases and the cervix in 3.5 per cent. Apparently the organs nearest the primary site are the next involved. This difference between 72.5 per cent and 3.5 per cent again proves the relative immunity of the cervix to the disease. In most cases of involvement of the cervix the disease has been present in the tubes and uterus. Tubercle bacilli are nearly always present in this secretion.

Forgue proved by serial sections of the uterus and cervix in genital tuberculosis that the tubercles were younger in formation the further the section was away from the tubes, which again tends to prove that extension of the disease in the genital organs is by continuity. As the secondary type is far more prevalent than the primary type we find evidences of tuberculosis elsewhere in the body, the most frequent being in the lungs.

SYMPTOMS

The symptoms of tuberculosis of the cervix alone are bleeding and discharge, which are caused by cervical erosion. Other classical symptoms of tuberculosis, if present, are the result of the disease elsewhere in the host, such as the lungs or adnexa. The discharge soon has an offensive odor because of the destruction of tissue and caseous material. The bleeding is usually bright red and spotty in

character, owing to the ulcerative nature of the lesion; however, this may be overshadowed or increased by bleeding of the disease from the uterus. Pain is usually absent; if present, it is a sign that the disease has invaded other tissues. The cervix has very few sensory nerves and pain from any condition here is rare; pain is even less with tuberculosis and it is doubtful that the disease in the cervix proper ever produces discomfort. Loss of weight, night sweats, anemia and weakness, together with other classical symptoms of general tuberculosis, may be present; however, these are not caused by cervical pathology but by the disease elsewhere in the body.

DIAGNOSIS

A definite diagnosis cannot be made by the gross appearance of the cervix, as the disease resembles carcinoma and other chronic conditions. Laboratory means must be used. A biopsy is obtained from the diseased cervix and a routine histological study of the tissues is made. This may be followed by animal inoculation. The ultimate fate and the development of the tuberculous lesion in the cervix are the same as elsewhere in the body. From the earliest tubercle consisting of a few bacilli surrounded by polymorphonuclear leukocytes, through the tubercle composed of epithelioid and giant cells to the tubercles consisting of caseous material and necrosis, the pathological course here is found to be much like that anywhere else in the body.

AGE

The average age of cases with tuberculosis of the cervix is about thirty. The decade between twenty and thirty contains about 50 per cent of the cases; this is somewhat different from the cancer age, which ranges from one to eighty years. Virgins contract the diseases as often as do married women. If a woman is examined in her twenties or thirties with a chronic lesion of the cervix which is eroded and bleeding, with a soft and slightly enlarged uterus with boggy masses in the adnexal regions and with the presence or signs of tuberculosis elsewhere in the body, secondary tuberculosis of the cervix may be suspected.

CASE REPORT

Mrs. H. N., age 27, married, entered the dispensary on May 10, 1935. The patient complained of poor health for a period of one year. She had noted during this time a loss of appetite, loss of weight and general malaise. The condition was gradually getting worse. The medical department gave her a careful examination and found the patient underweight and undernourished, with a low grade temperature of 99°F. The chest was unimpaired to physical and x-ray examinations. A final diagnosis was deferred until further study could be made.

Family history: Mother and father were living and well. One brother died from an automobile accident three years before. Two sisters were living and well. As far back as her grandfather and grandmother on both sides and up to the present time there was no history of tuberculosis.

Past history: Patient had escaped any serious illness during her lifetime; had had measles, mumps and chickenpox during childhood. She denied scarlet fever, pneumonia or chorea. She had two children living and well, age three and eight; no miscarriages and no other pregnancies; normal delivery and puerperium in both cases. No operations.

Menses: Began at the age of 14 and have always been of the normal 28 day variety, except during pregnancies. Each period lasted from four to five days with the average amount of bleeding. At times she noted slight dysmenorrhea, but this was of little consequence. No menorrhagia or metrorrhagia. During the past two months menstruation lasted seven days with an increase in flow. This was so unusual that she mentioned it.

Present history: One year ago the patient developed a chest cold. The cough was persistent for six weeks; however, there was no hemoptysis. The family doctor told her she had pleurisy and strapped her chest. All chest symptoms cleared up and she had no recurrence for the past eight months. Since then her usual good health had failed. There had been a gradual loss of appetite and weight and she felt too badly to work or take an interest in home affairs. At that time she denied any complaint referable to her lungs.

Physical examination: The patient was undernourished and underweight. She weighed 97 pounds, a weight loss from the previous year of 30 pounds. The entire body was thin, with prominent bony landmarks. The eyes were bright and sunken, with circles beneath. All mucous membranes were slightly pale. The chest was negative for pathological findings; there was no generalized glandular enlargement.

The abdominal examination was negative except for thinness. No masses or tenderness were made out. Kidneys, spleen and uterus were not palpated. There was no free fluid, no enlargement of the inguinal glands.

The external vulva was normal. Bartholin's glands were not enlarged. There was no injection or inflammation of the urethra. The vaginal opening was marital, with a firm perineum. The vaginal walls were smooth. The cervix showed a slightly healed laceration. The uterus was normal in size and position, and slightly fixed. In both adnexal regions, lateral to and behind the uterus, were palpated bilateral masses 5 cm. in diameter. There was no pain or tenderness in the adnexal regions or in manipulation of the uterus. The masses were solid and not cystic. Checking back over her history there was no suggestion of a past acute inflammation and she denied ever having had pain in the pelvis. With the speculum the cervix appeared entirely normal, except for the healed laceration. Rectal examination confirmed the vaginal findings and gave no trace of rectal pathology. No other positive physical findings were noted. Rectal temperature 99.6°F; pulse 88; hgb. 80%; red blood cells 4,200,000; white blood cells 9,500 with 68% polymorphonuclear leukocytes. Wassermann was negative.

The patient was advised to enter the hospital, but she refused and went for a vacation instead. After a period of five months the patient returned to the clinic somewhat rested and improved, and showed a gain of three pounds in weight. During this time menorrhagia and metrorrhagia had developed. She now had a daily loss of blood. Some days it was spotty in character; at other times she used one or two pads. Menses came on every two or three weeks and lasted freely for seven

days. There was no vaginal discharge. The above findings were her only additional complaints; there were no pains or discomforts. A medical examination recorded no new findings. The lungs were clear.

A pelvic examination showed the cervix free of lesions as before. The uterus was of the same size but slightly more fixed. Masses in the adnexal regions were still present without tenderness; except for a possible increase in size, no change

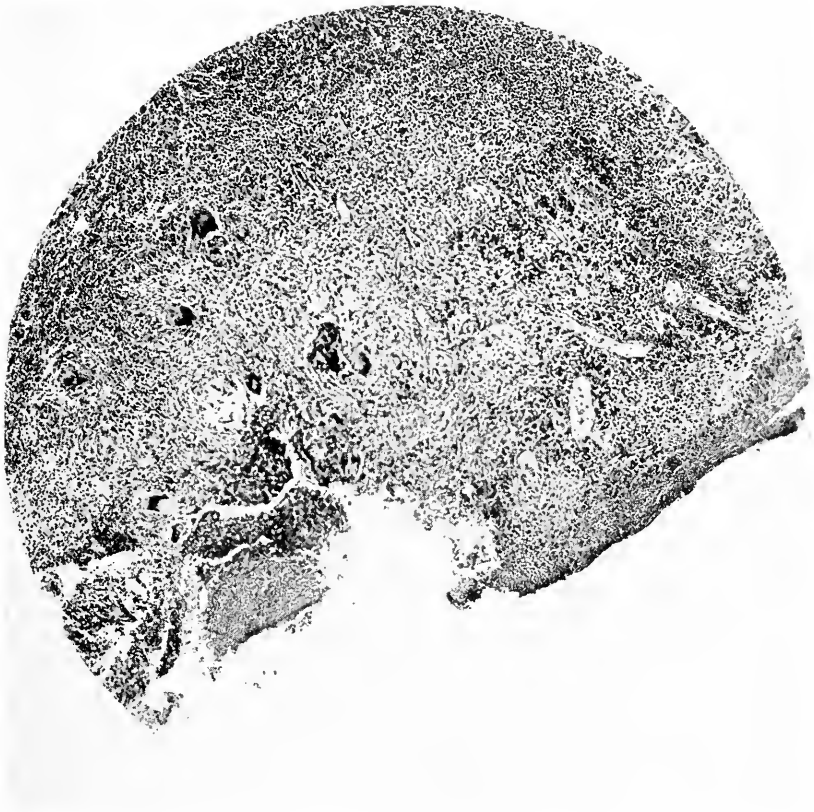

FIG. 1. TUBERCULOSIS OF THE CERVIX (LOW POWER)

This section shows erosion and ulcer formation of the squamous epithelium. A typical tubercle with giant cells scattered around is noted just beneath the squamous epithelium.

was noticed. The urine was again normal and a blood count showed no change. The rectal temperature was 99.6°F. As the patient felt improved she would not enter the hospital until her vacation at the shore was completed.

Two months later she returned to the clinic ready for some form of treatment as she was again losing weight. The vaginal bleeding had increased daily. There was no complaint other than general malaise and tiredness. During the past few weeks a vaginal discharge had started which was dark brown and with an offensive

odor. This discharge irritated the vagina. An examination showed the general findings as before, except with a definite loss of weight and anemia. On a pelvic examination the vaginal walls were smooth but somewhat tender to touch. The cervix had a roughened lesion 1 cm. in diameter on the anterior lip. This was not present at the previous examination. The uterus showed no change. The masses were still nontender and fixed.

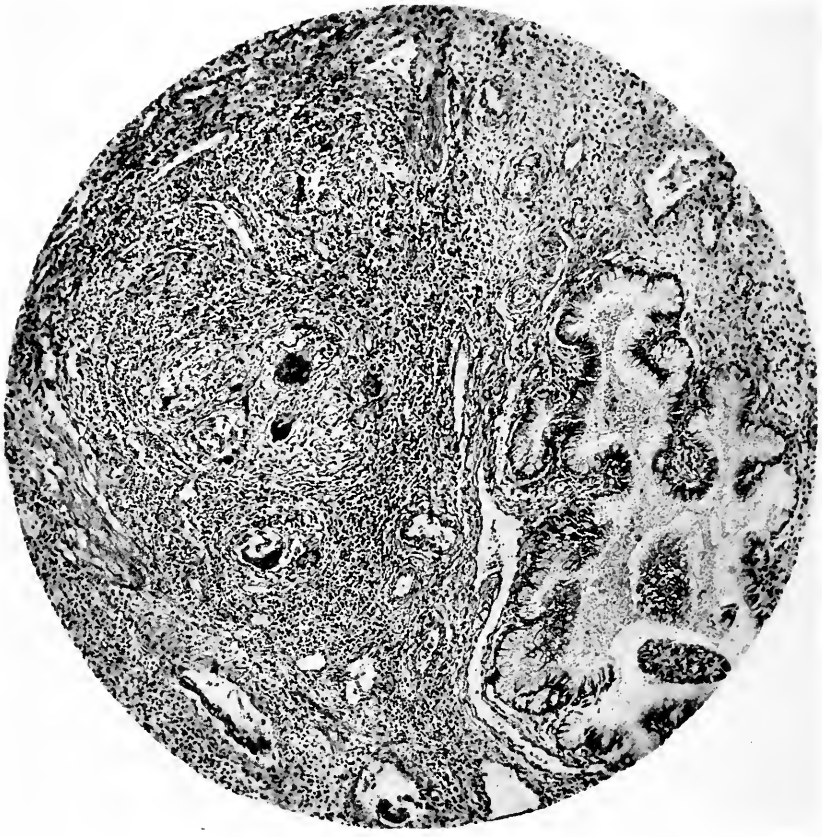

FIG. 2. TUBERCULOSIS OF THE CERVIX (LOW POWER) SHOWING NORMAL CERVICAL GLANDS WITH INFILTRATION OF THE STROMA BY TUBERCULOUS TISSUE

An area of dense round cell infiltration surrounds a tubercle containing several giant cells.

By means of the speculum an inflammatory lesion which bled easily was noticed on the anterior lip of the cervix. The general appearance was that of a carcinoma. The vaginal walls were reddened and tender to touch but no open lesion was seen. A brown discharge was present. Tuberculosis was diagnosed from a biopsy of the cervix. A suction curette was used in the clinic and pieces of endometrium also showed tuberculosis. The patient entered the hospital at once and the general physical findings were those reported above. The pulse rate was 91 per minute, rectal temperature 100°F., respiration 22, blood pressure 118/68, weight 94 pounds.

A catheterized specimen of the urine showed normal findings; red blood cells 3,500-000; hgb. 70%; white blood cells 6,500 with 76% polymorphonuclear leukocytes. The cervix was again exposed by the use of a speculum. A thick, brown, purulent discharge was found streaming from the external os. The cervix was larger than normal but firm. There was a transverse laceration. On the anterior lip was seen a velvety inflamed lesion $1\frac{1}{2}$ cm. in diameter. On this lesion a small crater was present where a biopsy was taken two weeks before; this showed no signs of healing. Schiller's test was positive. Tubercle bacilli were found in one of several smears from the vaginal secretion.

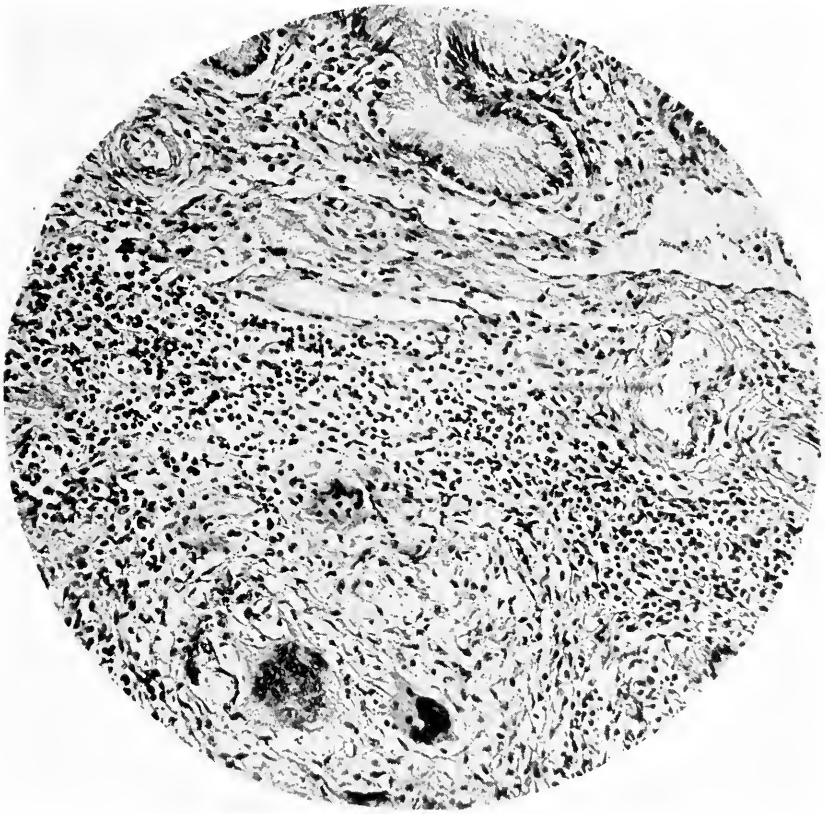

FIG. 3. A HIGH POWER MAGNIFICATION OF THE SAME FIELD

Treatment of the case: Since the patient had had a complete rest for six months and was rapidly failing in health, it was decided to operate at once and remove the involvement in the pelvis. This pathological lesion was the only one demonstrated to date. A lower midline incision was made and the peritoneum reached. This was greatly thickened and inflamed. When the peritoneum was opened, no free fluid was noted in the abdominal cavity. The entire peritoneum and all organs beneath were covered and studded with many whitish tubercles. The intestines were matted together with fine adhesions. The uterus was normal in size and posi-

tion with its peritoneal coat covered with the whitish tubercles. The tubes and ovaries were bound together on both sides and had fallen back into the posterior cul-de-sac. These masses were 6 cm. in diameter. A definite frozen pelvis was demonstrated. Behind the uterus the intestines, sigmoid, tubes and ovaries were matted together with adhesions. Both masses were covered with glistening tubercles. A panhysterectomy was done and both the tubes and ovaries were removed. The appendix was removed but except for the tubercles on the external coat it appeared normal. As far as could be seen or felt in the abdominal cavity adhesions

FIG. 4. TUBERCULOSIS OF THE ENDOMETRIUM, LOW POWER
A typical tubercle is noted among the endometrial glands

and tubercles were present. The abdomen was closed with drains in cul-de-sac. After an uneventful recovery lasting three weeks the patient was discharged.

Pathological report: Grossly, the entire endocervix was involved with the ulcerative inflammatory lesions which extended up into the uterus. The internal os was open. There was involvement of the endometrium with the inflammatory process. The mucosa was partially eroded and the tubes were greatly distended and thickened. The tubal ostium was closed bilaterally. The tubes and ovaries were matted together in masses 6 cm. in diameter. It was possible to squeeze the tubal

contents into the uterus through the patent openings. The peritoneal coat of the pelvic organs was covered with many minute tubercles.

Microscopic Report: Section of the cervix through the ulcerated lesion showed erosion of a squamous epithelium. Substituted in its place was a layer of round and polymorphonuclear cells. The stroma beneath was infiltrated with typical tubercles which consisted of an outer layer of round cells surrounding a mass of epithelioid cells. Some of the tubercles contained giant cells made up of several nuclei in a mural arrangement. Older tubercles composed of a necrotic center surrounded by round cells were noted. Supposedly the necrosis was caused by the lack of blood supply and dissolution of the giant and epithelioid cells. In places several tubercles coalesced and formed a large necrotic area. The muscular layer was composed of normal smooth muscle; no tubercles and inflammation were noted. Section of the uterus showed the same involvement as in the cervix but to a more marked degree. The mucosa was completely destroyed in areas, with round cell infiltration of the muscular coat beneath. The intact part of the mucosa was studded with numerous tubercles in all stages of development. No tubercles were noted in the muscularis of the uterus although, unlike in the cervix, signs of chronic inflammation were present. The tubes were but shells. Necrotic material filled the entire lumen. The mucosa and muscular layer were entirely destroyed. No epithelial cells were visible. Tubercles were seen in and on the serosa. The ovary and appendix on sectioning were normal with the exception of tubercles on the external coat.

Ultimate result: The patient left the hospital three weeks after operation and improved for a few months. Pelvic examinations two months and six months after operation showed no palpable return of the disease. There was no fluid in the peritoneal cavity. She refused sanatorium care and during the following six months grew progressively worse and died one year after operation of kidney involvement and uremia.

SUMMARY

This case is interesting for several reasons. Not only was the process extensive, but by following the patient for six months preoperative the secondary involvement of the cervix would be observed from one visit to another. In this case it may be safely assumed that the cervix became involved by direct extension from the tubes and uterus. The infection could not have been ascending. It was interesting to note that the pathological involvement in the cervix was more recent than in the tubes; this was borne out by finding younger tubercles in the cervix than elsewhere. The gross lesions were more extensive in the tubes than in the cervix.

The pathology in the cervix and uterus was limited entirely to the mucosa, while in the tubes the muscularis was involved.

The smear of the vaginal secretion contained tubercle bacilli; hygiene in these cases should be observed to prevent the possible spread of the disease from this source.

The patient gave no history of any past acute inflammation and the pelvic condition was entirely free of pain. This absence of pain is usually not the case in gonorrheal infection and may act as a point of differential diagnosis.

THE USE OF ANTERIOR PITUITARY-LIKE SUBSTANCE IN THE TREATMENT OF ACNE VULGARIS*†

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Acne vulgaris is one of the most common skin conditions and occurs in males and females with equal frequency. It often causes serious mental reactions on those afflicted because of the scarring that is a frequent end result. Frequently the physician who first sees the patient is partly the cause of this serious phase of the condition, because he often advises the patient not to worry as he or she will sooner or later outgrow the eruption. It is true that the condition, even if untreated, will eventually subside, usually in a matter of years, but unfortunately the disfiguring scars that may result from the lesions remain as a more or less constant blemish.

It is not the purpose of the authors to enter into a lengthy discussion of the etiology of acne vulgaris, but the subject of this work requires some mention of the supposed causes in order to determine a rationale of treatment.

Sabouraud (1) advanced the theory that the active cause of the condition was the entrance of the specific seborrheic microbacillus into the follicle, which produced an irritation and the formation of a horny plug.

Gilchrist (2) and Ketron (3) subscribed partially to the bacterial cause and from the lesions demonstrated and cultured the organism known as the acne bacillus. This organism has not been freely accepted as the principal factor in the production of lesions. An amplification of this theory is that the condition is caused by the local action of different organisms on a skin which has been prepared for their reception by diverse general physical conditions, most important of which is the stimulation of gonad activity at puberty with the associated stimulation of other glands, including the pilosebaceous glands. Gastro-intestinal factors, especially constipation, have been considered by many as playing an important part in the etiology of acne vulgaris. Ketron and King (4) found gastro-intestinal stasis in 60 per cent of the patients they examined. Indigestible articles of diet, overeating and the excessive use of stimulants have been mentioned by various authors.

*Read before the Baltimore City Medical Society, January 21st, 1938.

†From the Department of Dermatology, School of Medicine, University of Maryland. Received for publication, April 15, 1938.

Whitfield (5) has stated that in his opinion the drinking of milk and eating of chocolate are frequent causative elements. Practically all textbooks mention some foods as etiologic factors, and in the experience of the authors certain foods appeared as strong contributing elements. Menstrual disturbances often seem to be an instigating element and have been reported as such by many investigators.

The theory which has been supported by many authors is that acne vulgaris is related to hormone dysfunction. Michael (6) has shown that there is a definite relationship between the pilosebaceous system and the glands of internal secretion, and Dodds (7) has stated that "It is striking that the phenanthrene nucleus is found in both the male and the female sex hormones, which are closely related chemically. It seems more than a coincidence that the phenanthrene nucleus should be so closely connected with pilosebaceous hyperplasia and irritation."

In furtherance of this theory Stein (8) has asserted that there is an irritation of the follicular wall by the elimination of metabolic products of the gonads and of substances absorbed from the gastro-intestinal tract.

Deseau and Guillaumin (9), Rosenthal and Kurzrok (10), and McCarthy and Hunter (11) have attempted to determine the presence of the estrogenic substances in the urine and blood of a series of patients. McCarthy and Hunter, using a modification of the Frank and Goldberger test for endocrine dysfunction, found in their series of cases of acne vulgaris that 41 per cent of the males showed a dysfunction of either pituitary glands or gonads, or both; about 58 per cent were normal; 78 per cent of the females showed deficiency of the pituitary glands or gonads, or both; 21 per cent were normal. In order to prove the validity of their methods they used controls having other dermatoses, such as eczema and psoriasis, and only found abnormal function in one case.

The treatment of acne vulgaris has often given disappointing results. Authorities agree that acne vaccines, whether of the acne bacillus alone or combined with pyogenic organisms, have so far proved without value.

Concerning dietary restrictions there are two main schools of thought, one of which believes that all patients should be put on dietary restrictions, while the other group asserts that food plays no part in the production of lesions and therefore applies no dietary restrictions in its course of treatment.

Internal medication has fallen into general disrepute. Vitamin deficiency seems to play a minor rôle in this condition.

At present only roentgenotherapy has universal acceptance. It is generally conceded among dermatologists that a specified number of small doses, namely one-eighth to one-fourth erythema dose or skin unit, amounting to forty-five to ninety roentgens, given once a week for a total of about three skin units, will produce more uniformly good results than any other single procedure. The administration of larger doses may result in disastrous sequelae. Some authorities, notably MacKee and Ball (12), Michael (6) and Nichols (13), have found that recurrences are more frequent in the younger age group after a full course of roentgenotherapy, that is, in patients up to about eighteen years of age, and especially more often during the ages from thirteen to sixteen than in those over eighteen. Seemingly the pilosebaceous gland inhibition brought about by the roentgen rays sometimes becomes nullified in the lower age group before the natural lessening of sebaceous gland activity occurs. The authors are of the same opinion and do not prescribe roentgen ray therapy to patients under the age of eighteen. It is in this younger age group especially, but also in older patients who have resisted other methods, that more effective adjunct treatment is being investigated. Although the sulfur lotions and pastes frequently give satisfactory results and are prescribed in all cases during the period when roentgen rays are not being employed, nevertheless, in many instances these topical applications are seemingly ineffective or require additional therapy.

As many investigators have shown, endocrine imbalance is undoubtedly an etiologic factor in this skin eruption. A number of physicians have therefore directed methods of treatment at this presumed cause with the idea of fortifying the hormone deficiency by the parenteral administration of these substances. This method of treatment has occasioned numerous conflicting reports.

Lawrence and Feigenbaum (14) in 1935 reported the results of this form of treatment in a series of fourteen patients and stated that they obtained complete involution in eight patients, definite improvement in four and slight improvement in two. The initial dose given was 100 rat units. This was increased to 200 rat units at subsequent visits and given three times a week. In 1936 Lawrence (15) reported that in a series of thirty patients with this same therapy ten were considered cured, eleven very much improved, and in the remaining nine cases moderate improvement was obtained.

Following this report, McCarthy and Hunter in 1937 reported a series of seventy-two cases of acne vulgaris, some of which were treated with injections of endocrine preparations alone, while others received roentgen ray therapy in conjunction with the injection of endocrine substance. Most of the patients received the same dosage, 200 rat

units per dose, three times a week for three months. A comparison of these results with a group of patients who received roentgen rays alone led to the conclusion that the addition of the injection of anterior pituitary-like substance to the treatment was of no value, and it was advised only in those recurrent cases which had had sufficient roentgen ray therapy.

Williams and Nomland (16) somewhat later reported a series of thirty-nine students having acne vulgaris. About one-half of the group received injections of the anterior pituitary-like substance while the remainder were given injections of sterile water; all the students received the same local treatment. Their conclusions were that a deficiency of the pituitary-like hormones is not an important etiologic factor in acne . . . . . and, while the results show a slightly greater degree of improvement (7 per cent) in the acne of the group treated with gonadotropic substance . . . . . the difference is hardly sufficient to justify the expense and effort of intramuscular injections of gonadotropic preparations. They concluded that local treatment was most important.

In spite of the discouraging reports issued by McCarthy and Hunter, and Williams and Nomland, the continued use of this substance in the treatment of acne vulgaris led the authors to employ it in a further effort to evaluate its effectiveness in the treatment of this disease. Antophysin[1] was the preparation used by the authors because, being in powdered form and dissolved only when needed, its potency was less likely to deteriorate. Larger doses were given than those previously reported, namely, 500 rat units per dose, three times a week, instead of 200 rat units per dose. A series of twenty injections was administered to each patient. All injections were given deep intramuscularly. No other treatment was used, locally or internally, in order to avoid complicating factors. Only one patient had a local reaction at the site of injection and this was so severe as to contraindicate further injections. There were no constitutional reactions noted.

The authors' patients may be classified in three groups: First, a group of sixteen individuals who were given the injections by the referring physicians. Slightly favorable results were reported which could not be substantiated after the conclusion of their injection treatment because the patients did not return for observation. Second, a group of twelve patients who received twenty to thirty-six injections of 200 rat units each, three times a week, and who were not appreciably improved. Five of these had already been treated with roentgen

[1]The product, Antophysin, was supplied by the Winthrop Chemical Co., New York City.

rays, and two had been treated with ultraviolet and other local therapy. Third, a group of twelve patients receiving 500 rat units per dose for twenty doses, who were treated and observed by the authors at the University Hospital. In one of these patients the lesions became markedly exaggerated and more numerous, although this may have been only a coincidence. Of the remaining eleven only one showed apparent improvement throughout the course of treatment. This one exception showed some improvement after the first few treatments, but about a week before menstruation there was a marked exacerbation of the lesions and further injections failed to improve the condition.

COMMENT

In the twenty-four cases which have been supervised and observed there were no beneficial results obtained from the injections of the anterior pituitary-like substance.

The authors therefore think it inadvisable to subject patients with acne vulgaris to expensive injections, three times a week, when the weight of evidence is against the expectation of good results.

CONCLUSION

The injection of the anterior pituitary-like substance does not influence the course of acne vulgaris to any extent, and in the authors' opinion should not be used as a method of therapy.

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POLLEN COUNTS*†

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The intelligent treatment of allergic patients sensitive to windborne pollens is impossible without definite and trustworthy information regarding the concentration of these pollens in the air. Such information is valuable in controlling and interpreting symptoms during therapy and in evaluating variations in severity from season to season. This latter consideration has led the authors to believe that the annual publication of such counts for the preceding year in Baltimore might be of value to those doing similar work in this locality.

EVOLUTION OF POLLEN COUNTS

The first attempt to study the pollen content of the air as it might relate to the symptom complex, hay fever, was made by Blackley (1) in the latter part of the last century. His studies were in the main qualitative, but they demonstrated clearly that the severity of the symptoms experienced by such patients was in direct ratio to the amount of pollen given off by the offending plants.

In 1922 Scheppegrell (2) suggested a quantitative method that might be used in more closely correlating the clinical findings with the pollen content of the air. In recent years many such studies have been made, notably those by Durham (3, 4) with the result that a great amount of valuable data is now available.

Recently the Federal Government has recognized the importance of this work and in some cities is making pollen counts and publishing them with the routine daily weather reports.

UNIVERSITY HOSPITAL COUNTS

For years the Allergy Clinic of the University Hospital has been making and recording pollen counts which have been found of great assistance in evaluating the symptoms of patients.

Usually such counts are made in different sections of a given locality, such as the center of the city, sections further out in the city, the suburban and the rural areas. Because of a limited technical staff, it was impractical for the authors to establish more than one collection station. With this limitation it seemed that counts taken in the

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center of the city would give results of more general value for several reasons. The most important of these was the lack of plant life in the immediate vicinity, which would eliminate to a great extent the fluctuation caused by plants growing nearby and would give counts more truly reflecting conditions existing in the entire section.

The wisdom of the selection of a station in the heart of the city would seem to be borne out by a moderate number of control counts obtained from slides exposed in the vicinity of Towson and BelAir. The former station was on the premises of a sanatorium with extensive but carefully cultivated grounds; the latter in an outlying area containing many fields not under cultivation. The counts obtained at Towson were frequently lower than those obtained in the city while those from Bel Air exceeded the city counts, but both series paralled the counts collected at the University Hospital.

CLINICAL APPLICATION OF DATA OBTAINED

Accurate knowledge of the pollen concentration from day to day and year to year is of the utmost clinical importance.

Daily counts are of inestimable value during the course of treatment in interpreting and controlling symptoms experienced by the patient and in recognizing the onset of sensitivity to pollens previously innocuous in a given case. In February of this year several patients who were receiving injections for grass pollen sensitivity began to complain of "a cold" which seemed "almost like hay fever." Inspection of the pollen count chart revealed the sudden appearance of a considerable amount of tree pollen. Their histories and skin tests had failed to reveal such sensitivity. Coincidentally, with the disappearance of the pollen from the air about a week later the symptoms cleared up entirely. Another patient, previously sensitive to grass and ragweed pollens and with an appropriate history of seasonal symptoms, suddenly started with severe hay fever early in April. Trees were suspected in view of the high concentration of the pollen in the air and skin tests verified his newly acquired susceptibility. Early in May, as the tree pollens decreased and before the grass pollens appeared in any considerable amount, the patient became symptom free, which indicated that the former had been the offenders.

A record of the findings during previous years is valuable in guiding patients who complain that they are getting worse or others who boast they are getting well and will be entirely free in another year. Inspection of the findings of previous years may bear them out at times, or, as is more usual, it will be found that their change in symptom severity has been occasioned by a proportionate variation in the pollen

concentration during the season or seasons in question. This latter consideration has led to the publication of the pollen count record in the vicinity of the University Hospital for 1937.

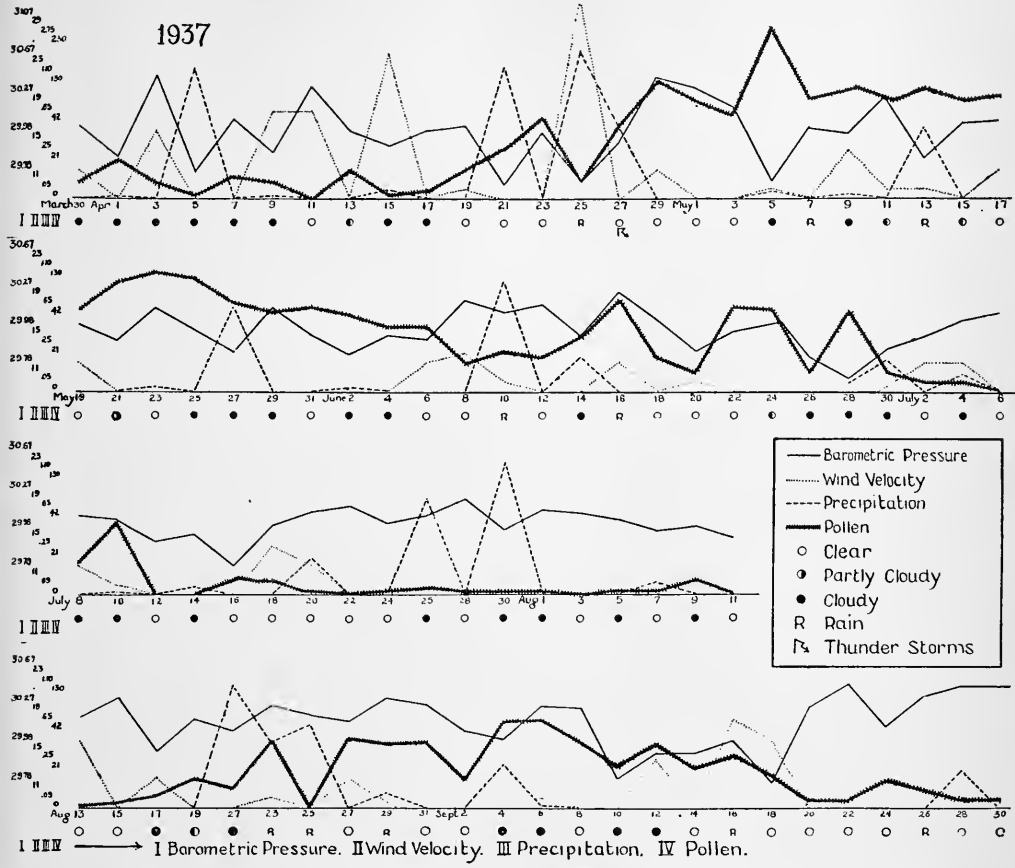

FIG. 1. CORRELATION OF POLLEN COUNTS, WIND VELOCITY, PRECIPITATION, AND BAROMETRIC PRESSURE. (DUE TO THE NECESSITY OF PRINTED REDUCTION OF THIS GRAPH THE DECIMAL POINTS IN THE BAROMETRIC PRESSURE WERE LOST IN SOME INSTANCES.)

METHOD

Glass slides covered with methyl green glycerin jelly (5) were exposed under a small metal shelter (6). The measurements devised by Durham (3) to obtain the total number of ragweed pollen grains per cubic yard of air per day were used when this work was begun on ragweed pollen during the fall ragweed season. Parenthetically, it may be explained here that these figures represent the amount of pollen found on 1.78 square centimeters of the glass microscope slide which

was exposed for twenty-four hours. This must be considered in comparing these counts with those done by other workers using one square centimeter as their counting unit.

Later, when the counts were made throughout the year, the same method was used for all seasons. This was done despite the fact that it did not comply strictly with the formula suggested by Scheppegrell.[1] The authors are interested in changes in concentration rather than in the absolute count of individual pollens, as the latter, in their opinion, has little clinical significance. Also, no attempt was made to do differential counts as this is an extraordinarily difficult procedure even for specially trained botanists.

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[1] "Number of Pollen in the Air: The number of pollen dropping on a given surface, e.g., a plate, depends only on the number of pollen per unit volume of the air, and the velocity of fall of the pollen grains.

"This means that unless the plate is inclined at an appreciable angle, e.g. 15 or 20 degrees, with the direction of the wind near the plate, the number of pollens dropping on the plate is independent of the wind velocity, other factors, such as the number of pollens per unit volume of air, being constant. The number of pollen in the air, however, bears a direct relation to the velocity of the wind.

"If the pollen grains fall with a velocity of v feet per second, and there are in the air n per cubic yard, the total number N falling on a square centimeter in t hours is given by the formula:

$$N = 0.143 \times n \times v \times t$$
$$n = \frac{7 \times N^{(2)}}{v \times t}$$ "

THE CHALLENGE OF CARCINOMA OF THE LUNG*

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One of the most discouraging problems confronting the physician is the treatment of patients with carcinoma. Although a great deal has been accomplished through earlier diagnosis, more radical surgical removal of accessible growths and improvements in the technic of radiotherapy, the end results are far from satisfactory.

The results of treatment are particularly discouraging when the malignant growth involves the stomach or breast, areas which are accessible to the surgeon and afford opportunity for radical surgical treatment. The frequency with which malignant growths occur in most organs of the body has changed very little during the past fifteen years. In a few organs improvements in diagnosis have increased the antemortem recognition of certain lesions, but the number observed at postmortem examination has remained practically stationary. A notable exception to this, however, is carcinoma of the lung.

Prior to 1920 primary malignant disease of the tracheobronchial tree was rarely encountered at postmortem examination and was infrequently diagnosed during life. Since that time there has been a striking increase in the incidence of primary carcinoma of the lung and at the present time this lesion comprises about 10 per cent of carcinoma occurring in all parts of the body. Although it is true that the more frequent antemortem recognition of this lesion has been due in part to improvement in bronchoscopic technic, yet the increase in the number of cases which are observed at postmortem examination cannot be explained on any basis other than an actual increase in the incidence of the disease. This remarkable increase in the occurrence of carcinoma of the bronchus is unique and brings with it to the physician the responsibility for early diagnosis and palliative or curative treatment.

Along with the increased incidence of malignant tumors of the respiratory tract has been a corresponding increase in the occurrence of a type of tumor which has been described variously as "adenoma" or "carcinoid" tumor of the trachea or bronchus. Many of these tumors are indistinguishable pathologically from carcinomatous growths, but show differences in their clinical manifestations. It is likely that ac-

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tually they are adenocarcinomata of a lower grade of malignancy than the growths usually observed in the air passages.

In discussing the problem of diagnosis of carcinoma of the tracheobronchial tree it is useless to consider symptoms and signs which are late manifestations of the disease such as anemia, cachexia, metastasis to cervical lymph nodes and distant organs, and pleural effusion. When such developments have appeared the disease is too far advanced to hope that the employment of any type of therapy will produce beneficial results. In a few cases these late evidences of the disease appear before the lesion in the lung has produced symptoms. In the majority of instances, however, certain signs and symptoms appear early in the disease and make it possible to recognize the lesion at a time when removal of the growth can be accomplished.

The most significant early symptom is an irritating cough, sometimes dry, at other times accompanied by mucus or mucopurulent sputum. Frequently small amounts of blood may be expectorated. Stridor may also be present, but disappears as the growth occludes the lumen of the bronchus. Dyspnea and a sense of discomfort in the thorax are other early symptoms.

Only one physical sign is of value in differentiating early carcinoma of the bronchus from other nonmalignant pulmonary lesions and that is suppression of breath sounds over the area representing the distribution of the bronchus involved by the disease without a corresponding impairment of the percussion note. Unless the malignant growth is located in the left bronchus, roentgenoscopic study will usually reveal evidence of a lesion but it cannot be distinguished from the various inflammatory processes which may involve the hilum areas. The only method whereby an accurate early diagnosis can be made is bronchoscopy with the removal of tissue from the wall of the bronchus for microscopic examination.

In certain early cases an ulcerating lesion which is suggestive of carcinoma may be observed in the bronchus, but more often the gross appearance of the lesion is such that a diagnosis of carcinoma cannot be made without microscopic study of the tissue. The growth may not be visible on bronchoscopic examination, but mucus or bloody secretion from a small bronchus justifies the introduction of forceps into the bronchus with the removal of tissue for microscopic study. Slight infiltration in the wall of a bronchus, with reduction in the size of its lumen in association with suspicious symptoms and diminished breath sounds over this area, demands the removal of a specimen of tissue for examination.

An accurate diagnosis of carcinoma of the lung is not always pos-

sible by the methods which have been described and in such cases the question of exploratory operation should be considered. When results from surgical removal of these growths have become more satisfactory, exploratory operations will be employed more frequently. At the present time it would seem advisable to assume that any lesion in the lung is inflammatory unless it can be proved malignant by bronchoscopy.

Treatment of patients with carcinoma of the trachea and bronchi varies with the type and location of the lesion which is encountered on bronchoscopic study. Surgical removal of a malignant tumor is manifestly impossible if it involves the trachea or a main bronchus at the bifurcation of the trachea. In these cases surgical diathermy and radiotherapy are the only methods of treatment which can be employed. When the lesion involves a bronchus which is sufficiently distal to the bifurcation of the trachea to permit successful resection of the growth, operation should be recommended if the tumor is a squamous celled type and the patient's condition is otherwise satisfactory. Patients with squamous celled carcinoma of the bronchi are not benefited by diathermy nor is the growth retarded by radiation.

Patients with so-called "carcinoid" tumors should be treated with diathermy and radiation. Curettement of these tumors has been advised by some workers but the author's experience has been that they are quite vascular and that instrumentation is associated with considerable bleeding. Tumors of the adenocarcinomatous type frequently are influenced favorably by radiotherapy and unless a patient with this type of tumor seems particularly well suited to operation, the more conservative form of treatment is advisable.

In the patients with hopelessly advanced carcinoma of the lung the use of massive doses of roentgen rays is unwise, as beneficial results cannot be obtained and patients are made more uncomfortable by the treatment. Aspiration of pleural effusion should be delayed as long as possible for fluid accumulates almost as rapidly as it is withdrawn from the thorax.

The problem of successful treatment rests on the basis of early diagnosis. Improvement in methods of radiation, local removal of growths, and the increased ingenuity of the thoracic surgeon in reducing mortality following lobectomy and pneumectomy are indeed a challenge to the internist. He should think of all chronic lesions in the lung as potentially malignant and should employ every faculty at his command in an effort to diagnose malignant pulmonary lesions at a time when curative treatment is possible.

FOR AS A MAN THINKETH*

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Heretofore I have always been among the majority who have criticized speeches made on this occasion, nay, I have even assailed them. Now I am about to do that which I have never been able to envisage. Let me comfort you promptly by saying that I still remember my previous attitude, so I will not detain you long.

At this important stage in your medical life let me, as a fellow student with a few year's more experience, give you some suggestions. At the outset may I remind you of the words that so often help me, those of Dr. William Gull of thyroid fame, who one hundred years ago said, "We have no system to satisfy, no dogmatic opinions to enforce. We have no ignorance to cloak for we confess it." I hope you have always found this teaching practiced during the four years of exposure to many teachers. I am certain you were always presented with both sides of every subject since there is no finality in medicine. Henceforth, you must in a great measure determine your own course of action in every case presented to you. Your knowledge of disease and its cure is the result of a special kind of training which prepares you to practice medicine. There is another kind of learning, without which you will not go very far. I refer to the knowledge of yourself, of the endowments of your head and heart which may enhance whatever professional information you possess. This knowledge is what is known as character.

Let me tell you now that most of your energies will be spent not only in giving medical advice, but in befriending the sick and suffering and helping those who cannot help themselves. Some you will cure and here and there you will save a few from death. Despite the fact that some favor group practice and regimentation in medicine today, the relationship between patient and doctor is still a personal one—it should remain a personal one. Your code of honor will be weighed carefully by your patients. Your words and actions will influence the course of many people and your example should be a beacon light for them.

One of the foundation stones of character is charity in its broadest sense. Give not only of your possessions but of yourself. The law

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of the higher life is only fulfilled by the love which is charity. As Saint Paul said, "Knowledge puffeth up but charity edifieth, and if any man think that he knoweth anything he knoweth nothing yet as he aught to know charity." No sin on your part is greater than uncharitableness toward your patient and your fellow practitioner. The brotherhood of man and the forgiving of enemies have been expressed by the ancients but they were never more clearly and nobly stated than in the reply given in the New Testament to the question "Who is my neighbor?" You will probably recall that "A certain man went down from Jerusalem to Jericho and fell among thieves which stripped him of his raiment and wounded him and departed leaving him half dead. And by chance there came down a certain priest that way and when he saw him, he passed by on the other side. And likewise a Levite when he was at the place came and looked on him and passed by on the other side. But a certain Samaritan as journeyed came where he was and when he saw him he had compassion on him and went to him, bound up his wounds pouring in oil and wine and set him on his beast and brought him to an inn and took care of him.

"And on the morrow when he departed he took out two pence and gave them to the host and said unto him 'Take care of him and whatsoever thou spendest, more when I come again. I will repay thee.'

"Which now of these three, thinkest thou, was neighbor unto him that fell among the thieves? And he said he that showed mercy on him."

There is no higher mission than treating God's poor. Fundamentally, our happiness should be in doing our work well. Even during this era of depression I have not seen any of my colleagues as poverty-stricken as many of my hard-working patients. The cost of medical care to the patient is certainly one of the causes for the advent of State medicine. Without a doubt the fees of specialists are frequently too high and, furthermore, there is usually great unfairness in the disproportion between medical and surgical costs. Unfortunately, the laity is still impressed with the dramatics of an operation and the profession has done little to moderate the fees of surgeons. Do not mistake me—I am firmly convinced that a laborer is worthy of his hire, but I have always found it better to follow the principle "It is more blessed to give than to receive." It is true that few virtues have been more widely praised by moralists than generosity. Every practical treatise of ethics tends to increase our sensibility of the distress of others and to relax the grasp of avarice. But against the many who have enforced the duty of giving it is surprising that,

as Goldsmith says, "There are few to inculcate the ignominy of receiving and to show that by every favor we accept, in some measure we forfeit our native freedom and a state of continual dependence on the generosity of others is a life of gradual debasement." Were men taught not to expect generosity with the same force of reasoning and exhortation that they are instructed to confer it, we might see every person in society doing the duties of his station with cheerful industry and not with sullen disappointment. Ill-considered generosity is misplaced and injurious. It may make a man worthless. A life of independence is a life of virtue. It is this quality which fits the soul for every generous flight of humanity, freedom and friendship. While to give should be a pleasure and duty, "Begging," in the words of Jesus ben Sirach, "is sweet in the mouth of the shameless."

Even more than in material things, charity in its broadest sense is necessary in our relationship with our fellow man. The work of a colleague, a laboratory or a school should not be unjustly belittled. Who is there among us who does not need to consider that counsel of perfection, "Judge not according to the appearance but judge righteous judgment." Here I think we need an honest heart plus a moment's reflection on our own mistakes. It is not only at autopsies that we find our mistakes—such experiences keep us humble.

No individual or university possesses a monopoly on intelligence. Nevertheless, you frequently see a narrow attitude taken by alumni, particularly in the filling of appointments. Members of the faculty should be picked with the most zealous regard to fitness, regardless of the school from which they were graduated. Inbreeding hurts colleges as well as cattle. The fate and the glory of an institution rest on the ideals cherished and taught by its teachers and graduates. The relationship of teachers to the student is very important. The successful teacher is not like the oracle of old who refused to function on a fraternal basis. The teacher should never forget that he is an advanced student, he may be only a little more advanced, and the relation of comradship should obtain. A successful teacher often is surpassed by his pupil.

Members of the graduating class, after you begin practicing I urge you to make every effort to keep abreast of medical progress. The greatest satisfaction you will get from medical practice results from keeping up with medical progress and failure to do this is not only your loss but, of greater importance, the patient's loss. You should attend medical meetings regularly, whether they be city or county meetings, and, as frequently as you are able, the big national meetings. Exchange notes with your fellow practitioners and take stock of

yourselves. I can assure you that if you have the welfare of your patients at heart you will eagerly await each meeting in order to learn something that may solve your many problems. In addition you will overcome those dangerous foes, apathy and indifference, which are bred from self-satisfaction.

Some things you have been taught will be discarded in the future, even in the near future. For the sake of your patients keep abreast of the development of medicine. Aside from the information you will get, your culture as a physician will become cosmopolitan, not provincial or national. It will keep your mind always frankly open and friendly to the medicine of other peoples; you will be free at all times from prejudice and from a self-satisfied feeling of superiority. Unfortunately, a pernicious attitude of nationalism is rampant in the world today. Ignorance is at the root of it. Where is there such a thing as a pure race today? And if such did exist, who would wish to belong to a group which would lack the many good qualities possessed by other mixed races? To utter such fanatic shibboleths as, "My country, right or wrong," and "100 per cent American," is to deny the brotherhood of man, the golden rule of Jew and Gentile. The Aesculapian Temple has given way to the modern hospital and the priestly rôle of the physician has diminished, but bequeathed to doctors is a feeling of brotherhood which the limitations of language and country should never efface.

So far we have considered development of your career from the medical side only. There is another side you must develop—culture. The earliest pictures we have of scientific physicians in the modern sense are cultured Egyptian and Greek gentlemen. Whether you practice in the exclusive suburb of your town or in the slums, you should not be satisfied to have only professional learning. Culture counts for more in medicine than in any other profession and the general practitioner needs it most. The broader and freer a man's general education is, the better practitioner he will be; few illnesses are cured by specifics; more patients are helped by the sympathy of cultured physicians.

Professional work of whatever sort tends to narrow the mind and limit the point of view. Although medicine is an exacting mistress, I doubt if ever some portion of a man's spirit is not free for outside interests. I see many of my comrades practicing early and late and never taking any time to escape the narrowing influences of a routine life. It is better to spend some time pursuing a serious avocation.

In your springtime of life cultivate the great minds of the world through their works. Spend a small part of your time reading a few

chapters of the great saints of the humanities. My favorites are the Bible, with such great teachers as Job, who reached the lofty height of disinterested religion; Isaiah, the greatest prophet of Israel, who with Amos magnificently exposed the intolerable wrong of human injustice; Christ and Saint Paul, who exemplified that the just shall live by faith. To these I would add the anonymous ancient Egyptian who spoke as a modern in the "Eloquent Peasant;" the Greek tragic artists, Aeschylus, Sophocles and Euripides, who saw in the world a place where "beauty is truth and truth beauty"; the great Shakespeare; the humanists of the middle ages, then Thomas Browne and Montaigne, and later Ian Maclaren's "Beside the Bonnie Briar Bush." Cultivate the glorious past but keep an open mind on the problems of the present. No biological problem should ever be closed. All the views of man's destiny have been altered since we have accepted evolution. Even today the ghost of the theory of spontaneous generation cannot quite be laid. Each age will interpret life in those terms which are most satisfying to it. You will encounter many counsels, specialized knowledge, carefully tailored personalities and intellects so highly educated that you will be bewildered. There is really no one, right answer. When we hear and see so many proclaim their dogmas we may only guess how tolerantly God will smile. What a remarkable sense of humor the Lord must have! Comfort yourself with the fact that it is not yet clear for whom this world was made. Remember that it suits the convenience of the insects wondrous well and furnishes an environment to which they are perfectly adapted. In all this dogmatic confusion, realize that it is quite amateurish and unscientific to ask more of a theory or a system of thought than that it shall excite the search for deeper truth. Don't forget that medicine, too, is in a state of flux. The dogmatisms of each age wear out. Statements of so-called absolute truth grow thin. The heterodoxy of one generation is the orthodoxy of the next.

The dignity of man is a subject that has always been a favorite theme and mankind has ever been prone to praise human nature. From what I have seen, however, men appear more apt to err by having too high rather than too low opinions of themselves. By attempting to exalt their place in creation they diminish their real value to society. Make it your practice to study every patient, not only from the organic but also from the psychological point of view. You may not always be able to correlate the two findings. Perhaps that may be the result of our present lack of knowledge. Remember that our attitude toward disease is changing. It is apparent today that disease is not alone what happens after various agents invade us.

You know that it requires more than pollen to produce asthma, more than pneumonia germs to produce pneumonia. That other factor is the reaction of the patient. Beside his defenses of immunity he has a psyche. How great a rôle this plays no one can say, certainly no one can practice medicine very long before learning how much easier it is for some patients to recover who want to get well and who have so-called faith in their physician.

From our scheme of things we have dismissed the fate that spins the thread and cuts it. Human nature is the great enigma; the mystery of life is the mystery of man's self and the conflict within him. It is not only what has been done to him but what he has done to himself. The fault lies, not in the stars, but in ourselves.

One delightful way to study the human being is to travel. You may not be able to do this in your first years but let me urge you not to delay traveling until your increasing waistline forces you to stop at swank hotels and you avoid the folks of the country in which you are sojourning. Traveling also shakes off national prejudices. It is to be regretted that we think ourselves natives of a particular spot or members of one petty society and that we fail to consider ourselves members of the society comprehending the whole human race. Do you know the reason for the scriptural injunction to love your neighbor was that the Hebrews were strangers in a strange land—Egypt? "But the stranger that dwelleth with you shall be unto you as one born among you, and thou shalt love him as thyself; for ye were strangers in the land of Egypt; I am the Lord your God." The measure of civilized culture and godliness is how we treat our neighbor, and it has been my good fortune to have found it practiced in many foreign lands which I have visited.

To the service of medicine you may all contribute something. Like every science, it embraces many facts, great and small, and every ant's grain of knowledge enriches the common fund. However, unlike the science of medicine, the art of medicine comes only after long practice and many failures. As a cultured family doctor, and there is no higher calling, you will have all the traditional rewards that come from the personal relations of the old-time doctor, with a high standing in the community and the confidence and affection of your patients. Continue to make yourself worthy of that trust. If you play the game fairly, you will group your cases as: certain cases, uncertain cases and mistakes. Don't deceive yourself about your diagnoses and treatment. In this way only will you make real progress and perhaps add new knowledge.

After five to ten years of general practice and with due amount of

training you may be led to specialize. I emphasize general knowledge of disease gained from practice and adequate training because these are so frequently lacking in specialists. A loss of perspective occurs from too limited effort in a narrow field. You may develop a desire to teach and to share your knowledge. Then the information derived from your patients, plus an interest in experiment, will make you of value to a school. With a sense of obligation to your predecessors you may become an investigator and contributor.

Above all, care for human beings and human things, and never stand aloof from them or lose the common touch. Like the prophets of old, you must suffer for mankind and be preoccupied with the problem of pain. Our world is made up of individuals, each with a great capacity for suffering. You must not develop a sense of detachment from this suffering, regardless of any philosophy. In addition to suffering you will see injustice, that most sorrowful thing on earth, masquerading frequently as convention. Injustice brings to mind Isaiah's indictment against suffering—the most magnificent ever delivered: "Everyone loveth gifts, followeth after reward judgment is turned away backward, justice standeth afar off, truth is fallen in the streets." And following, this in words as beautifully tender as any ever spoken, he plumbs the depths of mercy. "Come now, let us reason together. He has sent me to bind up the brokenhearted, to comfort all that mourn, learn to do well, seek judgment, relieve the oppressed, judge the fatherless, plead for the widow. Though your sins be as scarlet they shall be as white as snow." Bear in mind, men will remember and come to you for the sympathetic understanding of their own suffering selves in a strange world of pain.

Finally, let me refer you to the advice of a man who lived about 600 B.C. His world was the small circumscribed earth known at that time and thought to be the center of the universe. Knowledge of the earth grew and we learned that our earthly mansion, this planet, rolls on its preordained course through space. This whole planetary entity pulsates and breathes with the rhythm of tides day and night and unfolds the titanic epic of the geologic ages. Today with the telescope we have extended the boundaries of the universe, and with the spectroscope and other instruments we have learned something of what is going on in the interstellar spaces. Despite all this knowledge and grandeur and for the tranquillity of your soul I can think only of the answer which this man, Micah, the prophet, gave to the question: "Shall I come with burnt offering and sacrifices before the Lord? No, the Lord doth require of thee but to do justly and to love mercy and to walk humbly with thy God."

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THE BIBLE.

ALUMNI ASSOCIATION SECTION

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The names listed above are officers for the term beginning July 1, 1938 and ending June 30, 1939.

PRE-COMMENCEMENT EXERCISES

JUNE 3, 1938

The Lyric, Baltimore

ORDER OF EXERCISES

I. THE PROCESSION: *The Coronation March*, Meyerbeck; *Pomp and Circumstance*, Elgar.

II. THE INVOCATION: THE REVEREND JAMES H. STRAUGHN, D.D., North Baltimore Methodist Protestant Church.

III. GREETING: H. C. BYRD, B.S., LL.D., *President, University of Maryland.*

IV. THE ADDRESS: L. A. M. KRAUSE, M.D., *Associate Professor of Medicine, University of Maryland.*

V. INTRODUCTION OF MEDICAL COUNCIL: By J. M. H. ROWLAND, M.D., Sc.D., LL.D., *Dean, School of Medicine.*

ARTHUR M. SHIPLEY, M.D., Sc.D., *Professor of Surgery*
J. M. H. ROWLAND, M.D., Sc.D., LL.D., *Dean of the Faculty*
HUGH R. SPENCER, M.D., *Professor of Pathology*
H. BOYD WYLIE, M.D., *Professor of Biological Chemistry*
CARL L. DAVIS, M.D., *Professor of Anatomy*
MAURICE C. PINCOFFS, B.S., M.D., *Professor of Medicine*

FRANK W. HACHTEL, M.D., *Professor of Bacteriology*
EDUARD UHLENHUTH, PH.D., *Professor of Anatomy*
CLYDE A. CLAPP, M.D., *Professor of Ophthalmology*
JOHN C. KRANTZ, JR., PH.D., *Professor of Pharmacology*
WALTER D. WISE, M.D., *Professor of Surgery*
J. MASON HUNDLEY, JR., M.A., M.D., *Professor of Gynecology*
WILLIAM R. AMBERSON, PH.D., *Professor of Physiology*
LOUIS H. DOUGLASS, M.D., *Professor of Clinical Obstetrics*

VI. INTRODUCTION OF GRADUATES AND THE AWARD OF HONORS: DR. J. M. H. ROWLAND, assisted by DR. H. BOYD WYLIE.

CLASS ROLL

Milton G. Abarbanel
Daniel Jerome Abramson
Willard Applefeld
Max Baum
Robert Alexander Bonner, Jr.
Melvin Nachlas Borden
John Zimmerman Bowers
Stanley Edward Bradley
Wilbur Starr Brooks
Manuel Brown
John James Bunting
Timothy Andrew Callahan, Jr.
Burton Chance, Jr.
Hilliard Cohen
Harold Leo Colleran
John Francis Coolahan
Donald Dwight Cooper
Jaime Luis Costas
Robert Clifford Crawford
Michael Joseph Dausch
Willliam Anthony Dodd
Victor Dolfman
Arnold Herman Eichert
Aaron Feder
Lester Irving Fox
Samuel Louis Fox
Louis Calvin Gareis
Joseph Mathias George, Jr.
Samuel Gertman
Harry Gibel
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Louis E. Goodman, Jr.
Sylvan Chauncey Goodman
Florence Hazel Gottdiener
Sidney Robert Govons
Frederick Lewis Graff
William Lehman Guyton
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Sidney Harris
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John Ralph Horky
Francis Joseph Januszeski
Milton Aaron Katz
Harry Kelmenson
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Gerald Independence Kurtz
Celeste Constance Lauve
Milton Layden
Luther Albert Lenker
Morton Hirsch Lipsitz
Hilton Luis Lopez
William Randolph Lumpkin
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Royston Miller
James Haight Miniszek
Leonard Carl Molofsky
Samuel Novey
Laurence Caldwell Post
Geraldine Kennedy Powell
John Rizzolo
Paul Roman
Juan Antonio Rossello
Henry Rothkopf
Bernard Joseph Sabatino
John Ferdinand Schaefer
Sidney Scherlis
Robert Abraham Schlesinger
Maurice Jacob Schmulovitz
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Harry Fletcher White, Jr.
Samuel Cottrell White
Albert Sidney Winer
Theodore Englar Woodward
Richard Walker Worthington, Jr.
Michael Wulwick
Kennard Levinson Yaffe

Honors

Stanley Edward Bradley—*University Prize Gold Medal*

Certificates of Honor

Aaron Feder — Morton Hirsch Lipsitz
Sidney Harris — Emanuel Sprei
Theodore Englar Woodward

The Dr. A. Bradley Gaither Memorial Prize of $25.00 for the best work in genito-urinary surgery during the senior year—William Lehman Guyton

The Samuel M. Shoemaker Prize of $25.00 for the best essay on "Milk in Relation to Public Health" written by a student in the senior class—Jerome Kotleroff

VII. Administering of Hippocratic Oath: Dr. Charles Reid Edwards.

VIII. Benediction: The Reverend William H. Litsinger, D.D.

IX. The Recession: *March of the Priests*, Mendelssohn.

The Marshalls

Chief Marshall, T. B. Aycock, B.S., M.D.

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John E. Savage, B.S., M.D. — Harry V. Langeluttig, A.B., M.D
Harry C. Hull, M.D. — W. S. Love, Jr., A.B., M.D.

THANKS

The Board of Regents, the President of the University, the Faculty of Physic, the Board of Directors and Officers of the Medical Alumni Association wish to express through the pages of the Bulletin their sincere appreciation to the visiting alumni for their generous support in making this commencement a success. The interest and loyalty manifested by the alumni were a source of great gratification to the committee in charge of arrangements.

The following alumni registered during the activities.

Drs. K. A. Enlind, New York City; C. W. Conn, Uniontown, Pa.; Wm. Ellingwood, Rockland, Me.; Isidor Heller, Brooklyn, N. Y.; B. F. Gallant, Huntington, N. Y.; M. Levinsky, Bridgeport, Conn.; B. C. Waddell, Grassy Creek, N. C.; H. C. Donahoo, Chester, Pa.; Harry G. Steele, Bluefield, W. Va.; J. A. Harold, Ottawa, O.; J. M. Heath, Greenport, N. Y.; G. A. Silliman, Sayville, N. Y.; Philip Hirsch, Elmhurst, N. Y.; B. H. Cooper, Glen Lyon, Pa.; J. G. Evans, San Pedro, Calif.; T. F. Thompson, Lakewood, N. J.; S. C. Spoon, Jr., Burlington, N. C.; C. W. Hartwig, Reisterstown, Md.; L. R. Hedgpeth, Lumberton, N. C.; R. B. Garrison, Hamlet, N. C.; Rollin Jefferson, Tampa, Fla.; S. J. King, St. Louis, Mo.; R. R. Lee, Martinsville, Va.; C. F. Smith, Uniontown, Pa.; R. L. Jenkins, Winston-Salem,

N. C.; L. W. Glatzau, Daytona Beach, Fla.; F. W. Mayer, St. Paul, Minn.; F. H. Cutler, Salt Lake City, Utah; C. N. Haines, Sayre, Pa.; W. G. Stroble, Erie, Pa.; H. H. Haynes, Clarksburg, W. Va.; G. P. Asper, Castle Point, N. Y.; W. H. Marsh, Solomons, Md.; Richard Schorr, New York City; Jacob Belenky, New York City; H. E. McLean, Jersey City, N. J.; H. B. McDonnell, College Park, Md.; J. H. Bay, Havre de Grace, Md.; J. P. Roberts, Punxsutawney, Pa.; A. S. Gordon, Brooklyn, N. Y.; Everard Briscoe, Prince Frederick, Md.; Clyde Seitz, Glen Rock, Pa.; W. Wayne Babcock, Philadelphia, Pa.; G. A. Wilkins, Revere, Mass.; H. E. Wilkinson, Berlin, N. H.; G. P. Evans, Iaeger, W. Va.; F. R. Wise, York, Pa.; W. J. Salmon, Old Forge, Pa.; G. W. Tyrrell, Perth Amboy, N. J.; E. H. Arble, Carrollton, Pa.; A. E. Nolte, Wheeling, W. Va.; R. O. Coppedge, Nashville, N. C.; Vincent M. Maddi, Binghamton, N. Y.; Robert V. Palmer, Accident, Md.; M. B. Kelly, Wheeling, W. Va.; A. W. Valentine, Washington, D. C.; M. E. Hagerty, St. Louis, Mo.; W. E. Myles, White Sulphur Springs, W. Va.; F. H. Cutler, Jr., Hancock, Md.; I. M. Zimmerman, Williamsport, Md.; Otto Matheke, Newark, N. J.; J. H. Orff, Shillington, Pa.; L. A. Kochman, Ellicott City, Md.; Frank DiStasio, New Haven, Conn.; P. J. Bean, Great Mills, Md.; Charles Richardson, Bel Air, Md.; B. K. Blalock, Charlotte, N. C.; E. G. Breeding, Washington, D. C.; O. T. Barber, Fredonia N. Y.; John Anderson, New York City; W. J. B. Orr, Washington, D. C.; L. W. Anderson, Wilmington, Del.; C. H. T. Lowndes, Easton, Md.; J. C. King, Radford, Va.; R. H. Speight, Rocky Mount, N. C.; R. M. Riley, Nutter Fort, W. Va.; A. W. Erskine, Cedar Rapids, Ia.; J. L. Lenker, Harrisburg, Pa. Drs. A. F. Ries, Wm. T. May, Harry M. Robinson, Harry M. Robinson, Jr., Maurice Chideckel, Edgar B. Friedenwald, J. Morris Reese, C. Loring Joslin, J. Wesley Cole, John O. Davies, Margaret B. Ballard, Fred T. Kyper, Wm. S. Love, Jr., Wirt A. Duvall, John C. Dumler, Wm. S. Love, W. W. Walker, George A. Strauss, W. R. Johnson, Harry Goldsmith, Howard Kahn, Frank K. Morris, Robert P. Bay, John G. Onnen, Charles S. Neer, George Schmitt, H. E. Peterman, J. Morley Hoag, Louis H. Douglass, A. C. Hearn, Herbert E. Zepp, George L. Zimmerman, Daniel R. Robinson, Lauriston L. Keown, Lewis P. Gundry, Howard M. Bubert, Edward P. Smith, C. B. Ensor, T. Joseph Touhey, Edward A. Looper, M. C. Pincoffs, E. C. Reitzel, J. Fineman, T. N. Carey, F. J. Kirby, Raymond Hussey, L. A. Lally, D. J. Pessagno, John F. Hogan, Ralph Truitt, Alfred T. Gundry, Charles Goldsborough, S. Rubin, Walter C. Bacon, S. H. Streett, of Baltimore, Maryland.

ITEMS

Dr. Arthur M. Shipley, Professor of Surgery, addressed the Section on Surgery at the Annual Meeting of the Massachusetts Medical Society in Boston on May 31st. His topic was "Treatment of Peritonitis Complicating Appendicitis."

Dr. J. Mason Hundley, Jr., Professor of Gynecology, was elected a fellow of the American Gynecological Society in May, 1937.

Dr. J. F. Huey (P. & S. 1887) has recently moved from Town Creek to Falkville, Alabama. He is engaged in active practice in that community and is still intensively interested in the activities of the University.

Dr. Joseph Castronova (U. of M. 1907) is employed with the Rhode Island State Board of Health as state district health officer, with headquarters at Bristol, Rhode Island.

The following graduates of the School of Medicine, University of Maryland participated in the recent meeting of the Southern Surgical Association which was held in Birmingham, Alabama:

Dr. Charles Bagley, Jr., class of 1904, Baltimore, Maryland
Dr. E. H. Adkins, class of 1905, Miami Beach, Florida
Dr. Frank S. Lynn, class of 1907, Baltimore, Maryland
Dr. Fred Rankin, class of 1909, Lexington, Kentucky
Dr. J. Mason Hundley, Jr., Professor of Gynecology, was elected to fellowship in the Association.

The Fifth Annual Luncheon-Meeting of the New England Alumni was held on June 1, 1938 at the Hotel Statler in Boston, on the second day of the 157th Annual Meeting of the Massachusetts Medical Society at the Hotel Bradford, Boston. In response to the invitation sent out by the Secretary-Treasurer to the 485 alumni from the three schools in the six states, 185 men replied and sixty attended the Luncheon-Meeting. The guest speaker was Doctor Frank S. Lynn (U. of M. 1907), Professor of Clinical Surgery at the Medical School. Dr. Lynn spoke on "The University—It's Present and Future" and illustrated his talk with numerous lantern slides showing recent views of the present and proposed facilities at the College Park and Baltimore schools of the University. The following officers were selected by a nominating committee and elected to serve until the 1939 Luncheon-Meeting next June:

President—Michael H. Chrystal (B. M. C. 1901), Leominster, Mass.
Secretary-Treasurer—Charles E. Gill (U. of M. 1927), Boston, Mass.

The alumni attending were as follows:

Underwood, David G., Hingham, Mass., B. M. C. 1894
Robinson, Francis A., Burlington, Mass., B. M. C. 1894
Kludjian, A. H., Lowell, Mass., B. M. C. 1894
Angell, Frank C., Randolph, Vt., B. M. C. 1894
Blanchette, W. H., Fall River, Mass., B. M. C. 1896
Grady, Patrick A. S., Clinton, Mass., B. M. C. 1897
Emerson, G. S., Fitzwilliam, N. H., B. M. C. 1897
Miller, E. M., Woodsville, N. H., B. M. C. 1898
Rosa, H. A., Fall River, Mass., B. M. C. 1899
Tierney, Thomas F., Hudson, Mass., B. M. C. 1901
Alexander, T. B., Scituate, Mass., B. M. C. 1901
LaRue, A. A., Worcester, Mass., B. M. C. 1901
Chrystal, Michael H., Leominster, Mass., B. M. C. 1901

Harrington, M. W., Indian Orchard, Mass., B. M. C. 1901
Perry, Ralph G., Wells River, Vt., B. M. C. 1901
Dowd, Michael J., Thompsonville, Conn., B. M. C. 1901
Devlin, P. C., Lynn, Mass., B. M. C. 1902
Edmunds, F. A., Woburn, Mass., B. M. C. 1903
Vrooman, E. M., North Adams, Mass., B. M. C. 1903
Dugdale, Frederick, Portland, Me., B. M. C. 1903
McGinley, Charles, Lynn, Mass., B. M. C. 1904
Kelly, Harvey, Winthrop, Mass., B. M. C. 1906
Wyman, Arthur E., Sabattus, Me., B. M. C. 1906
Kefauver, L. A., Boston, Mass., B. M. C. 1906
Parvey, Benjamin, Boston, Mass., B. M. C. 1907
O'Rourke, C. B., East Providence, R. I., B. M. C. 1907
Mournighan, T. F., Providence, R. I., B. M. C. 1907
Devine, Harry L., Springfield, Mass., B. M. C. 1909
O'Rourke, P. I., Providence, R. I., B. M. C. 1909
Salles, J. M., New Bedford, Mass., B. M. C. 1911
Walsh, C. J., Arlington, Mass., P. & S. 1892
Howe, George J., Central Falls, R. I., P. & S. 1892
Lewis, A. C., Fall River, Mass., P. & S. 1893
Woodman, Daniel N., North Haven, Me., P. & S. 1893
Kearney, J. H., Fitchburg, Mass., P. & S. 1898
Bailey, George M., Providence, R. I., P. & S. 1898
Leonard, J. M., Fall River, Mass., P. & S. 1900
Saltz, J. M., Boston, Mass., P. & S. 1904
Trainor, J. A., Cambridge, Mass., P. & S. 1904
Archambault, J. F., West Warwick, R. I., P. & S. 1905
Weller, J. H., Bridgewater, Mass., P. & S. 1909
Eisner, M. S., Pittsfield, Mass., P. & S. 1912
Glidden, E. W., Worcester, Mass., U. of M. 1907
Gordon, W. C., Providence, R. I., U. of M. 1907
Ellingwood, W. A., Rockland, Me., U. of M. 1908
Shoemaker, A. B., Boston, Mass., U. of M. 1908
Trull, Alfred C., Haverhill, Mass., U. of M. 1909
Lenzner, S. G., Providence, R. I., U. of M. 1912
Riordan, A. H., Indian Orchard, Mass., U. of M. 1915
Holmes, James, Springfield, Mass., U. of M. 1917
Ponte, Joseph P., Jr., New Bedford, Mass., U. of M. 1920
Jackvony, Albert H., Providence, R. I., U. of M. 1920
Reynolds, Francis A., Athol, Mass., U. of M. 1921
Navarro, V. A., Medfield, Mass., U. of M. 1925
Fancher, Henry W., Thompsonville, Conn., U. of M. 1925
D'Angelo, A. F., Bristol, R. I., U. of M. 1926
Gill, Charles E., Boston, Mass., U. of M. 1927
Merlino, Frank A., Providence, R. I., U. of M. 1928
Vestal, Thomas F., Worcester, Mass., U. of M. 1929
Nicholson, M. J., Boston, Mass., U. of M. 1935

Submitted by:
Charles E. Gill, M.D. (U. of M. 1927), *Secretary-Treasurer*
49 Dover Street, Somerville, Mass.

WILLIAM FRANKLIN ELGIN, M.D.

Dr. William Franklin Elgin, aged 76, known as the dean of smallpox vaccine production, died at his home in Glen Olden, Pa. on April 18, 1938.

Dr. Elgin attended Western Maryland College and was graduated from the School of Medicine of the University of Maryland in 1887. For eleven years he practiced medicine in Bethesda, Maryland. During this period he became associated with Dr. Walter Reed in experiments at the old Marine Hospital in Washington, D. C., where he first became interested in smallpox vaccine. Later he established his own laboratories at Bethesda. These laboratories were sold in 1896. Dr. Elgin then organized the first unit of the H. K. Mulford Laboratories in Glen Olden, which were taken over by the firm of Sharp & Dohme in 1929.

Along with other work of importance Dr. Elgin developed a method by which vaccines could be preserved at subfreezing temperatures and stored in bulk without losing their potency. He also developed a dried vaccine for use in tropical countries. Considerable material was published by him on the production of vaccines.

Dr. Elgin was a member of the Medical and Chirurgical Faculty of Maryland, the Delaware County Tuberculosis Society and the American Medical and Public Health Association.

Carl Dame Clarke.

DR. "JIMMIE" WOLFE

Dr. James C. Wolfe, aged 39, died suddenly on May 23, 1938 from coronary thrombosis in Glen Ridge, New Jersey. "Jimmie" was the son of Dr. Jacob S. Wolfe, age 72, who is the Dean of Bloomfield, New Jersey Physicians, has been a member of the Board of Health for 31 years and for more than 20 years its president. Dr. "Jimmie", as everybody knew him, received his early education at Randolph Military Academy and Lafayette College. He graduated in medicine at the University of Maryland in 1921 and after interning at the Mountain Side Hospital at Montclair, New Jersey, he engaged in the practice of medicine and anesthesia at 56 Church Street, Montclair, New Jersey. He was police and fire surgeon in Glen Ridge and a member of the Board of Health. He was a member of the American Society of Anesthetists, the American Medical Association, the New Jersey and Essex County Medical Society, the Associated Physicians of Montclair, and the Medical Societies of the Oranges. He is survived by his wife, Mrs.

Lillian Wolfe, a graduate of Goucher College of Baltimore, 1921; a daughter, Caroline; a son, William; a brother, Dr. Maynard Wolfe, a dental graduate of the University of Maryland in 1922; a sister, Mrs. Brice Bowman of Cleveland; and his parents, Dr. and Mrs. Jacob Wolfe of Bloomfield, New Jersey. "Jimmie", although a youngster in the profession, had carried the banners of a sound clinical teaching in the University of Maryland to the community in which he lived and had become a most beloved physician and citizen. The Glen Ridge Police and Fire Departments placed an insignia on his grave, an honor which had never been given anyone except a fireman or a policeman. His medical associates and the newspapers of New Jersey and New York wrote columns as to his innumerable friends and his devotion to his profession. The number of people who gathered at his bier to pay their last respects was never before exceeded in this community. He was buried on May 26, 1938 at Beemerville, Sussex county.

J. H. Wilkerson, M.D.

Bilisoly, Alonzo Augustus, Portsmouth, Va.; class of 1893; aged 66; died, May 5, 1938.

Bowers, John W., South Portland, Me.; P. & S., class of 1882; aged 76; died December 7, 1937, in the Maine General Hospital, Portland, Me., of heart disease, stricture of the ureter and uremia.

Brand, Leslie, Maysville, Ky.; B. M. C., class of 1901; aged 65; died, March 22, 1938, in the Harrison Memorial Hospital, Cynthiana, Ky., of injuries received in an automobile accident.

Christ, Calvin Daniel, Orlando, Fla.; P. & S., class of 1905; aged 69; died, March 19, 1938.

Cox, Thomas Alexander, Hertford, N. C.; class of 1892; formerly county coroner; aged 69; died, December 13, 1937, in Jackson, Miss., of pneumonia.

Crawford, Andrew J., Glouster, Ohio; P. & S., class of 1887; member of the Ohio State Medical Association; formerly member of the state legislature; aged 75; died, January 11, 1938, of arteriosclerosis.

Denham, Cecil, Buckhannon, W. Va.; P. & S., class of 1901; served during the World War; aged 64; died, March 4, 1938.

Douville, Jeffery Charles, North East, Pa.; class of 1893; aged 72; died, February 2, 1938, in St. Vincent's Hospital, Erie, Pa., of bronchopneumonia and arteriosclerosis.

Elgin, William F., Glen Olden, Pa.; class of 1887; aged 76; died, April 18, 1938, of bronchopneumonia and cerebral hemorrhage.

Galloway, Walter Curtis, Gaithersburg, Md.; Washington University School of Medicine, Baltimore, class of 1874; aged 87; died, February 18, 1938, of cirrhosis of the liver.

Gibbs, Norfleet Mann, New Bern, N. C.; class of 1896; aged 65; died, December 25, 1937, of arteriosclerosis and hypertension.

Gilbert, Jesse Vincent, Maricopa, Calif.; P. & S., class of 1896; aged 74; died, March 6, 1938, of carcinoma of the stomach.

Glenn, Earle C., Sandy Lake, Pa.; B. M. C., class of 1903; aged 62; died, February 24, 1938, in the Mercer County Home and Hospital, Mercer, Pa., of heart disease and tuberculosis.

Heid, Francis Edward, Brockway, Pa.; class of 1913; aged 49; died, January 27, 1938, of heart disease.

Kell, Septimus Jasper, Bluefield, W. Va.; P. & S., class of 1907; aged 57; died suddenly, January 12, 1938, of angina pectoris.

Kerr, John Daniel, Clinton, N. C.; class of 1908; served during the World War; aged 53; died, March 16, 1938, in the James Walker Memorial Hospital, Wilmington, of N. C., of injuries received in an automobile accident.

Lopez Sicardo, Rafael, San Juan, P. R.; P. & S., class of 1907; medical superintendent of the Capitol City Hospitals; aged 62; died, December 22, 1937.

Lyon, Curtis L., Charleston, W. Va.; P. & S., class of 1915; aged 64; died, March 20, 1938, in the Charleston General Hospital of carcinoma of the sigmoid with perforations and peritonitis.

Maine, Charles L., DuBois, Pa., P. & S., class of 1892; aged 72; died, February 11, 1938, of coronary sclerosis.

Martin, Ephriam T., Seattle, Wash.; P. & S., class of 1893; aged 72; died, February 24, 1938.

Martin, Wilson C., Mocksville, N. C.; P. & S., class of 1888; aged 72; died, December 5, 1937, of carcinoma of the sigmoid.

McAllister, John Craig, Ridgway, Pa.; P. & S., class of 1889; aged 76; died, April 18, 1938.

O'Connell, Thomas Smith, East Hartford, Conn., P. & S., class of 1892; aged 71; died, February 25, 1938, in St. Francis Hospital, Hartford, Conn., of chronic osteomyelitis of the vertebrae with abscess formation.

O'Neil, Owen William, Mooers Forks, N. Y.; B. M. C., class of 1897; aged 65; died suddenly, of heart disease and gastric ulcer.

Price, Thomas Rowe, Glyndon, Md.; class of 1891; aged 72; died, January 16, 1938, of carcinoma of the prostate.

Rambo, Stafford, Bluffton, Ga.; class of 1891; also a dentist; aged 71; died, December 25, 1937, of coronary thrombosis.

Ritter, Francis O., Allentown, Pa.; class of 1881; aged 79; died, February 11, 1938, of cholecystitis.

Rosenthal, Harry Andrews, Clarksburg, W. Va.; P. & S., class of 1902; aged 61; died, November 12, 1937.

Seward, Robert Lee, Isle of Wight, Va.; class of 1891; aged 75; died, January 31, 1938.

Shaw, J. W. Kennard, New Iberia, La.; P. & S., class of 1887; aged 73; died, February 13, 1938, of angina pectoris.

Smith, Lyndon S., Monongah, W. Va.; B. M. C., class of 1901; aged 65; died, January 30, 1938, in the Cook Hospital, of cerebral hemorrhage.

Strauss, Henry William, Brooklyn, N. Y.; P. & S., class of 1913; aged 46; died, November 21, 1937, of chronic nephritis.

Tarkington, Grayson Emery, Albuquerque, N. M.; class of 1917; served during the World War; aged 43; died, January 12, 1938, as the result of injury received in a fall.

Van Ness, Eugene McEvers, Baltimore, Md.; class of 1891; aged 69; died, January 12, 1938, of carcinoma of the pancreas.

Weaver, Henry Bascom, Ashville, N. C.; Washington University School of Medicine, Baltimore, class of 1872; aged 86; died, February 13, 1938, of nephritis.

Wray, William Willis, Louisa, Ky.; B. M. C., class of 1897; aged 67; died, January 12, 1938, in the General Hospital, of uremia and carcinoma of the bladder.

BULLETIN
OF THE
SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

Vol. 23 OCTOBER, 1938 No. 2

EDITORIAL

The Medical Library, 1813–1938*

G. CARROLL LOCKARD, M.D.†

BALTIMORE, MD.

A library is not a mere repository of books to be visited upon occasion. It should afford an active, vivifying force to the life of the institution of which it is a part. This is especially true of the library of a medical school. Books and medical journals are not only the working tools of the student and teacher, but upon their use will depend intellectual growth and professional progress. The experience of the clinic and the laboratory must be checked with the printed experience of other workers. The truth of this is admitted and, therefore, it might be well to give thought to the relations now existing between the Library and the Medical School. After all, the past must be accepted and while it may have done much to mold us, nevertheless we will be judged by the way we accept and meet the responsibilities of the present.

The Library is housed in a building possessing both dignity of appearance and convenience of location, fittingly called "Davidge Hall". The reading room is comfortable if not spacious. The books and bound journals are arranged upon open shelves, with a simple and easily understood classification, and are adequately card-indexed. For members of the teaching staff engaged in any problem of research, special tables are assigned and the material under consultation kept intact. Practically all of the important English printed journals,

* Received for publication, August 25, 1938.

† Chairman, Library Committee.

together with a few necessary foreign language journals, are subscribed to and arranged upon racks allowing easy visibility, with spaces provided for the issues of each current volume. Should books or journals be desired which are not present in the Library, they will be procured from the Surgeon General's Library or other larger libraries, merely upon request to the librarian. The Quarterly Cumulative Index Medicus and the Index of the Surgeon General's Office are on assigned shelves, quickly accessible, as likewise are general reference works, medical and foreign language dictionaries. Therefore, there is a minimum of difficulty in procuring material sought by the reader.

Naturally, books are selected upon the "value theory", with particular effort in keeping fresh the literature in all domains of medicine and surgery. As there is a limited budget this is quite a problem, and all members of the Medical School should assume the obligation of recommending titles for purchase. All textbooks advised by the teaching staff are available for the use of the student body in the reading room only, with outside borrowing restricted to overnight use. Under present conditions of operation the Library is not in position to assume a more liberal rôle. In other words, the use of the library material is supplemental and not meant to replace the purchase of necessary textbooks by the student.

Students are permitted exceptional freedom, perhaps too much, in the use of the reading room. They are assisted in their assigned reading and taught how to use the reference books. One unfortunate drawback is that, owing to the absence of any provision for recreation or restrooms, the reading room is often overcrowded.

The Library itself is unquestionably understaffed as to personnel. While this is a source of weakness, it is not sufficient to interfere with its orderly use. It does, however, prevent desirable expansion, and especially do we regret our inability in not being able to supply the resident members of the Hospital Staff with current and appropriate reading material. We feel that this is one of our unfulfilled duties.

The Library, then, on this anniversary, believes that it is suitably if not wholly fulfilling its destiny. Shall we, therefore, say a few words as to the assistance which might be rendered to the Library by the members of the Staff? Most libraries are poor in financial means; that is proverbial. This Library has been a part of a struggling medical school, so the reason for its poverty need not be explained. It needs friends who appreciate its difficulties and who might be in position to make donations of books or monographs which they themselves select as being interesting or important. Special book-

plates are provided to be placed in such gifts and serve a double purpose. They not only acknowledge the good judgment of the donor, but, perhaps in turn stimulate the users to further benefactions. Gifts of old books, medical journals, unused books of personal libraries, and particularly libraries of deceased physicians are always welcomed.

Another phase of our library activity, which seems impressive to some of us, is an attempt to encourage its use in memorializing deceased members of the Medical School whose deeds and characters seem worthy of perpetuation by their friends. This has been done through the medium of assigning a definite division in our classification to such an individual name, and all books received and so accessioned will be given an appropriate bookplate. Again, books may be purchased and presented through funds or by individuals, designated as memorial gifts and appropriately bookplated. We now have memorials to Joseph W. Holland, Gordon Wilson, John C. Hemmeter and those two well-remembered friends of the Library, Randolph Winslow and Nathan Winslow. This seems a dignified and effective way of affording a means of remembrance, and it is to be hoped that it will be continued and more freely utilized.

As we believe, then, that the Library should be an active force, in order to supply energy, it must be kept alive. Appreciation, interest and criticism should be fostered and encouraged. A full use will lead to a continuing improvement.

A HISTORY OF THE LIBRARY OF THE UNIVERSITY OF MARYLAND,*† 1813–1938

RUTH LEE BRISCOE

BALTIMORE, MD.

"Where have I known it,—that old library,
Dark wainscoted, and book lined, high walled and still,
Where a content book-lover feeds at will
On books half musty with Time's rosemary"

Alice Lawry Gould in *Conjury*

According to Dr. Eugene F. Cordell, the University of Maryland, founded in 1807, was the first medical college in this country to establish a library, which was made possible by the purchase of 300 books from the estate of Dr. John Crawford. This was accomplished by a subscription of $500.00 by members of the Faculty. The minutes of the Faculty meeting of December 11, 1813 acknowledge the donation from Jeremiah Sullivan, Esq. of the *Encyclopedia Brittanica*, the binding to be paid for by him. The Library was opened for the use of students in 1815, when the following account of it was given: "Though not the most extensive of its kind, it is competent to most of the useful purposes of the medical pupil. While it contains many of the most recent works, it presents the curious inquirer with some of the rarest of both ancient and modern times, a few of which (I believe) are not to be found in any of the collections in the country."

In a report of the Faculty to the Board of Regents, dated May 3, 1819, it was stated that the debt due for the buildings and appurtenances, together with the amount expended for apparatus, Library, etc., was about $15,000.00. In a list of disbursements of the funds of the University contained in the Memorial of the Trustees of the University of Maryland and Trustees of the Baltimore College to the Legislature of Maryland, Baltimore, 1830, $2600.00 was charged to the account of the Medical Library. The Trustees' records contained a notice of books purchased by the Medical Library in April, 1837. During the regime of the Trustees (1826–1839) a branch was maintained at the Hospital for the use of the attending physicians and students, and an annual appropriation of $50.00 was made for the purchase of new books.

At the time of the Library's foundation the University marked the outskirts of the City of Baltimore, and from the beautiful portico of the Medical College could be seen the reaches of the brimming Patapsco River. The social and intellectual life of the City clustered

* From the Library of the School of Medicine, University of Maryland.

† Received for publication, August 29, 1938

about the University, which is rich in memories of a bygone day. Within a radius of three city blocks from the University of Maryland lie the bodies of many whose names are famous in history and literature. In St. Paul's Cemetery are the remains of Colonel John Eager Howard, the hero of the Battle of Cowpens, and later Governor of Maryland, and of Colonel Tench Tilghman, General Washington's Aide, who carried the news of General Cornwallis' surrender at Yorktown to the Congress which was assembled in Philadelphia, the first news of peace following the American Revolution. Under the same sod lies the body of Cary Long, the architect of the Medical College, who selected the Pantheon in Rome as his model. Nearby in Westminster Churchyard rest the immortal remains of Edgar Allan Poe. In this same hallowed ground is the tomb in sandstone and marble of Dr. John Crawford, the purchase of whose books in 1813 formed the nucleus of the Library.

Dr. Crawford was said by some to be the forerunner of Pasteur in his belief that micro-organisms outside of the body cause disease, and was the first to introduce vaccination in America. Before he came to Baltimore he had held an appointment as Surgeon-Major to the Colony of Demerara in South America under the Dutch Government. This explains the fact that a number of his books were printed in the Dutch language. Many years ago the School of Medicine enrolled a student by the name of Clarence Pridmore Andrews, who had attended the University of South Africa and understood Dutch; he translated the title pages of these books for the Library. Among the books in the Crawford Collection are examples of the bookbinding methods of the seventeenth and eighteenth centuries. Some are bound in vellum and parchment, others in calf and deerskin, with designs in blind and gold tooling. All of the books in this Collection bear the individual bookplate of Dr. Crawford, a small one of charming simplicity. There is no continuous record of the Collection, onlv a scant record of it now and then.

In 1890 the Library consisted of about 1,000 volumes, many of the rare ones being stored in the drawers of the museum. In 1891 the number was greatly increased by a gift of 1200 volumes to the Library by the late Dr. T. Barton Brune, an alumnus. For several years after this the druggist at the Hospital held the position of librarian. In 1903 the University was the recipient of 700 volumes from the library of the late Dr. Francis T. Miles. During the three years from July 1, 1903 to June 1, 1906 nearly 2,680 volumes were added.

In 1903 a Chair for the History of Medicine, a much neglected department in America up to that time, was founded at the Universitv.

Dr. Eugene Fauntleroy Cordell was appointed to fill this professorship. Through his efforts an interest in the Medical Library, which had been relegated to dust and neglect, was revived. It was made a member of the American Association of Medical Libraries, a code of rules was drawn up for its government, and books, pictures and journals were collected. As a consequence of this revival the librarian in June, 1906 was able to make a report to the Faculty, showing that the Library contained 6,980 volumes and 4,200 pamphlets. At this date it received regularly 46 journals and had an excellent card index system.

During the early years of the Library's existence and for nearly a century thereafter its collection of books was housed in what later became known as the Provost's office in the medical college building. As time went on various departments were added and mergers with other local medical institutions formed. It became necessary to seek more commodious quarters to accommodate the increasing accessions of books, journals, alumni records and publications. In 1843 the West Baltimore Methodist Protestant Church erected the building on the southeast corner of Lombard and Greene Streets. It was sold in 1880 or 1881 to the Calvary Methodist Episcopal Church, South, who used it until 1905, when the University of Maryland purchased it for a library building. The structure was given the name of Davidge Hall, in honor of Dr. John Beale Davidge, the founder of the University of Maryland.

The Library moved into Davidge Hall in 1913. On February 1, 1911 the Baltimore Law School and the Baltimore University School of Law were consolidated under the name of the Baltimore Law School, and the libraries of these two schools were united. "I do not believe that the Law Library of the Law School of the University of Maryland was ever founded. It just grew by gifts and accumulations of books," said Judge Henry D. Harlan, for many years Dean of the School of Law. "When the Law School moved from Mulberry Street where Liberty Street was cut through to its new buildings at the corner of Lombard and Greene Streets, in January, 1884, whatever books the Law School had were taken to the new building. . . . The Catalog of 1914 announces the merger with the University of Maryland of the Baltimore Law School, which was a consolidation of the Baltimore Law School and the Baltimore University Law School."

Just when the libraries of the Schools of Dentistry and Pharmacy entered into a merger with the Medical Library cannot be stated, as there are no existent records of such transactions. According to Dr. Cordell, the beginning of the Library of the Baltimore College of Dental Surgery is shrouded in uncertainty. The evidence of an early

library existed in a very fine antique bookcase. The Dental Library in the Dental Department of the University of Maryland amounted to very little, and consisted in the main of books on a variety of subjects. In 1923–1924 the books in the Dental and Law Libraries were combined, and an effort was made to organize the contents. Suitable sectional bookcases were placed in the Medical School Library, the first evidence of a modern dental library. This Dental Library remained in Davidge Hall until the beginning of the fiscal year 1926–1927, when it was removed to the School of Dentistry.

FIG. 1. Davidge Hall, Library of The School of Medicine

There were several cases filled with books on pharmacy in the Medical Library and, as time went on, this collection as well as that of the Dental Library was augmented by accessions of books and journals. In this manner the libraries of the various departments of the University were brought together upon the same site, an arrangement calculated to promote a closer relationship between them.

The merger of the Baltimore Medical College with the University of Maryland School of Medicine in 1913 brought an addition of books and journals to Davidge Hall; and in 1915, when the merger with the College of Physicians and Surgeons was accomplished, 417 books were

added, with a number of handsome bookcases which were erected around the walls of the basement. With this collection came also four large case-books recording the treatment of rabies by the late Dr. Nathaniel Garland Kierle, the Director of the Pasteur Institute of Baltimore.

When the affiliation with St. John's College, Annapolis, lapsed in 1920, and the Maryland Agricultural College at College Park became the Department of Arts and Sciences of the University of Maryland, the office of President was substituted for that of Provost. Dr. Thomas Fell was the last Provost of the University, and Dr. Albert F. Woods was the first President.

The Library functioned for a century as a "Gift" Library, supported almost entirely by donations from authors, publishers and the alumni. There were both locked cases and open shelves under supervision. As the various schools of the University grew in size they erected their own buildings, withdrew their libraries from Davidge Hall and employed their own librarians. The first to leave was the School of Commerce, with 99 volumes, then the School of Dentistry in 1926, with 306 volumes, followed in 1927 by the School of Pharmacy, with 170 volumes. The general (classical) library of 1,000 volumes was transferred to College Park in 1931. Thus the Library of the School of Medicine became the sole occupant of the first floor and the gallery of Davidge Hall.

As far back as 1914 the Library was surrounded by small trees and a brick sidewalk, which was replaced in 1916 by one of cement. Some semblance of its former existence as a church edifice still endured. There were three fine stained glass memorial windows, of which two remain to embellish the reading room. The communion railing had been removed and stored in the basement, but the platform was in place and on it stood the librarian's desk for eight years.

Since 1916 there have been three restorations. In 1925 the Library was remodeled by the addition of two galleries and the opening of the front gallery, which had formerly been closed, to meet them. The old platform and the librarian's desk thereon were removed, together with some of the antiquated bookcases. In their places was built a counter with an enclosed office. The east gallery had three rooms for conferences and one for a law professor's office. A Practice Court of the Law School was held each week in one of these rooms. The west and front galleries were open and used for study purposes.

When the Law Library was moved to its present site in 1931, the School of Medicine made changes in the reading room of Davidge Hall. The wire screen bookcases were removed and in their places

metal bookcases, specially designed journal racks, a catalog and dictionary stand, and filing cases were added. A fine linoleum of a soft green shade to match the metal equipment was laid upon the ancient board flooring of the reading room, and a small private office for the librarian created.

One of the large glass memorial windows was removed and a niche formed in its place. Here, upon a beautiful walnut pedestal stands a bust of Dr. James M. H. Rowland, the work of his daughter, Mrs. Carl D. Clarke. This bust was presented on Rowland Day, December 18, 1936, when the University celebrated Dr. Rowland's twentieth anni-

FIG. 2. The Interior of the Library

versary as Dean of the School of Medicine and his fortieth anniversary as a member of its Faculty.

Central heating to take the place of the coal furnace was installed in 1936. In October, 1937 a more extensive remodeling of the Library was begun. The dingy, dark vestibule which was poorly lighted and included a telephone booth, has been replaced by a charming foyer with hardwood floors and steps. Balustrades of wrought iron and brass railings, new lights, and a neat wall telephone have also been added. The walls of the Library throughout have been painted a soft Nile green, with ceilings in an off-white color. The woodwork has been finished in mahogany. In the basement a new floor of concrete

has been laid and painted gray, and metal book stands and an electric book elevator were installed. The basement windows were fitted with iron grills which lend dignity to the old colonial structure.

The spirits of our deceased alumni are ever-present. By their loyalty, bequests, and the memorials established by their friends, their names are forever linked with the annals of the School.

A portrait of Dr. Eugene Fauntleroy Cordell, painted by the late Irving Ward, was the gift of the alumni of the School of Medicine. Presented to the Library on Academic Day in 1914 after appropriate services in Westminster Presbyterian Church, it hangs in the foyer and is a constant reminder of our former librarian and of Maryland's most illustrious historiographer. Dr. Cordell's *Medical Annals of Maryland* and *The History of the University of Maryland* in two volumes are well-known and monumental works. The Library of the School of Medicine is indeed a fitting memorial to Dr. Cordell. He was generous with his leisure, information and gifts, and the existence of the Library is due in a large measure to his loyalty, zeal and devotion.

The General LaFayette Memorial Flag was given to the Library in December, 1917 by the Maryland Society of the Daughters of the American Revolution in honor of General LaFayette, upon whom in 1824 was conferred the first degree of Doctors of Laws by the University of Maryland. The presentation of this flag was a noteworthy occasion. The academic procession with Dr. Thomas Fell, Provost of the University, Right Reverend John Gardner Murray, Protestant Episcopal Bishop of Maryland, the Deans and Faculties of the various schools, in academic dress, formed in the medical college building and proceeded to the Library as an escort for Captain Jacques Raffray, who represented M. Jules Jusserand, the French Ambassador to the United States, and other officers and members of the French Army. A large gathering of members of historical and patriotic societies and interested spectators had assembled. The unveiling of the flag, the speeches made, and the beautiful rendition of the Marseillaise and the Star Spangled Banner by the late Dr. B. Merrill Hopkinson, a Professor of the School of Dentistry, will long be remembered by those who were present.

One of the most highly prized possessions of the Library is the collection of portraits and biographies, and the Mortality Roll of the University's Gold Star men and women in the World War.

A sum of money for the purchase of medical literature was subscribed by the Medical Alumni under the care of the Endowment Fund

of the University of Maryland and established in memory of Dr. Burt J. Asper, Gold Medalist of the Class of 1911, who was reported drowned or missing from the U. S. Collier Cyclops on March 4, 1918.

The same form of permanent memorial, and a portrait and tablet were presented by the friends of Major German H. H. Emory, LL.B., Class of 1903, who was killed in action on November 1, 1918.

A gift of current scientific journals was made by Mr. Henry P. Hynson in memory of his son, Henry Parr Hynson, Jr., LL.B., Class of 1909, Ensign U. S. N., who was accidentally killed by the explosion of a depth bomb on February 24, 1919. After the death of Mr. Henry P. Hynson, Sr. the firm of Hynson, Westcott and Dunning provided for a continuation of the gift of these journals.

In 1930 a collection of books was given by the friends, associates and students of Dr. Joseph W. Holland (1869–1929), Clinical Professor of Surgery, University of Maryland, together with a picture of Dr. Holland, a plaque of dedication, and a bookcase. To this was added 160 books from his private library. A suitable individual bookplate, beautifully designed, completed the memorial.

The front gallery of the Library is dedicated to the late Dr. Gordon Wilson, one of the most scholarly members of the Faculty, who was Professor of Medicine from 1914 to 1932. A picture of Dr. Wilson and a memorial in bronze adorn the wall, and his own furniture grouped here stimulates study and contemplation.

In May, 1933 a valuable library of books and journals was presented to the Library by Mrs. J. C. Hemmeter in memory of her husband, Dr. John C. Hemmeter, a former Professor of Physiology in the University. A suitable memorial bookplate was made for this collection.

The Library of Congress in 1917 presented to the Library 83 volumes of medical journals; these included some of the rare early volumes of Lancet (London). The Medical Alumni Association, the Surgical Staff of the University Hospital and the Medical Library Exchange have contributed many useful additions to our files.

In 1920 Miss Ella Webb, through Dr. Henry J. Walton, donated a portrait of Dr. Nathan R. Smith, commonly known in the early days of the School as "The Emperor."

In March, 1924 Dean Rowland purchased and presented *A Dissertation on Mercury* by Martin Fenwick (Class of 1813), the earliest writing by a medical alumnus in the Library. The Splint Club has given valuable assistance, and in the past two years gifts of money and rare medical works have been presented by the Medical Alumni.

In June of this year Dr. William H. Marsh, the oldest living active medical alumnus of the School of Medicine, contributed a cartoon (caricature) of the Faculty of Physic of 1876, framed in a period frame.

No history of the Medical Library would be complete without a reference to its departed friends, Professor Randolph Winslow, Professor John R. Winslow, and Dr. Nathan Winslow, all of whom died in 1937. These men, all accomplished writers, by their generous gifts and unceasing interest in the Library proved their love for their Alma Mater. Professor Randolph Winslow was Chairman of the Medical Library Committee for many years, and under his guidance and influence the librarian became imbued with the history and traditions of the University of Maryland, a heritage which is hereby gratefully acknowledged.

In the Bodleian Library, Oxford University, England, repose many thousands of volumes which contain the story of the world's intellectual life. Here and there between the stacks and on the walls are treasures of a different sort—memories of men and women who have lived in the past, things of no literary value but full of human interest, such as portraits, letters, autographs, the exercise books of the young scholars Edward VI and Elizabeth, and the Shelley relics. A similar sentiment prevails in the Library of the School of Medicine. Here are housed over 18,000 medical books and journals which contain much that is precious to learning. It is a partial record of the world's scientific achievements in the medical sciences and memorabilia of many kinds associated with the alumni. Among the alumni collection are autographed presentation copies of their works, and theses which were submitted for the degree of Doctor of Medicine from 1817 to 1886. Many of them were written in Latin. Some are adorned with unique embellishments, such as ribbons, fancy pictures, pen-and-ink sketches, according to the taste of the writer.

The reprinted publications of the alumni are collected, filed, indexed and bound in volumes designated as *Contributions to Medicine and Surgery by the Alumni and Staff of the University of Maryland School of Medicine.* The writings of Dr. Cordell have become famous through the years, and the works of other medical alumni writers appearing on the Library's shelves add lustre to the venerable institution. Dr. John Beale Davidge, founder of the University, wrote *Physical Sketches* and *Nosologia Methodica;* Dr. Nathaniel Potter, Professor of the Theory and Practice of Medicine (1807), wrote a book on *Contagion;* Dr. John D. Godman, Professor of Anatomy (1819), wrote *Ramblings of a Naturalist* and other publications; Dr. Nathan R. Smith, Professor of Surgery (1827), wrote *Surgical Dis-*

eases of the Arteries and *Treatment of Fractures of the Lower Extremity;* Dr. Robley Dunglison, Professor of Materia Medica (1833), was a writer whose knowledge was almost encyclopedic and he wrote on every subject except surgery; his *Medical Dictionary*, of which the Library has several copies, ran through twenty editions; Dr. Charles Frick, Professor of Materia Medica and Therapeutics (1858), was an investigator of note whose book on *Renal Diseases* is a classic; Dr. Edward Warren, Professor of Materia Medica and Therapeutics (1860), became Surgeon-General of North Carolina and later of Egypt. He died in Paris as Warren Bey, under which title he was known in Egypt. His works, *A Doctor's Experiences in Three Continents* and *An Epitome of Practical Surgery for Field and Hospital* had a deserved popularity in their day. Dr. William A. Hammond, who held the Chair of Anatomy and Physiology (1860), is said to have introduced the study of histology into the curriculum. He was appointed Surgeon-General of the United States Army in 1862 and to him is due the honor of originating the Medical Library of the Surgeon-General's Library in Washington. The Library of the School of Medicine has 9 books of which he is the author, the best known of which is *A Treatise on the Nervous System*, which ran through several editions.

When the present librarian was appointed in July, 1914 the Library was a consolidated one and represented Medicine, Law, Dentistry, Pharmacy and, for a short time, the School of Commerce. Dr. Cordell had passed away, the recipient of many honors from his Alma Mater. Between 1913 and 1914 Samuel Want, a lawyer, held the position of librarian. The scientific library, i.e., Medicine, Dentistry and Pharmacy, was under lock and key in old-style wire screen bookcases arranged around the sides of the walls, and in bookcases which had come into the building filled with books, the bequests of members of the alumni. There was a partial manuscript catalog of the scientific books but no catalog for the law books, and no accession or classification for any of the books or periodicals.

From 1914 to 1937 the author was in charge of the Library as it existed in Davidge Hall. In 1914 the librarian and the assistants were appointed by the Board of Regents of the University of Maryland. When the University became a State-owned institution in 1920 they were appointed under the Merit System of the State of Maryland after a competitive examination. The Library staff in 1914 consisted of the librarian and two assistants who were either lawyers or law-trained men. They circulated books and journals, and acted in the capacity of student advisers for the Law School. The present staff was organized in 1931 and consists of the librarian and one assistant,

between whom the library day is divided. The Library is now open throughout the year, except on legal and special University holidays, from 9:00 A.M. to 9:00 P.M., not including Sundays, and closes at 4:30 P.M. on Saturdays during the school year.

In 1937 Mr. Carl W. Hintz was appointed librarian of the University of Maryland, with headquarters at College Park. Mr. Hintz super-

FIG. 3. Ruth Lee Briscoe, Librarian

vises the work of all of the libraries of the University and has his Baltimore office in the front gallery room in Davidge Hall.

The use of the Library was increasing steadily in all departments and there were frequently 100 students in the reading room at one time before the organization of separate libraries in each school. It was necessary to enforce considerable discipline and care of library material and as a result there was little time for the regular desk work of the

Library. At that time the average daily attendance in the school year was 350 readers, ranging in groups of from 20 to 100. Approximately 100 textbooks were circulated during the library day; there was no means of computing the use of the open shelves by the Law School. Textbooks were circulated in the reading room only on printed slips, which were surrendered upon the return of the book. A notation from the office of the Comptroller in 1924 quoted "$3,064.22 spent in all departments of the Library." Another statement (1927) values the contents of the Library at $94,939.83, the building at $17,250.00.

The period 1914–1931 was one of intense activity in the Library, for that was the duration of the consolidation. A Medical Library Committee consisting of Dr. H. Boyd Wylie, Dr. Nathan Winslow, and Dr. G. Carroll Lockard, Chairman, was appointed by Dean Rowland in 1928. Dr. Nathan Winslow, since deceased, served for several years and resigned, and was succeeded by Dr. William S. Love, Jr. When the Law School withdrew its Library in 1931 a reorganization of the Medical Library was immediately begun by the Committee. The Library was reclassified by the Boston Medical Library classification, the official one for medical libraries since 1920. A set of rules for its government was printed and a small budget for the operation and maintenance of the Library secured. These funds are about equally distributed in book purchases, journal subscriptions and binding. What had existed for 117 years as a reference library became, with certain specifications, a circulating one. The gallery rooms were closed for study purposes and the books printed prior to 1840 were stored in two of these rooms. The Crawford Collection appears in this category, with its rare editions of the works of Hippocrates, Aretaeus, Celsus, Rufus of Ephesus, Vesalius, Sennert, Riolanus, Malphigi, Linnaeus, Reamur and others. These two rooms, now called "Treasure Rooms," are locked and the books on the shelves are arranged according to author. In one of the "Treasure Rooms" are pictures and busts of members of the Faculty of Medicine, and theses of the students of the School of Medicine which were submitted for the degree of Doctor of Medicine from 1817 to 1886. These theses have been bound in 189 volumes. There are also bound volumes of the reprints of the alumni titled *Contributions to Medicine and Surgery by the Alumni and Staff of the University of Maryland School of Medicine.*

The Library rules were revised in October, 1937 and made more expansive, so that textbooks are now circulated. To supplement the work of reference and research the Library offers interlibrary service

for wanted material which it does not have. Seventy-two interlibrary loans were made from January to June, 1938 from the Army Medical Library of Washington, the Johns Hopkins University Library, the Welch Medical Library, and the Library of the New York Academy of Medicine of New York.

The history of the basement of the Library is quite interesting for in it were enacted many pleasurable and dramatic episodes. It was first used as a gymnasium under the Y.M.C.A., then in 1917 as an office for the sale of law books by James M. Hepbron, who had it

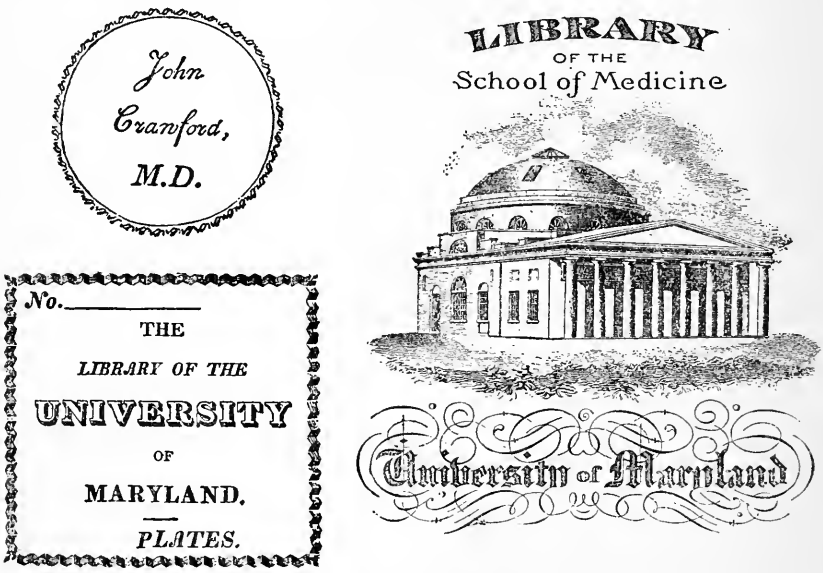

Fig. 4. Upper left: The book plate used by Dr. John Crawford in 1813 when the library was founded. Lower left: The earliest book plate used by the library. Right: The present book plate.

cleaned and whitewashed at his own expense. During the World War the Students' Army Training Corps used it as a mess hall, and in it the supplies for Base Hospital Unit No. 42 were packed by the Red Cross. The Babies' and Children's Clinic was moved over to the basement when it outgrew the quarters in the old hospital and remained there from 1920 to 1936. In connection with this Clinic many delightful entertainments of a social nature were held by Dr. and Mrs. Charles E. Summers in order to interest the public in the care and welfare of the dispensary for children.

The duplicate collection of library material was arranged in the basement from 1917 to 1922. The increasing growth and demands of

the Babies' and Children's Clinic for more space made it necessary to move the duplicates and for several years this material lay neglected in the basement of an unused building owned by the University. The Library Committee was successful in securing a three story building at 113 South Greene Street which was also owned by the University, into which the books and journals were moved. This and the adjoining building were condemned in 1938 by the Baltimore City Inspector of Buildings and razed. After various peregrinations the large accumulation of duplicates was brought back to the basement of Davidge Hall, its original location.

The Library is custodian of the furniture and library of the late Dr. Frank Bressler, Class of 1885, College of Physicians and Surgeons, until space is provided for them in the new Bressler Memorial Building.

According to the last figure quoted by Dr. Cordell, the Library in 1906 possessed 6,280 volumes. In 1915 an appropriation of $50.00 was made for the purchase of medical journals and $100.00 for binding, which sums have been steadily increased until the present time. The Library now owns 18,500 volumes. It receives 225 medical journals, of which 44 are in foreign languages. One thousand dollars are spent annually for the purchase of books, and the binding of journals, periodicals, etc. amounts to $700.00. The total circulation for the year 1937 was 3,098 volumes.

Such, in brief, is the history of the Library of the University of Maryland, now in the second century of its existence. Under the inspiring leadership of Dean Rowland and Dr. G. Carroll Lockard, who has been Chairman of the Medical Library Committee for a decade, the Library has made marked progress in the selection of books and journals and in achieving physical changes in the building. From a small beginning in 1813, with 300 volumes, the Library has grown with periods of suspended animation to its present size.

THE HISTORICAL COLLECTION IN THE LIBRARY OF THE SCHOOL OF MEDICINE OF THE UNIVERSITY OF MARYLAND*†

J. E. SAVAGE. B.S., M.D.

BALTIMORE, MD.

For the reader interested in general medical history as well as the background of the School of Medicine many pleasurable hours await him in the perusal of rare books, pamphlets and manuscripts in the Historical Collection. This review was undertaken to call attention to some of the more interesting items to be found in the Collection. It must be understood that this paper is by no means exhaustive either of the Historical Collection or of the related contents of the Medical Library itself; and only those items in the Collection have been included which were thought to be of greatest interest to the readers of the *Bulletin.*

Two carefully locked rooms off the east balcony of the Medical Library contain the Historical Collection. Some of the cases in these rooms are also locked to preserve more safely the most valuable books. Ready access may be had, however, by those interested upon application to the librarians. The rooms themselves, while adequately illuminated with artificial light, seem to have assumed an age in keeping with the antiquity of the tomes which they house. The ancient, musty but not unpleasant odor so characteristic of old bindings and yellowed pages is prevalent in both rooms.

Among the classic contributions to medical literature to be found in the Collection is William Beaumont's celebrated *Experiments and Observations on the Gastric Juice and the Physiology of Digestion,* published in 1833, one of the most important American medical writings of all time.

Of interest to the surgeon are seen representative works of the renowned Abraham Colles, Astley Cooper, Guillaume Dupuytren, William Hey, John Hunter, William Hunter, Percival Pott, J. Marion Simms, and Alfred Velpeau.

The background of internal medicine is well represented by the classical writings of Herman Boerhaave, William Cullen, J. Van Helmot, Rene Laennec, Pierre Louis, Benjamin Rush, Benjamin Waterhouse, the "American Jenner," and Thomas Willis, who differentiated diabetes insipidus and diabetes mellitus.

* From the Department of Obstetrics, School of Medicine, University of Maryland.

† Received for publication, August 26, 1938.

Other classical writings of general interest in such subjects as physiology, pediatrics, botany and pathology are located in volumes bearing the names of Carl Linnaeus, Francois Magendie, Lazzaro Spallanzani, and Michael Underwood, whose book entitled *A Treatise on the Diseases of Children*, published in 1789, the late Dr. John Ruhrah once said contained the first reference to poliomyelitis.

The writer asks indulgence for his interest in old books pertaining to obstetrics.

In the year 1775, in Paris, Jean Louis Baudeloque began speaking of the external conjugate diameter of the female pelvis. One of his most famous works, *L'art des Accouchemens*, describes his methods of pelvimetry and is to be found in the Library.

Among the first in England to advocate the induction of premature labor in contracted pelvis was Thomas Denman, whose renowned *Introduction to the Practice of Midwifery* may be seen in the Collection.

American obstetrics is well represented by *A Compendious System of Midwifery*, 1824, by William Potts Dewees. This work is recognized as the first American "system of obstetrics."

The subject of contracted pelvis was given added importance in 1839 by Franz Carl Naegele, who described the type of pelvis named for him. One of his books may be read in the Library.

A Treatise on the Theory and Practice of Midwifery, 1752, by William Smellie of London, will afford many an absorbing hour to the reader who is interested in this master's fundamental contributions concerning forceps, the management of the head in breech delivery, measuring the diagonal conjugate, and numerous other important contributions.

The surgeon interested in medical history does not have sole claim to the fame of Alfred Velpeau, for his treatise on midwifery appears on the shelf in an American edition.

In considering the history of medicine in Maryland one naturally thinks of Eugene Fauntleroy Cordell, who was the first Professor of History of Medicine in America. His most important works are to be seen in the Medical Library. They are *Historical Sketch of the University of Maryland School of Medicine*, 1891; *The Medical Annals of Maryland*, 1903; *University of Maryland, 1807–1907, its History, Influence, Equipment and Characteristics*, 1907. These volumes are o especial appeal to the alumni of the School of Medicine, to whom they are highly recommended.

Also of great interest in the Historical Collection are other writings by members of the Faculty and alumni of the School of Medicine.

Introductory lectures by William E. A. Aiken, Professor of Chem-

istry in 1837 and Dean in 1840, and Samuel George Baker, Professor of Materia Medica in 1837 and Dean in 1839, were published in 1837 and are lucid commentaries on those courses at that time.

Essays and addresses by Samuel Chew, Dean in 1842 and Professor of the Principles and Practice of Medicine in 1852, are bound along with others by fellow professors and alumni. His son, Samuel Claggett Chew, Dean in 1874 and Professor of the Principles and Practice of Medicine in 1886, among other writings, published an account of *Medicine in the Nineteenth Century* in 1899.

James Cocke, appointed the first Professor of Physiology in 1807, had published in 1804 a readable little book entitled *An Attempt to Ascertain the Causes of the Extensive Inflammation which Attacks Wounded Cavities, and their Contents.*

The works of John Beale Davidge, Dean and Professor of Anatomy in 1807, make absorbing reading. The definition of eclampsia found in his book *Nosologia Methodica*, published in 1813, leaves little to be desired in the light of modern descriptions: "Violent convulsions, resembling epileptick paroxysms, preceded by severe pains of the head or giddiness, sometimes by the appearance of images or visible forms, and terminated by stupor or snoring; suddenly attacking pregnant or child-bed women."

Robley Dunglison, one of the most prolific writers in American medicine, was appointed Professor of Materia Medica, Hygiene, and Medical Jurisprudence in 1833. The Library contains some of his works on hygiene, therapeutics, physiology and the history of medicine.

The first published work of an alumnus of the School of Medicine of which we have record was a thesis submitted for his degree in 1813 by Martin Fenwick, which was entitled *An Inaugural Dissertation on Mercury.* A further notice of this item will be found recorded in *History of the Library of the School of Medicine of the University of Maryland*, 1813–1938, by Mrs. Ruth Lee Briscoe, Librarian, in this issue of the *Bulletin.*

Representative works of Professors Charles Frick, William Gibson, John Godman and Nathaniel Potter grace the shelves of the Historical Collection.

John Shaw, who prepared the charter of the University of Maryland and who became the first Professor of Chemistry in 1807, contributed a *Manual for the Student of Anatomy* in 1825.

The various treatises on Surgery by Professor Nathan Ryno Smith are valuable additions to the Historical Collection. The Library also has a book written by his illustrious father, Nathan Smith, Pro-

fessor of Physic and Surgery at Yale College. The book is entitled *A Practical Essay on Typhus Fever*, New York, 1824. He happened to be writing about typhoid fever and this particular work is reputed to be the first clear description of the disease and its associated pathology. For the surgeon reader it will be interesting to note that Nathan Smith is said to be the first to clearly describe osteomyelitis.

Edward Warren was Professor of Materia Medica and Therapeutics in 1860. His interest in military surgery is attested by his book, *An Epitome of Practical Surgery for Field and Hospital*, Richmond, 1863. He held several important medical offices in the Confederate Army after leaving the School of Medicine.

To give interesting excerpts from even a few of the works consulted would be impossible in a paper of this length, but as an example of the startling and sometimes prophetic statements to be found in the writings of the past, attention is called to a paragraph in a book published in 1844. Thomas Watson, in his *Lectures on the Principles and Practice of Physic*, delivered at King's College, London, wrote in the section on puerperal peritonitis, which he believed to be the result of direct inoculation and therefore preventable, "In these days of ready invention, a glove, I think, might be devised, which should be impervious to fluids, and yet so thin and pliant as not to interfere materially with the delicate sense of touch required in these manipulations. One such glove, if such shall ever be fabricated and adopted, might well be sacrificed to the safety of the mother, in every labour."

It is with regret that one leaves the works composing the Historical Collection. Contact with these writers and their books is an inspiration to be worthy of the medical heritage therein represented. It is fitting that we should close this paper with a quotation from Pasteur. Dr. Herbert Thoms uses this excerpt in introducing the forword in his *Classical Contributions to Obstetrics and Gynecology:*

"From the life of men whose passage is marked by a trace of durable light, let us piously gather up every word, every incident likely to make known the incentives of their great soul, for the education of posterity."

The writer is indebted to Mrs. Ruth Lee Briscoe, Librarian, for her invaluable aid in the preparation of this paper.

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A STUDY OF 100 PREGNANCIES OCCURRING TEN OR MORE YEARS AFTER THE LAST PREVIOUS PREGNANCY*†

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This study was undertaken because of a growing feeling among members of the obstetrical staff of the University of Maryland that a woman who has had an interval of ten years or more between pregnancies is more prone to obstetrical difficulties and complications than the patient whose pregnancies occur at more frequent intervals. For a number of years the staff has insisted that such patients be delivered in the hospital instead of on the outside service. The 100 cases comprising this study are not selected reports but are consecutive cases of the last 100 women delivered who had not had a pregnancy for ten or more years. The number is small but it is felt that this preliminary report will give some idea of what is to be expected during the pregnancy, labor and puerperium of a patient who has had a long interval between pregnancies. Ninety per cent of the cases are from the clinic group. The other 10 per cent are from the private practices of members of the staff. As the number of private patients is small and there seem to be no outstanding differences between the two groups, they will be studied as a unit.

There were fifty-six white and forty-four colored patients, which is approximately the reverse ratio of the white and colored patients on the service. Eighty-five patients were between the ages of 26 and 40 years, while forty were between 31 and 35 years. The youngest patient was 23 years old and the oldest was 49 years. Table 1 shows the number of patients according to ages.

The average interval between pregnancies was 12.38 years. In twenty-six patients ten years had elapsed since the last pregnancy, while 80 per cent were in the ten to fourteen period. The longest interval was twenty-one years, as reported in the cases of two patients whose histories follow.

Mrs. M. K., white, 42 years, Para 2–0–0–2, age of oldest child 23, youngest 21 years old. The first pregnancy was complicated by acute nephritis that subsided after the sixth month. The second pregnancy was complicated by appendicitis, with operation in the third month. Both labors and puerperiums were normal.

*From the Department of Obstetrics, School of Medicine, University of Maryland.

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The present pregnancy was complicated by slight edema of the ankles throughout and secondary anemia which did not respond to medical treatment. She was hospitalized for one week prior to delivery and treated by transfusions. Labor began spontaneously at term and she delivered herself of a full term living male child after a seventeen hour labor. There was a small laceration of the cervix which was repaired. The puerperium was uncomplicated.

A. W., colored, 34 years, Para 1-0-0-0. The first delivery was by means of forceps. Other data could not be obtained. The present pregnancy was uncomplicated. Labor was prolonged for thirty-three hours, during which time she was

TABLE 1

Age Distribution

AGES	PATIENTS
23–25	4
26–30	22
31–35	40
36–40	23
41–45	10
46–49	1

TABLE 2

Interval Between Pregnancies

INTERVAL	PATIENTS
yrs.	
10	26
11	14
12	17
13	11
14	11
15	7
16	4
17	4
19	3
20	1
21	2

given sedation, and after twenty-five hours the membranes were ruptured artificially. Seven hours and fifty minutes after the rupture of the membranes she was delivered by midforceps. The position was R.O.A. The baby was a full term living child weighing 7 pounds, 13 ounces. The cervix was described as fibrous and friable. Puerperium was uncomplicated except for a rise in temperature on the third day to 101.5°. As the temperature did not remain elevated it was not classed as infection.

Table 2 shows the number of patients according to the interval between pregnancies.

These 100 women had experienced 207 previous pregnancies with 209 deliveries, two sets of twins being born. Fifty women had one prior pregnancy each, while one woman had had nine previous pregnancies. Of the 209 deliveries 170 or 81.34 per cent were normal spontaneous at term. In this group were one cesarean section and eighteen forceps deliveries, or .47 and 8.61 per cent respectively. There were 140 children living at the time of the pregnancies under consideration. Ninety patients stated that they had no complications during their previous pregnancies, labors and puerperiums. However, it is believed that this information is relatively inaccurate. Table 3 shows the types of deliveries of previous pregnancies.

There were 101 deliveries in this group, including one set of twins, which is about the incidence one would expect. Eighty-seven patients delivered full term living children. Twelve deliveries of premature living children included the set of twins. There was one

TABLE 3

Types of Delivery in Previous Pregnancies

Normal spontaneous		170
1 set twins		
Forceps		18
1 set twins		
Breech extraction		4
Cesarean section		1
Abortions		16
Spontaneous	15	
Induced	1	

therapeutic abortion for hyperemesis gravidarum in a colored patient. The one premature stillbirth was attributed to prolapse of the uterus and acute gonorrheal infection.

The average duration of labor of the ninety-three patients who were allowed to go into labor was slightly over twelve hours. The shortest labor was one hour and the longest was seventy-two hours. The latter occurred in a patient with an L. O. P. position and a postmature baby. She finally delivered herself spontaneously of a living child. Sixty-two patients or 66.66 per cent had a labor of ten hours or less, while twelve patients or 15 per cent had a labor of twenty-four hours or more. Table 4, which shows the duration of labor, is condensed to conserve space.

There were 68 or 67.3 per cent normal spontaneous deliveries. The set of twins is included in this group. Six cesarean sections and seventeen forceps deliveries account for 6.93 and 16.8 per cent respec-

tively. Table 5 shows the types of deliveries and their indications.

All of the babies were lying in the longitudinal position. Presentations were in about the normal proportions and need not be listed here.

The complications of pregnancy, labor and the puerperium are found in Tables 6 to 9 inclusive. The number of complications is

TABLE 4

Duration of Labor

HOURS OF LABOR	PATIENTS
1–10	62
11–19	14
22–28	7
32–34	3
44–46	2
68	1
72	1

TABLE 5

Operative Deliveries and their Indications

Cesarean sections		6
Chronic nephritis	1	
Placenta previa	3	
Cephalopelvic disproportion	1	
Sterilization-mental deficiency	1	
Forceps		17
Mid		
Prolonged labor	3	
R.O.P. with comp. pres.	1	
Low		
Cardiac	3	
R.O.P.	2	
Prophylactic	8	
Breech extraction		9
Dilatation and curettage		1
Hyperemesis gravidarum	1	

higher than one would normally expect and for this reason they are listed in detail. In comparing the complications in this group of patients with those listed in the 1937 Annual Report of the Obstetrical Department some outstanding differences were noted. These differences are listed in Table 10 and need no further comment here. It is interesting to note that only one patient had an abortion and that was a therapeutic one.

TABLE 6

Nonobstetrical Complications of Pregnancy

COMPLICATIONS	PATIENTS
Cardiac	5
Aortic insufficiency	1
Aortic insufficiency and stenosis	1
Mitral insufficiency and stenosis	1
Mitral stenosis	1
Definite failure due to pressure from hydramnios	1
Nephritis	19
Syphilis	12
Marked secondary anemia	3
Neurosis	1
Hydronephrosis	1
Chorea	1
Arrested pulmonary tuberculosis	1
Mental deficiency	1
Diabetes	1
Varix of esophagus	1
Prolapsed uterus	1
Cystocele and rectocele	1
Scabies	1
Fainting spells (no diagnosis)	1
Erosion of cervix	1
Rectocele	1
Severe headache (no cause found)	1

TABLE 7

Obstetrical Complications of Pregnancy

COMPLICATIONS	PATIENTS
Mild toxemia (type not stated)	6
Preeclampsia	3
Pyelitis	2
Placenta previa	4
Premature separation of placenta	1
Premature separation of a low implanted placenta	1
Premature labor	12
Vaginal bleeding (no diagnosis)	7
Hydramnios	1
Hyperemesis	3
Premature rupture of membranes	1
Postmaturity	2
False labor	2
Cystitis	1

TABLE 8

Complications of Labor

COMPLICATIONS	PATIENTS
Prolonged labor	12
Precipitate labor	1
Uterine inertia	6
Cephalopelvic disproportion	2
Fibrous friable cervix	1
Postpartum hemorrhage	1
Cervical dystocia	1
Transverse arrest	1
Compound presentation	1
Difficult delivery of shoulders in breech presentation	1

TABLE 9

Complications of Puerperium

COMPLICATIONS		PATIENTS
Puerperal infection		17
Putrid	15	
Subacute endometritis	2	
Pyelitis		3
Fissured nipples		2
Postpartum psychosis		1
Atony of bladder		1
Breakdown of episiotomy wound (patient had positive Wassermann)		1
Gonorrhoeal arthritis		1
Pulmonary embolism		1
Common cold		1
Uterine hemorrhage on ninth day		1

TABLE 10

Frequency of Complications in this Study Compared with the Clinic as a Whole

COMPLICATIONS	THIS STUDY	TOTAL CLINIC
	per cent	*per cent*
Toxemia	28	15
Puerperal infection	17	7.30
Prolonged labor	12	1.72
Uterine inertia	6	0.03
Cardiovascular disease	5	1.50
Placenta previa	4	1.23
Abruptio placenta	2	0.09
Marked secondary anemia	3	0.05
Postpartum hemorrhage	1	1.17
Cervical dystocia	1	0.04

Eighty-one operations were carried out. Thirty-three or 40.7 per cent were incident to the type of delivery, while 39 or 48.1 per cent were repairs of the cervix and perineum. One patient was sterilized at the time of section by crushing and ligating the tubes (Madlener technique). Thus it is seen that the operative incidence is increased from 9.09 per cent in the previous deliveries to 32.6 per cent in the deliveries occurring after an interval of ten years or more.

There were twenty-four procedures incident to labor and not counted as operations. They include amniotomy to hasten or induce labor—sixteen times, medical stimulation to overcome uterine inertia—five times, medical induction of labor—one time, amniotomy plus medical induction—one time, and packing of the uterus for postpartum hemorrhage—one time.

Of the ninety-nine viable babies born, sixty-five weighed between 6 and 8 pounds and seventeen weighed between 8 and 11 pounds. The smallest in the group weighed 2 pounds and 2 ounces, and the largest 10 pounds and 1 ounce. Fifty-eight babies were male and forty-two female. In the one case of abortion the sex was not known.

The uncorrected fetal mortality is 7 per cent. There was one stillbirth in the patient with prolapsed uterus and gonorrheal infection. In three cases the cause of death was stated to be prematurity alone. There was one death each of congenital heart disease, pulmonary hemorrhage and subpial hemorrhage in a difficult breech delivery (confirmed by autopsy), and prematurity plus maternal nephritis.

The maternal mortality was 1 per cent. A summary of the case follows: Mrs. L. P., white, 33 years, Para 1-0-0-1, last pregnancy twelve years ago, was said to have been normal. Patient was mentally deficient and sterilization was advised. She was delivered by classical section of a full term living female child weighing 7 pounds. Her membranes had ruptured a short time before admission but she did not have any pain. The postpartum course was uneventful until the fifth day, when there was a rise in temperature to 103.4°, but the patient had no complaints. On the sixth day she died suddenly from embolism.

SUMMARY

1. White women are more apt to have long intervals between pregnancies than are colored women.

2. There is no difference between the longer and shorter intervals as to labor, complications, etc.

3. The number of full term living children is slightly increased.

4. The duration of labor is increased about one-fourth.

5. Operative deliveries are increased more than three times.

6. The ratio of male to female babies is increased over the average.

7. The following complications are markedly increased: toxemia, cardiovascular disease, placenta previa, abruptio placenta, prolonged labor, uterine inertia, cervical dystocia, and secondary anemia.

8. The woman who has not had a pregnancy for ten years or more should receive the best prenatal care and be delivered in a hospital under excellent obstetrical supervision.

NEVUS UNIUS LATERIS (LINEAR NEVUS)*†

Report of Case with a Review of the Literature

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A case of nevus unius lateris in a newborn infant is reported. This lesion is well-known to most dermatologists, but a description of a case and a review of the literature should be of interest to physicians in general.

GENERAL CHARACTERISTICS

This type of birthmark is congenital in origin and is generally present at birth; however, it may occur later, during adolescence, and may disappear spontaneously. The lesion consists of warty growths usually arranged in lines or streaks on one or both sides of the body, but as a rule unilateral; it may extend down the whole length of a limb in continuous bands or be broken up by normal skin. There are no objective symptoms unless inflamed by an injury. These warty growths may occur anywhere on the cutaneous surface; they are usually hard because of an accumulation of the horny layer of the skin, which gives it a light or dark brown color; or at times they may be smooth and soft. They are parallel with the long axis on the extremities and horizontal on the trunk; or they may occur in radiating bands or branchedlike dendrons. This type of nevus is known in the literature by many names. It is very rare, having occurred about ten times in 30,000 cases of skin disease. The sexes are about equally affected.

SYNONYMS

As many as forty-eight names have been found for the disease, usually depending on the etiology and characteristics of the lesions. The more common synonyms follow:

Zosteriform (distribution of herpes zoster)
Ichthyosis hystrix (horny, spinelike masses)
Nevus acneformis
Papilloma lineari
Systematized nevi (Jadassohn)
Zoniform or segmental nevi
Nevus unius lateris (Barensprung in 1863 was the first to point out its unilateral structure following the course of nerves)

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* From the Department of Pediatrics, School of Medicine, University of Maryland.
† Received for publication, June 21, 1938.

Nevus linearis
Nevus lateralis
Nevus verrucosus linearis (Galewsky)
Ichthyosis linearis neuropathica
Nevus nervosis (Simon)
Nevus papillaris (Neuman)
Nevus verrucous (Muller)
Nevus lichenoid (Hallopeau)
Papilloma essentiale neuropathicum (Gerhardt)
Nevus verrucous zoniformis (Bravat).

ETIOLOGY

The etiology is uncertain. Heredity may play a part, as cases have been recorded where this lesion has occurred in several generations and in more than one member of a family. It may follow the distribution of certain nerves. The peculiar arrangement of these warty growths may be caused by developmental error. They may be associated with other forms of nevi.

Jadassohn (24) believes them to be neurofibromata commonly found along the course of nerves. Blaschko (26) believes they are the sequelae of fetal disturbances of development. Different writers believe (a) the lesions follow the lines of cleavage of the skin; (b) they follow along the course of superficial blood vessels and lymphatics; (c) that they follow metameres or segments of the body; (d) that they lie along embryonic sutures that follow the trend of growth of the tissues; (e) they follow the course of the cutaneous nerves. Barensprung (25), who gave the lesion the name nevus unius lateris, in 1863 described his neurogenic theory. He observed that this nevus is distributed in segmentally innervated cutaneous areas, and ascribed this to faulty development or prenatal injury of the spinal ganglia. Barensprung attributed this to their usual unilateral distribution and their delimitation by the median line, by their distribution along the peripheral expansion of spinal nerves, and by hypertrophy of the elements in which peripheral nerves terminate. But many do not follow the course or distribution of cutaneous nerves, which caused dermatologists to abandon this neurogenic theory. Others followed the neurometameric theory of Blaschko, i.e., that the lesion is not located in the spinal ganglia but in the cord itself, to be distributed in relation to definite spinal segments or neuromeres. Most authors assume a partly embryonic and partly hereditary basis. Some look upon these peculiarly formed nevi as remnants of the skin patterns of bygone conditions, or as an atavistic reversion. A number of authors have found them to be associated with neuropathic states, as in backward and neurotic children, with lesions of the peripheral nervous

system, meningocele, spinal cord affections, and deficient muscular development of the affected side. Occasionally nervous manifestations such as headaches and epileptic convulsions are seen.

HISTOPATHOLOGY

These nevi consist of pigmented, raised, flat, papillomatous and verrucous elements of brown color, light or dark, resulting from an accumulation of the horny layer of the skin. They are benign and may simulate normal skin or show a predominance of some of its structure, especially the horny layer of the epidermis which gives them their warty form. The lesion may depend upon the affected area, usually keratoid about the extremities, and acanthoid where the skin is softer, as about the face, neck and trunk. The pigmentation, if any, is caused by the presence of melanin.

DIFFERENTIAL DIAGNOSIS

Nevus unius lateris may be confused with linear lichenoid planus, hypertrophic lichen planus, verrucous lupus vulgaris, herpes zoster (zosteriform type), and linear ichthyosis hystrix (circumscribed patches of ichthyosis running in lines apparently along the course of the nerves, which are papillated and have horny masses above). Lichen planus is neither congenital nor permanent. Nevus unius lateris is diagnosed by its wartiness, roughness, buff color, streaked arrangement, and its permanency. Herpes zoster is a vesicular lesion. Lupus verrucous has an underlying brown base and usually ulcerates, and is not generally present at birth or soon after.

PROGNOSIS

Nevus unius lateris may disappear in time and does not affect health or life. These lesions are benign and malignant degeneration is unknown. Often they are annoying, depending upon their position on the body, as well as from friction and perspiration. Spreading, if any, stops at an early age. If untreated these lesions may remain stationary throughout life.

CASE REPORT

The mother, age 20, white, Para I, delivered normally on March 18, 1937 a male child, weight 6 lbs. 5 oz. The postpartum course in the hospital was uneventful. The baby was discharged on the twelfth day, weight 6 lbs. 9 oz. The family history was essentially negative. The Wasserman on the cord blood was negative. Over the dorsum of the thumb, wrist, right arm, and over the shoulder to the scapular area there was noticed a raised, irregular lesion of a pale pink hue in some places and reddish in others, which blanched with pressure. It was for the most part confluent but was discrete in areas; the margins were well demarcated.

Note by dermatologist: "There is a linear eruption extending from the right mid-scapular area onto the extensor surface of the arm and forearm and termination on the dorsum of the thumb. It is made up of round and irregularly-round, flat-topped, pale red, soft, fleshy plaques, varying in size from a pinhead to a nickel. Pressure on the areas causes the color to disappear, but it quickly returns. No evidence of inflammation. Impression: Nevus unius lateris."

Neurological note: "The distribution of the lesions seems to follow the course of the superficial fibers of the axillary, musculocutaneous and radial nerves. These three nerves are given off from levels C5 to T1 of the spinal cord. It is most likely that if this lesion is of neurogenic origin, it is central in origin rather than peripheral."

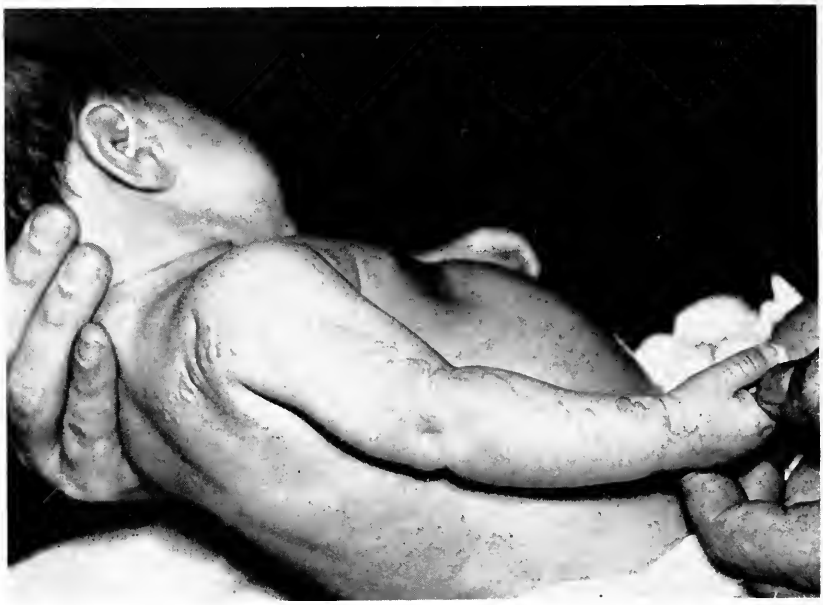

FIG. 1. Illustration of a case showing the distribution and character of the lesion

REVIEW OF LITERATURE

In 1887 Hyde (10) reported a "rare form having the distribution of zoster corporis." The lesion was on the lateral aspect of the body. He believed the distribution of the lesions corresponded to the region of the skin supplied by the anterior branch of the lateral cutaneous nerves.

In 1896 Selhorst (13) described a nevus acneformis unilateralis, a lesion dotted with large simple and double comedones.

In 1898 Morrow (7) reported two cases with color plates.

In 1901 Montgomery (9) discussed the causes of the streaks in nevus lateralis and outlined forty-eight synonyms. He reported a

case in a twelve year old boy. The lesions did not occur until shortly after birth and then developed on the right upper eyelid, the back of the neck, straight up and down, following the long axis, and across the abdomen.

In 1906 Adamson (8) discussed in detail the histology of a case. He described the epidermis as thickened and thrown into folds; sweat glands were seen and the large blood vessels were arranged in a plexus.

In 1908 Schalek (12) reported a case of nevus unius lateris, and discussed in detail the general etiology and structure of the lesion. He reported a case of a girl nine years old, who was in poor health, nervous and anemic. There was no lesion of this type in the family history. The nevus was on the left heel and left knee at birth. It spread to other parts of the body on the left side and seemed to follow closely the course taken by the nerves. There were no subjective symptoms.

In 1911 F. P. Weber (21) described a case with illustrations of nevus verrucosus linearis in a boy three-and-a-half years old. The skin of the trunk, neck and extremities on the left half of the body was affected with a pigmented verrucous nevus. Distribution was segmental or zoniform and resembled the distribution of the herpes zoster. These lesions were not seen until after the child was seven months old.

In 1911 Sequira (17) reported a case in a boy of five years, which presented lines of warty growths extending from the buttocks to the heel on each side and along the upper extremities from the axillae to the backs of the hands. These lesions were of a yellowish-brown color. In addition to the warty streaks there was a remarkable pigmentation of the back arranged in curved lines radiating from the spinal column. The case illustrated the fact that linear nevis is not always unilateral.

In 1914 Adamson (8) again described the characteristics of this lesion. He presented a case of common port-wine nevus with zoniform distribution limited to one-half of the face. He reviewed some early literature on this subject, of which a summary follows:

A. Jarisch in 1895 described a cretin, fifty-four years old, with a lesion on the left half of the face and left side of the forehead.

B. Leslie Robert wrote of a case in which the lesion appeared on the right side of the face with hypertrophy of the lanugo hairs. There was a nevus on the lip at birth.

C. Wallace Beatty reported the distribution of lesions along the left side of the upper part of the body. On the forehead they were sharply limited to the left side of the median line.

D. Whitfield described a case in which lesions were seen on the right side of the

forehead following an attack of herpes frontalis, which he questioned and presumed that it was an "inflammatory period" of the nevus and not a herpes.

E. MacLeod described a case where lesions occurred on the limbs, cheek and nose.

F. White's case had a nevus below the right scapula at birth.

G. Hutchinson's case started from a port-wine mark at birth.

H. Francis described a case of "a continuous band of confluent vesicles and papules, like frogspawn, the whole way down the limbs."

In 1923 Aikins and Harrison (20) reported the case of a girl of eighteen years who was treated for birthmark, a clinically linear nevus which extended from the dorsum of the left thumb to three inches above the wrist. It had a close agreement with the distribution of the spinal nerve.

In 1926 M. G. Hufschmitt (18) reported a case of a verrucous nevus which occurred on the left side of the body as a linear band, three centimeters long. It extended from the deltoid area of the humerus to the base of the thenar eminence.

In 1930 R. T. Brain (13) cited a case of nevus unius lateris in a male, twenty-four years old. This extensive nevus was limited to the left side of the body and consisted of macules, flat-topped papules, and warty nodules aggregated into areas corresponding closely to the sensory areas of certain segments of the spinal cord. All the lesions were brown in color. The distribution was along the left arm, left side of the trunk and left leg. It corresponded to the following segments of the spinal cord:

a. Cervical VII and VIII—from the ulnar side of the palm along the inner second-and-a-half fingers.

b. Thoracis I and II—along the inner side of the whole arm to the anterior axillary fold.

c. Thoracis III and VI—the front of the chest and along the linea alba.

d. Dorsal X—this area was almost completely covered by dark, warty skin.

e. Lumbar III and IV—the inner right side of the left knee.

f. Sacral I—along the internal malleolus and base of the big toe.

g. Sacral II and III—the whole of the left side of the scrotum was dotted with warty papules.

In 1931 W. H. Barber (14) reported a case of nevus unius lateris involving the sebaceous glands and pilosebaceous follicles in a male eighteen years old. The lesion extended from the midlateral line on the right side, one-and-one-half inches above the iliac crest, obliquely across the abdomen to the right sacroinguinal fold, and thence downward along the inner side of the thigh to the popliteal space. The pilosebaceous follicles were packed with comedones.

In 1932 Silcock (15) reported a case of symmetrical systematized nevus in a female of fifteen years. It was first noticed at the age of

two months on the left ankle and the left little finger. The birthmark consisted of pigmented macules, papules, and warty nodules; the color was light brown to black. They became quite extensive and were arranged in lines or streaks, longitudinal on the extremities and neck, and parallel to the ribs on the chest. The case was presented because it is uncommon for these lesions to appear on the face and forehead as well as on the rest of the body.

In 1933 H. G. Semon (16) reported a case of nevus unius lateris in a female of twenty-three years, which was noticed since she was fourteen years old. It consisted of a pigmented nevus over the front of the left half of the chest and upper part of the breast and extended to the clavicle. This lesion resembled pityriasis versicolor.

In 1935 G. Bamber (22) described a case with illustrations of linear nevus which appeared after x-ray therapy. The patient was a boy, thirteen years of age, who was treated for multiple focal osteitis fibrosa. After the fourth x-ray treatment there was noticed along the right arm numerous flat papules, the size of a pinhead. The lesion was aggregated into groups and arranged in parallel lines. The color was deep pink. Later the lesions increased in size, and became warty and darker.

In 1935 Touraine and Duperrat (19) described a case of Zona Bilateral de la Face, naevi verruquex linearis. The patient, a woman, presented four verracous warts with special linear disposition, which corresponded very well to the linear lines of Voigt. The course of the lesion followed the trigeminal nerve, the inferior maxillary nerve on the left, and the frontal superior maxillary on the right.

COMMENT

The author's case was reported for the following reasons:

1. Its rarity.
2. To acquaint physicians with its characteristics and with the interesting literature on the subject.

I wish to acknowledge my indebtedness to Drs. Leon Ginsburg and H. S. Rubinstein for their assistance in the preparation of this article.

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A PRECIPITATE LABOR COMPLICATED BY PERIRECTAL HEMATOMA AND SHOCK*†

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This case is both interesting and instructive, and was thought to be worth reporting because of the scarcity of such cases in the literature. The usual complications of labor and delivery are generally very well known by the profession. However, the unusual complications are not as widely known or recognized and for this reason should be brought to the attention of the profession. It represents, first, an unusual complication but one that may occur at any time under fairly similar circumstances; second, an uneventful recovery from what may have been a serious illness.

CASE REPORT

Mrs. H. N., age 20, white, Para 1-0-0-1, was admitted to the maternity ward of the Baltimore City Hospitals on September 7, 1937. The patient had been delivered at home by her physician six hours before admission to the hospital. The total duration of a very intense labor was two hours. She delivered a full term living male child of average size. At this time the patient sustained a first degree perineal laceration and bled slightly more than normal following delivery. The bleeding ceased after one-half hour; the patient appeared in good condition, and the physician therefore left the case. He returned later to see her again at her home and found the patient very pale in appearance, with a rapid pulse, respirations above normal rate, and blood pressure very low. At this time there was only a slight external bleeding, with no signs or history of having lost any large amount of blood during the interval between the visits. The physician then made arrangements with the hospital for admission of his patient, at which time it was thought she had a laceration high in the birth canal.

At the time of admission, six hours after delivery, the patient showed signs and symptoms of shock, was very pale in appearance and definitely apprehensive. She was not bleeding when admitted. Shock therapy was immediately instituted, and within one hour an improvement was noticed. In the meantime the patient had been matched for blood and there was available 500 cc. of citrated blood. She was then moved to the delivery table and the transfusion started. While this was being done the patient was put up sterile for examination of the birth canal. The uterus and cervix were intact, no lacerations of the vagina were detected, and a mild, second degree laceration of the perineum was found which required two sutures for repair. However, on examination of the vagina a large cystic mass was felt through the left posterior vaginal wall and seemed to be associated with the rectum. The mass was of sufficient size to cause a bulge of the vaginal mucosa on the left side.

* From the Department of Obstetrics, School of Medicine, University of Maryland.

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Tissues about the rectum and anus were then examined. The mucous membrane of the anus was seen to have a dark discoloration, as of blood beneath the surface of the mucosa. The ischiorectal space on the left was tense on palpation, with a noticeable bulge. A finger was inserted into the rectum and a cystic mass was immediately encountered on the left side. This mass extended upward as far as could be palpated. It was decided that this was a perirectal hematoma with extravasation of blood into the soft tissues of the region.

The general condition of the patient was markedly improved at the completion of the above examination. No further manipulation of the hematoma or perineum was done and the patient was kept under close observation for the next several hours for signs of further bleeding. However, none occurred.

Conservative treatment was administered for the remainder of her stay in the hospital. She ran a febrile course for nine days and her temperature reached a height of 101.5°, with the pulse rate in proportion. At the end of this time the temperature had completely subsided. There was no progressive infection of the hematoma of the perineum. After eighteen days in the hospital the patient was discharged in good condition and the hematoma had been completely absorbed, this fact being determined by palpation. At the time of discharge the blood picture showed a hemaglobin of 76 per cent and a red blood cell count of 3,900,000.

CONCLUSIONS

1. A perirectal hematoma may occur as a complication of labor, especially precipitate labor, and be of sufficient extent to cause shock.

2. Routine shock therapy including blood transfusion was entirely satisfactory in this case.

3. The conservative treatment of the hematoma and perineum gave entirely satisfactory results, and afforded less chance of infection than any procedure of interference.

GRANVILLE SHARP PATTISON, THE DUELING ANATOMIST*†

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About 118 years ago there echoed in the halls of the University of Maryland the voice of a man who, in spite of his much disputed reputation, is one of the most colorful characters to be found in the early history of American medicine. I should like to introduce Granville Sharp Pattison. That so much has been written about him is evidence not of his reputation as a teacher, which was incidentally quite high, but rather evidence of his aforesaid moral reputation.

William Snow Miller of the University of Wisconsin has made a study of a collection of papers and documents concerning Pattison. I shall refer frequently to his paper and to Cordell's History of the University of Maryland. Both authors give the impression that Pattison was probably antagonistic and somewhat of a Casanova. Miller writes: "Being a man of intense feeling and strong prejudices he did not easily brook opposition. Because of these characteristics, the early years of his career were stormy and his reputation as a teacher was fully acquired only after many bitter controversies, one of which was so acrimonious that it was fought out on the 'field of honor'."

Before going into the details of Pattison's life I should like to say that, as one of my predecessors, I shall endeavor to clear his name of at least one or two counts. I shall also attempt to prove that Pattison was a victim of circumstances who antagonized a few men and made a decided enemy of Dr. Nathaniel Chapman of the University of Pennsylvania. Chapman's behavior in this controversy, in my opinion, did him little credit.

Granville Sharp Pattison was the youngest son of John Pattison of Kelin Grove, Glasgow. He was probably educated at the University of Glasgow and must have been a hardworking student, for at the age of 18 he was made assistant to Allen Burns. On the death of Burns three years later, Pattison became his successor in the Chairs of Anatomy, Physiology and Surgery. During the next five years he earned quite a reputation as a lecturer, and became a recognized

*From the Department of Anatomy, School of Medicine, University of Maryland.

†Address before the Cordell Historical Society of the University of Maryland, April 20, 1938.

and estimable member of the then-existing societies and a contributor to their journals.

According to Pattison's pamphlets in November, 1818, Dr. Ure, one of Pattison's colleagues, charged him with having had improper relations with his wife, and a divorce was obtained by Dr. Ure on these grounds. The divorce was granted in February, 1819, before Pattison knew anything of the matter. Pattison challenged Dr. Ure as soon as he heard of the accusation and wanted to take the matter to court, but was told by his legal advisors that he could do nothing until Dr. Ure sued him for damages, owing to the peculiarities of Scotland's ecclesiastical courts from which the divorce was granted. Pattison's agents, however, went to Mrs. Ure to ascertain her object in supporting her husband in this infamous transaction. They obtained from her a letter saying that she had wanted a divorce and in order to obtain it, had been induced by her husband's threats and bribes to accuse Pattison. Dr. Ure had not fulfilled his promises in regard to certain sums of money and she, therefore, confessed that her declarations were false. The second action or suit against Pattison which would have enabled him to appear in court and disprove the charge was never instituted by Dr. Ure, even though Pattison remained in Glasgow four or five months. Miller states that: "In Glasgow and among the other members of the Andersonian Institute, the charge was generally discredited, for Dr. Ure did not possess an enviable reputation. In fact, a statement is made that he barely escaped transportation to Botany Bay 'for fraudulently stealing and destroying his father's will'."

This episode was just one of the many unfortunate ones for Pattison and even though it was generally known to be unfounded, it never ceased to be recalled and played an important rôle in the turbulent years which followed.

On this side of the water the situation at the University of Pennsylvania was this: Dr. Chapman was Professor of the Theory and Practice of Medicine; Dr. Physick was Professor of Surgery; Dr. Dewees was Professor of Obstetrics; Dr. Dorsey, the Professor of Anatomy, had recently died and his chair was being temporarily filled by Dr. Physick. As is usual when a chair is left vacant, the rest of the faculty held a conference to consider candidates to fill the vacant chair. As a result in this particular instance it appears that Pattison was informed of the vacancy by his brother, at the request of Drs. Chapman and Dewees.

To quote from Pattison's publications: "Hearing frequently from

my brother and writing him occasionally on the subject of the professorship, I continued to pursue my usual avocations, until I received on the 17th of May, 1819, Dr. Dewees's letter. From the letters I had forwarded I conceived that the rank I held in my profession would have been so well known in Philadelphia as to have prevented any gentleman from sending me such an invitation, unless, as he then expressed it, *my election was certain.* But unwilling to decide on a matter of such consequence without the advice of my friends, I went into Edinburgh on the morning of the 19th and laid the letter before them, to ascertain their opinion of its contents. And as they were unanimously of the opinion that Dr. Dewees's letter was *equivalent to an appointment,* I left that city the following morning for London, to take leave of my friends of the metropolis." (Pattison, 1820).

Miller writes of this matter as follows: "Shortly before sailing, while he was in London, Pattison was made a member of the Medico-Chirurgical Society of London and a Fellow of the Royal College of Surgeons. Had there been the stain on his character which was charged against him, it seems doubtful if these honors would have been bestowed on him.

"Just at this time there was a great deal of intrigue taking place in the faculty of the University of Pennsylvania, and in 1819 Philip Syng Physick allowed himself to be transferred against his will from the Chair of Surgery to that of Anatomy."

Upon arrival in Philadelphia Pattison learned to his great surprise and astonishment that Dr. Physick had been appointed to the Chair of Anatomy. Chapman and Dewees had told Pattison's brother that the transfer was necessary because there was another candidate for the position, a Dr. Hewson, whose friends had pressed the day of election. Had they not transferred Physick to that position, Hewson would doubtless have been elected. They also assured Pattison's brother that matters could be arranged satisfactorily by making Pattison the Professor of Surgery, and Pattison and Physick could then exchange positions. However, a few days later Dr. Gibson, Professor of Surgery at the University of Maryland, arrived in Philadelphia, and Pattison was then informed that Gibson was to hold the Chair of Surgery. Pattison was offered the opportunity of sharing a position with Gibson or Physick, but he refused to accept such an arrangement. According to Miller, "Chapman made the statement to Pattison that he thought by transferring Dr. Physick to the Chair of Anatomy and by bringing Dr. Gibson from Baltimore to occupy

the Chair of Surgery, the changes 'would operate beneficially in two ways. They would strengthen the University of Pennsylvania and at the same time weaken that of Maryland'."

After repeated promises from Chapman that were not fullfilled Pattison became impatient and informed the authorities at the University of Pennsylvania that before sailing he had ordered his assistant to pack his museum and hold it in readiness for shipment. This was now ready and he wished to know whether he should have it shipped or whether he could not depend on their promises. Chapman and Physick both urged him to have his museum shipped. The museum arrived. Pattison grew more suspicious of continued vague promises "and therefore began to give independent lectures on Anatomy and Surgery, and he says that he had 'a class of above 190 students'. The hour of Pattison's lecture was fixed after consultation with Chapman and was one which Chapman assured Pattison would not conflict with any of the Professors. When, however, Chapman learned that Pattison's lectures were popular with the students, he changed the hour of his own lecture to that used by Pattison and thus prevented the students from attending Pattison's lecture." (Miller.)

Pattison had previously declined the Chair of Anatomy at Transylvania University in Kentucky and also one at Maryland, but after this episode he accepted the Chair of Surgery at the University of Maryland in 1820. He hoped to leave behind him all the intrigue, deception and trickery that he had encountered at the hands of Chapman, but his hopes were in vain. Chapman followed him to Baltimore and in Pattison's words, "apparently for the purpose of shutting me out from the hospitality of the citizens by the most foul, the most malignant and the most false insinuations against my character."

According to Cordell: "On the 12th of October, 1820, Pattison wrote to Chapman, asking if he were responsible for the statement that he, Pattison, was the author of an anonymous letter. He demanded an immediate answer. Chapman made no reply. Pattison determined to proceed to Philadelphia at once for the purpose of demanding satisfaction, and sought the aid of Dr. Patrick Macaulay, of Baltimore, as his second. Dr. Macaulay wrote Chapman on the 17th that the letter which Pattison had sent had been written by his advice; that he had twice persuaded Pattison to delay going to Philadelphia, and he now asked for some explanation as to Chapman's conduct and intentions. To this letter Chapman replied on the 19th. He began with an account of Pattison's candidacy for the Chair of Surgery in the University of Pennsylvania.

"Then Chapman went on to speak of the motives which led Pattison to leave his native country. He said that it was in consequence of an odious deed and an incensed public opinion; that he had seen the proof of a trial in which Dr. Ure, one of Pattison's colleagues in the Andersonian Institution at Glasgow, had obtained a divorce from his wife on the ground of improper relations with Pattison. For these and other reasons, Chapman refused to have any intercourse with Pattison. On the receipt of this letter by Macaulay, Pattison's rage knew no bounds."

Miller states that Pattison went to Philadelphia, and on October 23, 1820 posted in two public places the following notice:

TO THE PUBLIC

Whereas, Nathaniel Chapman, M.D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc. etc. has propagated scandalous and unfounded reports against my character; and Whereas, when properly applied to, he has refused to give any explanation of his conduct, or the satisfaction which every gentleman has a right to demand, and which no one having any claim to that character can refuse, I am therefore compelled to the only step left me, and post the said Dr. Nathanial Chapman, as a liar, a coward, and a scoundrel.

Granville Sharp Pattison.

Following the European custom, Pattison resolved to stay two days in Philadelphia; but he says, 'My stay, however was not long left to my option . . . I was arrested at 11 o'clock A.M. of the day on which I had put up the post. Dr. Chapman denies all agency in the matter, be it so.'

Chapman endeavored to justify his declination of the challenge in a pamphlet which he had published in November, 1820. He said that he had received no formal challenge, but even if he had, the disparity of age (yet he was only a little over 40 at this time, just 12 years difference), the inequality of social condition, the claims of a numerous family and the obligations imposed by his public station would have prevented his acceptance. "It really would seem," he added, "under any circumstances not quite fit to have introduced my course of lectures with the spectacle of a duel.—With Mr. Pattison it is entirely different. He is an adventurer with a tainted reputation which he hopes to repair, etc."

The discussion thus begun was continued for some time. Among others Professor Gibson took part in the controversy and disparaged Pattison's claims to anatomical discovery. Pattison apparently claimed to have discovered what is now known as Colles' fascia. Gibson, probably inspired by Chapman, "found in Colles' Surgical Anatomy an unusually full and well written account of these very

parts which Pattison claimed as a discovery of his own." (Miller.) I have examined Colles' Surgical Anatomy and find that the account of this fascia, while it may be well written, is very brief probably because it was not known to be of practical importance. Pattison probably deserves credit for pointing out that certain postoperative results were best explained by the presence of this structure. Had it not been for the personal antagonism of these men, this fascia might have been named after Pattison instead of Colles.

Dr. Chapman in September, 1820 published a pamphlet on the official transcript of "The Divorce of Andrew Ure, M.D., vs. Catherine Ure for adultery with Granville Sharp Pattison" and distributed 10,000 copies. Pattison immediately published a refutation of all the charges made in Chapman's writings. In the conclusion he says, "having seduced me from my country he has deceived me with promises; he has attempted to blacken and blast my reputation, and when he has driven me by unmerited insults, which no man who had a spark of feeling could submit to, to ask from him an explanation, he has as an apology for his cowardice, circulated over the whole continent, a slander of a description most destructive and poisonous to the reputation of a professional character."

The following year, 1821, Chapman issued another pamphlet on the same subject and published two editions. Pattison immediately published a final reply to these numerous slanders. In this pamphlet he spoke of Chapman's motives for all the slander. "Chapman has endeavored to persuade gentlemen at a distance that the University of Maryland is a school where they must not trust their *sons, because Mr. Pattison holds a professorship in it.* The impotent efforts to injure the University of Maryland by the circulation of slanders against its Professor of Anatomy has not been confined to Dr. Chapman. One of his colleagues has been equally active.

"The Professors of Surgery (Gibson) and of the Practice of Medicine (Chapman) in the University of Pennsylvania, if they flatter themselves that by a line of conduct so base and so dishonourable they will be enabled to injure either my reputation or the standing of the University of Maryland, have miserably mistaken the feelings of their countrymen. Both the University of Maryland and my character are open to free and critical examination of a discerning public. If undeserving of public support, it will speedily be withdrawn from us, but if it is otherwise—if we can substantiate our claim to the patronage of our countrymen, neither backbiting, nor slander, nor the circulation of falsehood will have the effect of removing it from us.

"I have now forever done with these men. To engage in con-

troversy with such, I have proved is useless; for by them truth and honor is disregarded. Ten months they have been engaged in the filling of their 'green bag', which has been opened and its contents circulated over the whole face of the country—I have now refuted these, and should they ever hatch up any other calumny, I shall treat it with the silent contempt it merits."

In a year or so, the affair became more serious than a battle of words. According to Cordell, "Upon General Thomas Cadwalader devolved the duty of maintaining the honor of his native city against our belligerent Scotchman. He and Professor Chapman were brothers-in-law, and he became accidentally involved by resenting an insult offered to Chapman by Pattison in his presence. The result was a challenge and a hostile meeting. The duel took place in 1823 or 1824 somewhere in Delaware and both parties displayed great coolness and unflinching courage. Cadwalader was severely wounded, the ball of his opponent's pistol entering his pistol arm near the wrist, traversing the entire length of the forearm and lodging in the head of the ulna*; it remained there throughout his life, causing great irritation, impairing his health and it was thought actually shortening his life. Pattison escaped without injury, but a ball passed through the skirt of his coat near the waist."

The University of Maryland was in the doldrums when Pattison arrived in 1820, but he seemed to have infused new vigor into the Institution. Pattison had brought with him the anatomical preparations which had been accumulated by Burns and had been bequeathed to him by the latter. This collection, like its owner, was extensively advertised in the medical journals and newspapers of the country. The influence which Pattison now exerted in the councils of the University was paramount and he used it to dispose of his collection. It was purchased by the Faculty for an anatomical and pathological museum for $8000, and Practice Hall was erected shortly after (1821) to give it accommodation.

As a teacher, Pattison seemed to be quite successful and the University not only flourished but was well attended under his influence. In 1826 he resigned and returned to England. Neither Cordell nor Miller seems to have discovered any good reason for this act. Cordell states that it was "on account of bad health and uncongeniality of climate." In a footnote he makes the following statement, which seems to me is not to be relied upon as it is based on the statement made seventy years after this period. "Pattison's career in Baltimore was not a very reputable one in a moral point of view. He led a 'gay'

*Olecranon process according to B. N. A.

life and so undermined his health thereby that when he left here his recovery was considered doubtful. He is said to have 'taken so much mercury that he was afraid to take hold of the doorbells, for fear of an electric shock' (statement of a gentleman still living). There are traditions still extant of his amours with ladies of fashion." Pattison's twenty-six years of active service which followed his stay in Baltimore is the strongest evidence that he had not impaired his health.

With the assistance of the energetic Chapman to advertise him in pamphlets as he did, Pattison probably had to do very little to establish such a reputation. That Miller should not discern the real reason for Pattison's resignation is understandable, for he had made a study of Pattison's life and not of the history of the University of Maryland. It is surprising, however, that Cordell did not note that Pattison's resignation coincided with the transfer of the control of the University from the Regents to the Board of Trustees. In discussing the revolt of the Faculty in 1837 which resulted in the overthrow of the Trustees and the court decision that their appointment by the legislature in 1826 was unconstitutional, Cordell says: "It will be remembered with what a bad grace the Faculty submitted to the authority of the Trustees in 1826, and how they were only deterred by the most formidable obstacles from testing the legality of the law deposing them from their rights. They tried to nourish into vitality a faint hope that things might not all go as badly as they anticipated. They were forced to make application for their former positions, which had been declared vacated by the Trustees, and to receive them back from the hands of the latter. This was a humiliating proceeding for them and did not leave them the better disposed towards the new rulers who had been imposed upon them. They felt keenly, too, the loss of the privileges and authority which they had enjoyed for so many years, and realized painfully the inferior position to which they had been reduced."

Evidently Pattison was the only one of the Faculty who had the entodermal fortitude to resign.

In July, 1827 he was appointed Professor of Anatomy in the newly organized University of London. Here he again encountered an adverse set of circumstances which, after four years, led to his dismissal. Lack of time prevents more than a mere mention of the factors involved.

First, he was a Scotchman who had taught Anatomy in Scotland and America and according to Miller, "If anyone doubts the attitude of London at this time towards Scotchmen, led him read 'The Life and Labors of Sir Charles Bell and His Letters.'"

Second, by enforcing discipline in his classes he had incurred the dissatisfaction and complaints of certain of the students who were the pets of some of the other faculty members. It appears that these other professors, Drs. Turner and Thompson, not only listened to the student complaints, but behind closed doors were actually supporting and influencing them to make the complaints. A more unethical conduct on the part of a professor I cannot imagine.

Third, the University of London had appointed a Mr. Bennett as demonstrator in Anatomy without consulting Pattison. Pattison complained of Bennett's appointment as a grievance "as one unheard of in any medical institution in Europe and said 'that the independent nature of his appointment permitted him to intrigue against me with impunity.'" Bennett was one of the ringleaders of the complaining students.

Fourth, Wakely, the editor of Lancet, being an Englishman, was opposed to the Scotch, and therefore antagonistic toward Pattison and supported Bennett and the students.

Fifth, the straw that broke the camel's back was that Bennett, Drs. Thompson and Turner and the rebel students obtained some of the pamphlets which Chapman had published previously. These Wakely republished in the Lancet in August, 1830. The following month Pattison published a letter of explanation, along with letters of recommendation from important people in the United States, including one signed by the Secretaries of War, Treasury, Navy, State, and the Attorney General. A few months later, however, Pattison was dismissed.

Miller states: "Pattison was not long without a professorship, for in 1832 he took up his duties as Professor of Anatomy in the Jefferson Medical College in Philadelphia, where he met with immediate success. Pattison remained in Philadelphia until 1842, when he joined in founding the Medical Department of the University of New York. Here he held for the remainder of his life the Professorship of General Descriptive and Surgical Anatomy.

"With his return to this country, the strife and turmoil of his life very largely disappeared. He married a Scotch lady by the name of Sharp who was possessed of some fortune. The marriage proved to be a very happy one. Gross gives a pleasing picture of their domestic life. He was ever ready to do a kind act, a lover of the beautiful in nature and art. He took an active interest in establishing the Grand Opera House in New York. He was also an enthusiastic disciple of Izaak Walton.

"Pattison was the author of The Register and Library of Medical

and Chirurgical Science. He edited with notes several textbooks of anatomy; he was one of the editors of the American Medical Recorder, a journal which contains many of his contributions to medical literature."

Pattison received the honorary M.D. late in life. From the facts derived from a careful study of the discussions in the Lancet and which I have enumerated, I am inclined to disagree with Cordell when he states: "It is hard to reconcile the events in London with the exalted estimation in which he was held as a teacher and lecturer in America."

The final remarks by Pattison in the discussions with Wakely in the Lancet is interesting in this connection. "In the letters of Drs. Turner and Thompson, and in your 'strictures' on my statement, the fact of my having been a successful teacher in the United States is treated with contempt. 'It does not follow', observes Dr. Turner, 'that he could succeed in London because he was successful in America.' The Americans, forsooth, are easily satisfied. It is very well for John Bull to say so (says Pattison). I should, however, have expected that you were too well informed as to the state of medical science in the United States to have given currency to such a vulgar and unfounded prejudice. The Americans, I assert, are as far advanced and as enlightened in their medical opinions as any country in Europe; and I would further assert, without the fear of contradiction, that there may be numbered amongst the medical profession of that country, gentlemen who, for extent and profundity of knowledge, and for capacity of conveying instruction, have no reason to fear comparison with the most eminent teachers in Europe. Let the improvements in medical and chirurgical science be reviewed for the last thirty years, and it will be found that America has furnished her full quota." (Pattison.)

Miller states that: "This defense of American medicine and American medical men by one who had good reason for resentment shows Pattison to have been a man of more character than is generally acknowledged."

In 1821, in answer to Gibson's disparaging remarks about his scientific accomplishments, Pattison made another statement that probably deserves further investigation. "I was the first in Europe who recommended the opening of the belly for the removal of tumours from that cavity, and it is true that it was stated in the 'Bulletin' that what I had done was in opposition to the established principles and authority of surgery. But the object of my essay was to overturn some of these, and to prove by the recital of a case, where life was

certainly saved by the operation, that the axiom delivered to us from Hippocrates 'that wounds of the belly are fatal' was one supported not by truth, but by prejudice. My proposal for removing diseased ovaria which was highly objected to, has, by the experience of an eminent surgeon of Kentucky, Dr. McDowell, who has several times with success performed the operation, been demonstrated to have been most just and scientific." (Pattison.)

In view of the fact that McDowell did his first ovariotomy in 1809 and failed to publish an account of it until 1817, Pattison may well have performed an ovariotomy or other abdominal operation and reported it without knowing that this had been done by McDowell. In this connection it is interesting to note that McDowell was given his honorary M.D. from the University of Maryland in 1825, or during the time Pattison was most influential in its councils, and it is quite probable that he had some influence in this.

The review of Pattison's life leaves us with the impression of a man of talent and courage who was attacked with a virulence which might well have blasted the career of an individual of lesser determination and pugnacity. The story of his feuds with Chapman and others form a piquant episode in the early medical history of this country.

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Professor Pattison's Statement of the Facts of his Connection with the University of London. (Pamphlet.) London, 1831.

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ALUMNI ASSOCIATION SECTION

DR. FRANK S. LYNN

Dr. Frank S. Lynn died in the University Hospital at 11:45 on the Monday morning of the 26th of September. His death was due to apoplexy with which he was stricken about midday on the Wednesday before. He had just finished two operations that morning and became suddenly ill while sitting quietly in conversation.

His illness and death came as an unexpected shock to his many friends and associates, and from that moment to the present time the hospital in which he was so much interested and where he spent the greater number of his working hours has been a sorrowful place. Visiting staff, house officers, nurses, patients and all those whose work helps to make the hospital an efficient place have been saddened by his death.

Dr. Lynn was a native of Baltimore, went through the five year course at City College where he graduated in 1903, and that autumn began the study of medicine at the University of Maryland, graduating in 1907. He was an outstanding student and was the honor man in his class.

After graduation he was intern and resident surgeon in the University Hospital and after completing this service he did post-graduate work at the University of Strasbourg where Professor Chiari, the famous pathologist, was teaching.

Dr. Frank S. Lynn

On returning to America he joined the surgical staff of the University Hospital and advanced rapidly through the different ranks of University service from Instructor in Surgery (1911–1914), Associate in Surgery (1914–1916), Associate Professor of Surgery (1916–1926), Clinical Professor of Surgery (1926–1932) to Professor of Clinical Surgery 1932 until his death. From 1911 until a few years ago he was Assistant Surgeon-in-Chief at the City Hospitals and during all these years he carried a heavy burden of teaching to undergraduates, in the training of house officers and the care of surgical patients in all departments of the University and City Hospitals. He also found time for work in other hospitals and was a well-known figure in the surgical life of Baltimore.

When the medical care of prisoners in the Penitentiary and the House of Correction was reorganized about twenty years ago, he undertook the responsibility for the surgical care of inmates in both of these prisons. He was also assistant to the chief surgeon of the Baltimore and Ohio Railroad.

He was keenly interested in the Baltimore City Medical Society and the Medical and Chirurgical Faculty of Maryland and was always ready to perform any service asked of him by his medical brothers. He served on many committees, was Secretary of the Baltimore City Medical Society from 1919 to 1923 and President in 1935. He was especially interested in Hospital Insurance and took a very active part in the different phases of this very important modern hospital service during its development in Baltimore. When he died he was a director, representing the medical profession in the Associated Hospital Service of Baltimore and First Vice President of the Medical and Chirurgical Faculty of Maryland.

Dr. Lynn was a vestryman at Saint Michael and All Angels Episcopal Church. This experience was a real one for him and in it he found solace and a measure of peace; a fine thing for his tempestuous and anxious nature.

He did not shirk his obligations and was active in the many organizations in which membership is often part of a physician's duty. Honors and recognition came to him also. He was a member of the American Surgical and the Southern Surgical Associations and many local clubs, both medical and lay, wherein men of similar ideals and standards enjoy companionship. In the midst of this busy and, to him, very interesting life, he found time to write. His more recent papers are:

The Diabetic from the Surgical Standpoint.

Postoperative Gangrenous Ulcer of the Abdominal Wall.

The Elective Transverse Abdominal Incision.

The Surgical Consideration of the Typhoid Carrier.

He married Miss Clyde Clayton Dawson of Grifton, North Carolina, who before her marriage had graduated from the Nurses' Training School of the University Hospital. There are two sons, Frank S. Lynn, Jr. now at the University of Virginia and William D. Lynn, who is at Princeton University.

To those of us who were associated with Dr. Lynn his spirit seemed always young, and it is hard to think of him as being dead. He had a vivid and dynamic personality. If the term magnetic may be used to describe human attributes, this adjective is descriptive of him. His presence in any group was a challenge against indifference, inaccuracy, carelessness and procrastination. His honesty and fearlessness were an integral part of his character. One might not agree with him, but it has been a striking thing that in his passage through life those who differed with him most loved him best.

As teacher, leader and operator undergraduates, house officers and younger physicians found in him a never failing stimulus to better work. His keenness, energy, conscientiousness and never faltering interest were like so many lights to guide and encourage them and now that he is dead these lights are darkened and there is no one to take his place, for in him there dwelt a brave and crusading spirit that fronted the manifold problems of living with zest and without guile.

ARTHUR M. SHIPLEY.

The Mercy Hospital
wishes to express its
sorrow at the death of

DR. FRANK S. LYNN
on September 26, 1938

ITEMS

In June, 1938 Dr. Louis H. Douglass was appointed Professor of Obstetrics in the School of Medicine. Dr. Douglass has been associated with the Department of Obstetrics since his graduation in 1911. He served under the late Dr. L. E. Neale and Dr. J. M. H. Rowland. When the latter resigned from the Chair of Obstetrics in 1937, Dr. Douglass was made acting head of the department, and this summer was appointed to the full professorship.

Dr. Ferdinand A. Ries (U. of Md. 1921) announces the removal of his office to 300 East North Avenue, Baltimore, Maryland, for the practice of neuropsychiatry.

Dr. Joseph G. Zimring (U. of Md. 1936) is now engaged in private practice at 306 Riverside Boulevard, Long Beach, New York.

Dr. John C. Dunbar (U. of Md. 1934) announces the opening of an office at Room 518, Empire Building, Pittsburgh, Pennsylvania. His practice will be limited to diseases of the eye and refraction.

Dr. Mortimer D. Abrashkin (U. of Md. 1932) has been reappointed assistant in orthopedic surgery at the New York City College of Medicine for 1938–1939. He has also received a commission as Captain in the Medical Corps of the Connecticut National Guard and the National Guard of the United States, and assigned for duty with the 102nd Infantry, Connecticut National Guard.

Dr. E. N. Boccanegra Lopez (U. of Md. 1916), special lecturer in mycology in the department of dermatology and syphilology, New York Polyclinic Medical School and Hospital, was elected a fellow of the American Academy of Dermatology and Syphilology in August, 1938.

Dr. Christopher C. Shaw (U. of M. 1931) of Bellows Falls, Vermont, has been elected President of the Windham County Medical Society.

Mrs. Nathan Winslow recently made a gift of several hundred books to the Department of Operative Surgery and the Library of the School of Medicine in memory of her husband. These books, which are mainly on surgery, will form a memorial to Dr. Winslow, who was deeply interested in the University and the Library in particular. Each book will bear the special Nathan Winslow memorial bookplate.

The Wistar Institute of Philadelphia has presented to the Library of the School of Medicine thirty-seven volumes of the Journal of Comparative Neurology. These include publications from 1906 to 1935 and should prove a valuable addition to the Library.

DEATHS

Anderson, Joseph A., Antreville, S. C.; class of 1886; aged 76; died, April 10, 1938, in the Anderson (S. C.) County Hospital.

Ard, Frank C., West Field, N. Y.; class of 1887; aged 74; died, August 23, 1938. Dr. Ard was the first eye, ear, nose and throat specialist in Plainfield, N. J., where he practiced until his retirement six years ago.

Bolt, James L., Easley, S. C.; B.M.C., class of 1895; aged 65; died, April 11, 1938, of coronary thrombosis.

Clarken, James Valentine, Baltimore, Md.; B.M.C., class of 1908; aged 51; died, April 17, 1938, of coronary thrombosis.

Craighill, James M., Baltimore, Md.; class of 1882; at one time clinical professor of medicine at his alma mater; aged 81; died, May 19, 1938, of myocarditis.

Donohue, John James, Uncasville, Conn.; B.M.C., class of 1909; aged 80; died, April 17, 1938, of heart disease and paralysis agitans.

Enos, Joseph Clive, Charleroi, Pa.; class of 1904; aged 56; died, May 4, 1938, in the Allegheny General Hospital, Pittsburgh, of edema of the brain.

Free, Spencer Michael, DuBois, Pa.; P. & S., class of 1880; aged 81; died, May 16, 1938.

Gilbert, Luther L., Prospect Station, Tenn.; P. & S., class of 1886; aged 72; died, April 30, 1938, of aortic regurgitation.

Gyles, Ryan Alfred, Blackville, S. C.; class of 1891; aged 67; died, June 26, 1938, of coronary occlusion.

Haizlip, John H., Nederland, Texas; P. & S., class of 1897; aged 65; died, April 11, 1938.

Hansen, Ejnar, New York City; class of 1904; aged 67; died, May 13, 1938, of coronary occlusion.

Hartman, George J., Pasadena, Calif.; B.M.C., class of 1902; aged 62; died, April 21, 1938, of cerebral hemorrhage.

Howe, George J., Central Falls, R. I.; P. & S., class of 1892; aged 69; died, June 6, 1938, of myocarditis.

Johnson, James T., Cumberland, Md.; B.M.C., class of 1892; aged 69; died, April 1, 1938, in the Allegheny Hospital.

Luther, Frederick Martin, Allenhurst, N. J.; P. & S., class of 1880; aged 84; died, May 28, 1938, of cardiovascular renal disease.

MacCalman, Duncan, Baltimore, Md.; B.M.C., class of 1895; served during the World War; aged 73; died, March 14, 1938, of carcinoma of the colon.

McAllister, John Craig, Ridgway, Pa.; P. & S., class of 1889; aged 76; died, April 18, 1938.

Overmiller, Noah Allen, East Prospect, Pa.; B.M.C., class of 1895; aged 71, died, April 19, 1938, of pneumonia.

Parke, Joseph Richardson, Philadelphia, Pa.; P. & S., class of 1889; veteran of the Spanish-American War; aged 84; died, March 8, 1938, in the Pennsylvania Hospital, of injuries received in a fall.

Patton, William O., Robbinsville, N. C.; P. & S., class of 1882; aged 77; died, March 2, 1938, of organic heart disease.

Paxton, Rutherford H., Westcliffe, Colo.; P. & S., class of 1885; aged 74; died, April 27, 1938, of cerebral hemorrhage.

Reik, Henry Ottridge, Weehawken, N. J.; class of 1891; served during the World War; aged 70; died, June 2, 1938, of coronary thrombosis and myocarditis.

Sutton, Stark Armistead, Norfolk, Va.; class of 1894; aged 65; died, April 1, 1938, of pneumonia.

Thomas, George N., Presidio, Texas; P. & S., class of 1905; served during the World War; aged 60; died April 15, 1938.

Trefethen, William J., Wilton, Maine; P. & S., class of 1894; died, July 24, 1938.

Whitfield, William Cobb, Salisbury, N. C.; class of 1884; aged 77; died, May 13, 1938, of cerebral hemorrhage.

Woodford, Alonzo Howe, Belington, W. Va.; class of 1892; aged 78; died, April 16, 1938, of uremia.

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VIRUS DISEASES*†

GEORGE M. SETTLE, A.B., M.D.
BALTIMORE, MD.

No pretense of originality is made for anything contained in this paper. However, the writer has for a long time been much interested clinically in the etiological significance of viruses as causative factors in what definitely are new diseases of the nervous system, and what will be said about the definition of a filterable virus, and how the virus acts, is a condensation of a great deal of literature, with a considerable amount of clinical knowledge of the action of viruses as causative factors in many diseases.

With the discovery that minute animals and plants in the form of protozoa, spirochetes, fungi and bacteria are responsible for certain infectious diseases, it became customary to assume that all infectious maladies arise through the action of such agents or their toxins. Even after it was demonstrated that many disease-producing agents are smaller than ordinary bacteria, most investigators still thought that such agents possessed the characteristics of bacteria and differed from them only in respect to size. Indeed, for a long time a large part of the activities of investigators was directed toward the cultivation of them on lifeless mediums similar to those used for ordinary bacteria. However, from the time it was shown that certain infectious agents pass through filters that hold back ordinary bacteria, it was thought that perhaps these small agents might differ from the larger and better known ones. Occasionally an investigator has been bold enough to state that at least some viruses are not living organisms but inanimate

* From the Department of Neurology, School of Medicine, University of Maryland.

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substances capable of producing disease in one host after another, not through autonomous multiplication but through their repeated fabrication in properly stimulated or injured host cells.

The word virus means poison and, before the relation of bacteria, fungi, spirochetes and protozoa to disease was recognized, it was customary to use it in a noncommittal manner to designate unknown or undiscovered causative agents considered responsible for certain maladies. As the etiologic agent of one disease after another was discovered, the term also began to be used at times to indicate known infectious agents. For example, the virus of syphilis was the equivalent of Spirochaeta pallida, while it still was also being used to designate the unknown. In view of Koch's postulates, infectious agents that had not been seen and cultivated on lifeless laboratory mediums were considered to be undiscovered or unknown, in spite of the fact that investigators were able to experiment with some of them, e.g., the viruses of cowpox and smallpox, and to use them for prophylactic purposes. Thus at one time workers considered and a few still look on the virus diseases as a heterogeneous group in which all maladies of unknown etiology are placed. To the informed, however, the term virus is as specific in its designation as is the word bacterium, and the expression virus variola or virus of smallpox is as definitive as is the expression bacillus typhosis, or bacillus of typhoid. Consequently, infectious diseases are now divided into groups caused by bacteria, spirochetes, fungi, protozoa, Rickettsia and viruses, respectively, in addition to those diseases of as yet unknown etiology.

There is a large group of diseases affecting man, animals, insects and plants, which have most or all of the characteristics of infectious diseases, yet in which no visible microscopic organism has been satisfactorily demonstrated. That these diseases are infectious is shown by the fact that it is usually possible to reproduce them in normal hosts by inoculation not only of the ground-up diseased tissue, but also of cell-free extracts or filtrates of the tissue. Since these cell-free extracts are most commonly obtained by filtration, the practice has grown up of referring to the specific infecting agents contained in them as "filtrable viruses". This term is sanctioned by usage, but it should be emphasized that as not all these viruses have yet been shown to be filtrable, and as the exact standardization of filtration has not yet proved possible, the term "filtrable" is necessarily a loose one. If one forgets for a moment the conception that infectious disease is always a state in which a purely extraneous unit multiplies by independent metabolic processes at the expense of the host, it is possible to arrive at a gradation of infectious agents somewhat as follows.

At one end of the scale there are metabolically independent units such as bacteria, which can thrive and multiply both in the body and on artificial media. More strictly parasitic than these are invaders which depend for multiplication and metabolism more and more closely upon specific environmental conditions in the animal body. Still more severely dependent are the next class, the Rickettsiae, which appear to desire intracellular conditions for growth but still seem to be capable of multiplication by their own metabolic processes. From this it is only a step to the virus agents which multiply only intracellularly and which appear to depend for increase and survival upon the cooperation of the metabolism of the invaded cells.

Viruses are probably organized bodies which are usually invisible by ordinary microscopic methods of examination; which have a diameter of less than 0.2μ; which can often be filtered through candles and membranes impermeable to ordinary bacteria; which have not not yet been cultivated in cell-free media, but which multiply freely in the presence of susceptible cells in vitro or in vivo; which frequently invade one particular species of host and tend to affect one particular tissue; which give rise to characteristic inclusion bodies in the tissues, and which cause a latent or overt infection followed as a rule by a lasting immunity.

There has recently been a world-wide study of the problem of the etiological significance of viruses as causes of disease. New methods, new technics, new apparatus, and new laboratory animals have been discovered and put to use. New viruses are continually being announced as the causes of diseases of man, animals, plants, and even bacteria. These previously baffling invisible agents are being measured by ultrafiltration, or by their behavior in the intense centrifugal field, and are being concentrated in specially devised high-speed centrifuges. Their power to stimulate the production of protective and other antibodies is being studied by quantitative immunological methods, and has become the basis of various useful tests. Their degrees of virulence for different animals and for the various tissues of the same animal are being studied and modified. They are being grown in living cells in standard laboratory glassware by simple tissue culture technics, or even in living embryos in egg or uterus, both for producing virus in quantity for commercial purposes and for intentionally altering its virulence for certain tissues. For investigational purposes it has been found possible to store virus strains for years without change of character, after drying in the frozen state and sealing in glass tubes. Methods of protective vaccination are being devised and tested for efficacy and safety. Chemical and physical

methods are being increasingly applied in bringing to light important evidence of the fundamental nature of viruses. In fact, more is already known about some of the viruses than about many of the bacteria whose morphology and cultural characteristics have long been familiar.

The number of diseases of man known to be caused by filtrable viruses is already large, and there are additional ones probably so caused. Those regarded as definitely in the virus group include smallpox, vaccinia, measles, mumps, epidemic influenza, a variety of common cold, poliomyelitis, psittacosis, herpes simplex, rabies, encephalitis of the St. Louis type, Japanese type B encephalitis, lymphocytic choriomeningitis, lymphogranuloma inguinale, foot-and-mouth disease, Australian X disease, various sheep diseases, yellow fever, dengue, certain kinds of warts, and molluscum contagiosum. The additional diseases strongly suspected of being caused by viruses include German measles, chickenpox, epidemic encephalitis or Economo's disease, and herpes zoster.

No attempt will be made to review the various theories that have been advanced on the nature of filtrable viruses. Whether they are organized living bodies reproducing themselves by fission or other means, whether they are unorganized semifluid menstrua capable of unlimited reproduction, whether they resemble enzymes in being unorganized but capable of continuous survival and activity, or whether they behave like an inanimate poison which regenerates itself on contact with normal cells, is a matter that can be disputed endlessly without final agreement being reached. In the opinion of most workers the evidence is becoming increasingly stronger that the filtrable viruses are essentially minute micro-organisms. Each of the various properties of the viruses can be paralleled by inanimate matter. As Andrewes points out, so far as is known nothing but a living organism possesses at one and the same time all these various properties.

In segregating the so-called virus agents from known infectious micro-organisms, such as bacteria, many features have been stressed, notably those of size and filterability, inclusion bodies, specificity, and immunological phenomena. Much could be said about all of these, but the author wishes to limit himself to the selection of a few simple facts on the basis of which virus agents can be, if not classified, at least fundamentally described.

Of these the most important are those made in studies on cultivation. It can be said positively that up to now no one has succeeded in obtaining cultural multiplication of a virus except in the presence of living cells. In other words, the multiplication of a virus seems to

require either some delicate nutritive constituent of cells, or the actual participation of metabolic cell activity. Which is it? This has not yet been answered.

Before describing the known properties of viruses it is desirable to touch on some of the technical difficulties in their study. With regard to filtration it may be stated categorically that the ability of a particulate body to pass through a filter is not a simple function of the relation of the size of the body to the size of the pores; that is to say, a filter is not a mere mechanical sieve. Several factors other than the size of the filter pore determine whether a given body will pass through it or not. Thus, according to Rivers (1928), "the electrical charge on the virus, the electrical charge on the filter, the adsorption of the virus by aggregates of protein or by cell detritus, the amount of protein or other substances in the virus emulsion, the temperature at which the filtration is conducted, the amount of negative or positive pressure employed, the duration of filtration, and other factors—serve to influence the results of all filtration experiments." In solutions more acid than the isoelectric point of the protein, the dissociated protein is chiefly in the form of multivalent cations capable of entering into combination with the silicate anions in the filter, and forming an insoluble combination, which is retained. On the other hand, in solutions more alkaline than the isoelectric point, the dissociated protein is chiefly in the form of multivalent anions capable of entering into combination with the alkaline earth cations in the filter with the formation of soluble salts, which pass through. This is probably why enzymes, toxins and viruses appear to pass more readily through filters in weakly alkaline than in acid solutions. The nature of the suspending fluid plays an important part in determining the result. Several workers have noted that viruses pass much more readily through filters when the suspension is made up with broth or serum than with a saline or phosphate buffer. Another factor, which is of special importance in comparing the filtrability of two different strains of virus, is the initial concentration of virus. The greater the number of virus particles present in the suspension, the more likely is virus to be found in the filtrate.

It is important to realize that the mere passage of an organism through a filter candle does not justify its inclusion in the group of filtrable viruses. Even under conditions of careful experimentation, small organisms, particularly slender flexible and motile organisms such as spirochetes, frequently appear in small numbers in the filtrate; and conversely, the mere failure of an organism to pass through a filter candle does not justify its exclusion from the group of filtrable

viruses. Some viruses, for example, such as those of varicella and herpes zoster, have not yet been shown to be filtrable, yet there is little doubt from what is known of their other properties that they should be included in this group. Filters of porcelain or diatomaceous earth are useful for the separation of bacteria from viruses, but through them little or no definite size of the viruses can be obtained.

In recent years the process of ultrafiltration has been introduced. In this process thin collodion membranes are prepared with a given size pore, the size being determined largely by the concentration of collodion used. Starting from the earlier work of Bechhold, Elford has been able by the use of appropriate solvent mixtures, and by the careful standardization of his technic, to prepare a series of membranes of very regular and accurately graded porosities by means of which determinations of the size of many of the commoner viruses have been successfully made, and subsequently confirmed by other workers. These filters approach nearer to the mechanical sieve than do ordinary filters; they appear to be less influenced by various secondary factors and to be capable, when properly used, of sorting out particles very largely according to their size. However, the influence of the pH of the suspending fluid and of the electrical charge carried must still be taken into account.

By means of them it has been shown that not all viruses are of the same magnitude, although the size of the infectious units of each virus is remarkably constant. Some viruses, e.g., psittacosis with a diameter of 300mμ, are relatively large, while others, e.g., those of foot-and-mouth disease and poliomyelitis, are very small with diameters of from 8 to 15mμ (or 1/100 the size of an ordinary staphylococcus).

Considerable attention has been devoted recently to methods for rendering small bodies visible. Though certain filtrable viruses may be demonstrated in sections or smear preparations, their study is greatly facilitated by obtaining them in a suspension relatively free from tissue cells and other gross matter. Usually this is done by differential centrifugation, sometimes accompanied by filtration. The suspension can then be examined by one of the following methods:

I. Fixing and staining with a suitable dye. By this means minute particles, the so-called elementary bodies, may be rendered visible in appropriate preparations. Since, however, it is impossible to demonstrate very small particles by transmitted light, even when they are deeply stained, it follows that this method is limited to the larger viruses. Its most conspicuous success has, in fact, been achieved hitherto with the virus of vaccinia, the diameter of which is about 150mμ.

II. Dark ground examination by the use of visible light. Provided the particles under examination can scatter enough light, and there is a sufficient difference of refractive index between them and the medium in which they are suspended, this method enables very small particles to be rendered visible even though they are incapable of resolution.

III. Photography in ultraviolet light. After preliminary examination by method II, photographs are taken at particular wave lengths in the ultraviolet spectrum. Either transmitted or dark ground illumination may be used. The former suffers from the disadvantage that the ability of viruses to absorb light is very low, and the image so obtained is smaller than it otherwise would be. With dark ground illumination there is strong contrast and sharply defined images are obtainable, though their size tends to be slightly too large. With a wave length of 257mμ particles as small as 75mμ can be actually resolved. Their approximate size can then be determined from the mean of the images given by transmitted and dark ground illumination.

With regard to centrifugalization there are great mechanical difficulties in constructing a machine that is sufficiently powerful to throw down very fine suspended particles, and this difficulty is increased if the suspending fluid, as is usually the case, has a specific gravity greater than water. The centrifugal force of a machine varies with the square of the rate of rotation and directly with the distance of the centrifuged material from the centre of the plate, but neither of these factors can be increased indefinitely because with increasing rate of rotation, and with increasing diameter of the plate, a vibration develops that very largely counteracts the centrifugal force. Numerous other mechanical factors, such as the air resistance and the heat generated in the machine, come into play when high speeds are developed, and limit the rate and time during which the machine may be run. Nevertheless, serious attempts have been made in recent years to overcome these difficulties and very real progress has been registered. The introduction of higher speed electric motors, of the Lundgren angle centrifuge, of the spinning top centrifuge of Henriot and Huguenard, and of the centrifuge of Syedberg and his colleagues have each contributed to this end. Indeed, with the spinning top centrifuge, in which friction is diminshed to a minimum, speeds of 80,000 r.p.m. have been reported.

Inclusion bodies. Histological examination of the lesions occurring in filtrable virus diseases often reveals the presence within the cytoplasm or the nucleus, or sometimes both, of peculiar bodies whose nature is at present unknown, and which are usually referred to as "inclusion bodies". Clinically all of us are familiar with them as

exemplified in the Negri bodies of rabies. The appearance of these bodies varies in different diseases, and often in the same disease in different animals. The bodies may be rounded, oval, pyriform, or irregular in shape; their substance may be hyaline or granular; in structure they may be homogeneous, or they may contain one or more, often several, elementary corpuscles, and in their staining reactions they may be basophilic or acidophilic. In many diseases affecting the skin, such as fowl pox, human variola and the common wart, the formation of inclusion bodies is restricted to the epidermis, but in others, such as zoster, varicella and venereal herpes, they are found both in the epidermis and in the corium. Inclusion bodies can be produced experimentally only by the inoculation of living viruses and they are never formed after inoculation of dead viruses, even though the latter have immunizing properties, e.g. vaccinia and herpes.

The earlier workers regarded these inclusion bodies as protozoa and pictured them as varying stages of an elaborate life cycle. Subsequently they were believed to represent cellular degeneration products caused by nucleolar extrusion, vacuolation of the cytoplasm, and other processes consequent on the attack of the virus.

It is, however, becoming increasingly clear that intracellular inclusion bodies are essentially colonies of the infecting virus, and microscopical, filtration and centrifugal observations leave no doubt that they are of particulate nature. In the case of the few viruses in which a comparison by these different methods has proved possible, the agreement between the results is very striking. It has, in fact, been so good as to make it necessary to conclude that, if the visible coccoid bodies are not the infective units of the virus, they must be particles of the same size, but for some unknown reason invisible either by direct observation or by ultraviolet photography (Dale, 1935). One of the stumbling blocks to their admission into the world of micro-organisms is their extremely small size.

Cultivation. With the exception of various saprophytic viruses, which can be grown on blood agar or in serum broth, the filtrable viruses have proved impossible to cultivate in the absence of living cells. In 1915 Noguchi succeeded in obtaining pure cultures in vivo of vaccinia virus, by growing it in the testicles of rabbits and bulls.

In 1925 Parker and Nye succeeded in growing the vaccinia and herpes viruses in tissue cultures prepared with normal rabbit testis and plasma. This was confirmed by Carrel and Rivers in 1927, working with the vaccinia virus. Infected rabbit testicle was ground up in a mortar, added to chick-embryo pulp, left for twenty-four hours in the ice-chest, and then inoculated into a Carrel flask contain-

ing a coagulum of hen plasma. After periods varying from one to four weeks the contents of the flasks were withdrawn, ground up in a mortar, and titrated on rabbits by the intradermal method. It was found that the cultures, which were seeded with 25 to 250 intradermal units of virus per c.c., contained after incubation for a week between 10,000 and 100,000 units per c.c., showing that actual multiplication of the virus had occurred.

Since these original observations most of the common viruses, with the exception of rabies, have been grown in tissue culture.

Resistance. The filtrable viruses vary considerably in their resistance to nocuous agencies. Generally speaking, they resemble the vegetative bacteria more closely than the spore-bearing organisms; that is to say, they are generally destroyed by exposure to moist heat at 55–60°C. within half an hour, and succumb to fairly low concentrations of chemical disinfectants. On the whole, they appear to be more resistant than the vegetative bacteria to chemical agencies, but it must be remembered that experiments can never be performed in the complete absence of cellular or, at any rate, of protein material, and their apparently greater resistance may therefore be the result of the protective action of substances in the medium.

Most viruses appear to be very resistant to cold. Vaccinia virus withstands a temperature of 180°C. for months, and repeated freezing and thawing fail to destroy it. It also will withstand dry heat at 100°C. for ten minutes. Moist heat at 55–60°C. for ten minutes will destroy most viruses, but blood from swine fever will withstand a temperature of 58°C. for at least two hours.

Metabolism. Practically nothing is known about the metabolism of the filtrable viruses, one of the great hindrances to its study being the impossibility of cultivating them in the absence of tissue cells.

Pathogenicity. The virulence of the pathogenic viruses is subject to variation. Some viruses appear to have become adapted to numerous different hosts; there is evidence, for example, that all the animal poxes, with the possible exception of fowl pox, are caused by varieties of one and the same virus, and it is reasonably certain that the properties of a virus may be considerably altered during the process of adaptation to a different host.

Many of the viruses in the animal body appear to show a particular affinity for special tissues, such as nervous tissue or skin, thus resembling the affinity manifested by many of the known bacteria for special tissues. Even, however, when the lesions are confined to one tissue, the virus can frequently be demonstrated in other parts of the body.

There is evidence, too, that the tissue localization is more apparent than real, depending on the mode of infection.

Transmission. Infection in most of the filtrable virus diseases appears to occur by direct contagion, the infective material gaining access to the body either by the nasopharynx or sometimes by the skin, as in rabies. In certain diseases the virus is inoculated into the blood stream by an insect vector, e.g., yellow fever and dengue. Laboratory infections are not infrequent, especially with yellow fever, psittacosis and various sheep infections.

Habitat. With very rare exceptions all the filterable viruses at present known are associated with living cells, whether in the animal or the vegetable kingdom. This does not mean that they are never found apart from disease processes, for their presence has been demonstrated in healthy carriers; but it does mean that they are essentially parasitic.

The facts that no known virus has been cultivated in the absence of living susceptible cells and that some possess the order of magnitude exhibited by large molecules of protein have induced certain workers to view the host cells as the source of the viruses. The most suggestive work along this line is that of Stanley, who recently reported that he is able regularly to obtain large amounts of crystalline protein from plants infected with tobacco mosaic virus and that this protein has the property of exciting mosaic disease in inoculated plants. He is inclined to believe that the virus with which he is working is not a living organism but an autocatalytic substance arising from the proteins of the plant as the result of infection.

The problem as to whether it is possible for a single virus to give rise to a number of symptom complexes, depending upon the amount and virulence of the infection and the resistance of the host, is tremendously interesting. Whether some of the neurological manifestations of virus diseases manifesting themselves as lymphocytic choriomeningitis, as the St. Louis type of encephalitis, or as neuronitis, may not after all be different manifestations of the same virus under different conditions of virus and host, is at least a subject for conjecture. Obviously they are all relatively new diseases, and one has to wonder if after all the causative factors are as new as the diseases. The author's belief is rather definite, though not at all susceptible of proof, that there is no more reason for them to be entirely different than there is for different epidemics of poliomyelitis to manifest entirely different symptom complexes, different infectivity, different death rates, and different duration. Epidemic influenza may be considered as an example. This specific disease is caused by a virus

first isolated in England by Smith, Andrewes and Laidlaw, and also intensively studied in the United States by Francis and his associates. It is the first disease to be raveled out of the group of symptom complexes known as "influenza". The virus has been isolated by transfer from man to ferret in many epidemics in widely separate parts of the world, and it has been transmitted from ferrets to mice. It is being employed diagnostically in standardized tests of human sera in mice for the specific protective antibodies. Moreover, the virus grown in tissue culture has already been used in experimental vaccination with encouraging results. Does this one virus cause all the diseases now called influenza, with their diversified symptomatology varying because of the virulence of the attacking agent and the individual's resistance, or are there many viruses? In the author's opinion there is but one virus, the symptoms being modified by mixed bacterial infection and the virulence of both virus and associated organisms.

Hopes have been raised prematurely in popular writings that influenza has been conquered by these new discoveries, notwithstanding the fact that it is not yet known how much of the so-called influenza is the specific disease under study, what is the relationship between epidemic influenza and the periodic influenza pandemics, how widely epidemic influenza is distributed geographically, where the infection exists in the intervals between the characteristic epidemics, and how enduring and effective is the immunity produced by vaccination or the natural disease.

The writer has said nothing about the fascinating problem provided by the filtrable virus tumours. Here again one treads on very difficult ground. There is evidence suggesting that filtrable virus particles are essential to their reproduction, and that tumours both of avian and mammalian origin are caused, to some extent at least, by infecting particles having many of the characteristics of the known filtrable viruses.

THE APPENDICITIS PROBLEM*†

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Appendicitis is one of the common causes of death. The seriousness of acute appendicitis seems forgotten and the mortality remains very high. In some publications the high mortality is charged against incompetent surgeons and rash operators, but the large number of fatal cases in which there was peritonitis with or without other complications, points to conservatism and "procrastination which is the thief of lives."

Statistical studies can be misleading and it is important to separate the cases from a well-organized and equipped clinic in a large city from those of a struggling pioneer hospital situated where difficulties of transportation and other factors bring in complications of great moment.

If some of the money now spent in the economic destruction of the practitioner were used by philanthropists to improve the facilites for the doctor's work, many lives would be saved.

Deadly procrastination is not always the fault of the doctor. The practitioner may be called in to sanction and take responsibility for the fixed delusion of the obstinate patient. The patient may be under the influence of one of the cults which comprise the lunatic fringe of medicine, and believe that the words of a present or absent healer will change the course of a pathological process. Or he may be convinced, until it is too late, that manipulation or adjustment will stop the progress of a spreading peritonitis.

In spite of the muckraking of the surgeons by the professional and lay press, more frequent and prompter operation is required in acute appendicitis if the mortality and morbidity from this disease is to be diminished. While many things are known about the signs and symptoms and clinical course of acute appendicitis, not one single fact observable at the onset is known which permits the doctor to predict with certainty the course which an acute infection of the appendix will follow in the next twenty-four hours. The time to decide whether the inflammation of the appendix is catarrhal, suppurative or gangrenous is after the specimen has been removed by the surgeon. More often than not it is easy to make the diagnosis of acute appendicitis in the early stages of the disease, but anyone who

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attempts to decide the course of the pathological process from external symptoms will suffer many humiliations.

As found in the laboratory, the acute inflammations of the appendix are catarrhal, diffuse, suppurative and gangrenous. Any study of the disease must consider the effect of the inflamed appendix on the peritoneum and the many complications, as well as the changes, in the appendix itself. Bearing in mind the fact that the various types of inflammation merge into one another without a clearly defined line of separation, the following classification is a useful one for a clinical-pathological study of the disease.

- Acute Appendicitis
  - Catarrhal
  - Diffuse
  - Suppurative
  - Gangrenous
- Peritonitis
  - Local
  - Diffuse
  - Abscess
- Complications
  - Angeitis
    - Lymphangitis—Lymphadenitis
    - Phlebitis
      - Systemic
      - Portal
    - Arteritis
  - Ileus
  - Residual Abscess

The course of the disease is most variable. Cases of acute catarrhal appendicitis may subside and the entire pathological process resolve without any permanent change in twenty-four hours. On the other hand, the inflammation may run a fulminating course and produce gangrene and rupture in less than twelve hours. Some cases undergo spontaneous resolution in two or three days, but more often in this period of time a gradual progress of suppuration or development of gangrene is found. As has been so often noted, the doctor cannot predict the course of the disease from the symptoms of its onset.

For this report the author has studied the records of 500 successive cases of acute appendicitis which were admitted to Mercy Hospital. These cases have been grouped according to the time that elapsed between the onset of symptoms and the operation. This is an artificial classification which ignores the relative virulence of the infection and the resistance of the patient, as well as the character of the pathological process, but possesses the advantage of having a fixed point for measuring the efficiency of the treatment.

All the patients were from Baltimore or its vicinity. Sixty miles was the greatest distance any patient traveled to reach the hospital and yet only 139, a little more than 25 per cent, were in the group who came to the hospital within twenty-four hours of the onset of their symptoms. This is the group in which all recovered without complications.

Eighty patients came to operation within twelve hours of the onset of their symptoms. All of these patients recovered. One patient, a negro boy, had tuberculous peritonitis, primary in his appendix. A white girl, age 10, had a ruptured gangrenous appendicitis with diffuse peritonitis. This child, a pupil at a boarding school in the suburbs, who was healthy and without previous symptoms of any kind, suffered a sudden severe attack of abdominal pain about 10:00 A.M. She vomited and was prostrated. An enema was given which was effectual but the pain was not relieved. She was examined by the school physician about an hour later. He found her rather shocked, with slight cyanosis. There was marked general rigidity and muscle spasm of the abdominal wall, and great tenderness in the region of McBurney's point. The patient was sent to the hospital at once and operated upon about 1:00 P.M. An acute gangrenous appendicitis without adhesions and with widespread peritonitis was found. The exudate was cloudy and a culture developed pure hemolytic streptococcus. The appendix was removed, the peritoneum drained and the child treated by a modified Ochsner method. She made a good recovery in forty-four days.

In this case there was apparently a virulent infection with an acute fulminating attack, which produced gangrene of the appendix, rupture and a spreading peritonitis in the short time of four hours. Whatever credit there is in the recovery of this patient is due the school physician who lost no time in bringing her to operation.

It is interesting to note that in this group who came to operation soon after the onset of symptoms are included all but one of the physicians, all the nurses, medical students and orderlies in the series. These are people who know most about appendicitis and their promptness sets an example for those less favorably trained for judgment.

In the group who were hospitalized between twelve and twenty-four hours there were fifty-nine patients, all of whom recovered. Three patients had pulmonary tuberculosis at the time of their acute appendicitis. The operations were done under nitrous oxide anesthesia and there were no signs of disturbance of the lung lesion. One patient, a veteran of the World War, developed a postoperative psychosis but recovered in about six weeks. This man had an acute

gangrenous appendicitis with diffuse peritonitis and came to operation twenty-four hours after the onset of his symptoms.

In one case the suspicion of ptomaine poisoning raised by the history of a meal of crabs previous to the attack was put aside by the observation that the other members of the family who ate the same food were free from all symptoms of gastro-intestinal disturbance.

A white women, age 20, in addition to the characteristic symptoms of acute appendicitis had blood in her urine. An x-ray examination did not show the shadow of a urinary calculus. A cystoscopic examination was impractical in the emergency. Clear fluid was found in the peritoneum when the red and swollen appendix was removed twenty-two hours after the onset of her symptoms.

The distinction between acute appendicitis and urinary calculus, or acute stricture of the ureter, is important and should be made whenever possible. However, too much time should not be taken in making the differential diagnosis. If after a reasonable study of the patient the diagnosis remains doubtful, in the author's opinion it is better to remove the appendix than to take the risk of procrastination. The diseased urinary tract is not likely to rupture, but an acutely inflamed appendix carries this ever-present menace.

After the first day of waiting, complications and fatalities begin to develop. In the group which delayed operation between twenty-four and forty-eight hours there were 142 cases. Local and diffuse peritonitis as well as localized abscesses were found and required drainage. Among the complications were fecal fistulae, arthritis with purpura, and several incisional hernias. An interesting case was one in which there was perforation of a typhoid ulcer of the appendix. There were four deaths in this group, all from peritonitis. One was a child of 5 years. Appendicitis runs a fulminating course in young children, with rapid progress of the resulting peritonitis.

In the next group coming to operation in from two to three days there was a higher mortality, about 5 per cent. In addition a stay in the hospital averaging thirty days was necessitated, as compared with thirteen days in the first and second groups. The complications become more frequent and more severe. Phlebitis, pulmonary infarction, acute intestinal obstruction, fecal fistulae, subphrenic and other residual abscesses occurred as complications in this group. In two cases the appendix was not removed, because it was lost in the wall of the abscess.

With patients operated upon between three and four days after the onset of symptoms the same complications and sequelae were found. The mortality rate, however, took a sudden sharp rise. In

the author's series this rate was six out of forty-nine cases, nearly 12 per cent. In this group the disastrous effects of purgatives on acute inflammatory lesions of the abdomen were observed. The medical profession has learned that opium is a handicap in the diagnosis of acute appendicitis, but many forget the imminent peril to the same patient who is given a purgative.

There was an apparent improvement in the outlook for those patients who were operated upon on the fifth day. The mortality rate fell to 4 per cent, but on the next day it rose to 7 per cent, and on the seventh day reached the highest rate of the series, 16 per cent.

Patients admitted with evident spreading peritonitis make an especial problem. In these cases the decision for or against immediate operation is of vital importance and requires judgment based on experience, fallacious as this may be. Great distention with cyanosis, a rapid, thin pulse, low blood pressure and cold extremities are symptoms which favor delay. Although the improvement which follows drainage is great, unfortunately this improvement is likely to be temporary. The rapid progress of appendicitis and peritonitis in young children makes it advisable to operate at once on all these patients who are not moribund on admission.

When the decision is to delay the operation, the peritonitis is treated by a modification of the Ochsner method. It is well at this time to emphasize the fact that Ochsner's is not a method of treatment for appendicitis. It is a method of treatment for peritonitis, which is a dangerous complication of neglected appendicitis. About 75 per cent of the cases of peritonitis admitted to the general surgical service are caused by a primary appendicitis.

The author carries out the treatment of peritonitis as follows:

Quiet, well-ventilated room
Psychic rest
Fowler position
Abstinence from food
Water (rectal or subcutaneous, salt or glucose solution)
Opium
Oxygen
Gastric lavage and enemas as required
Enterostomy for obstruction, the signs of which are constipation, distention and vomiting
Intravenous glucose solution with insulin
Direct transfusion of blood

Opium is administered as recommended by Alonzo Clark. Morphia is given hypodermically in sufficient quantity to reduce the rate of respiration in an adult to 12 a minute, and repeated as often as

necessary to keep the movements at this rate. The quantity of morphia required seems to be proportional to the severity of the infection. As a rule, one-fourth grain repeated every half hour will produce the desired slowing in two hours, and hourly intervals will keep the rate at approximately 12 or 14. In the case of the child mentioned in the first group of cases, three and seven-eighth grains of morphia were given in the first twenty-four hours.

Oxygen administered by the nasal catheter relieves the cyanosis and compensates for the diminished aeration which is a necessary consequence of the effect of the morphia on the respiratory movements.

Treated by this method many patients admitted in desperate condition improve and develop a walled-off abscess, which is then incised and drained. The appendix may or may not be removed at this time, and all the ordinary complications of operation on the localized abscess may occur.

This method is not a panacea. Certain patients continue to do badly and die without showing any evidence of a tendency to limitation of the progress of the peritonitis. The treatment must be carried out rigorously, preferably in a hospital under the observation of skillful resident house officers and careful nurses.

Jopson has called attention to the great danger of rupture of the abscess walled off by frail adhesions, which may occur after two or three days of improvement under the treatment. Apparently the peritoneum cannot resist a second spreading infection. Acute intestinal obstruction, subphrenic and other residual abscesses, phlebitis, metastatic infections and general septicemia are dangers which complicate delayed operation in these cases and often cannot be prevented.

The classical symptoms of the onset of acute appendicitis are well-known and familiar to all doctors. They are often recognized by intelligent laymen who also occasionally recognize the importance of prompt operation. Irregular symptoms and unusual ones may make the diagnosis obscure, and the existence of other lesions adds difficulty to the exercise of sound judgment in the decision for or against operation in a particular case. Early diagnosis and prompt operation, the maxim in so many lesions, are the guides to reduction of morbidity and mortality in acute appendicitis.

FURTHER CLINICAL OBSERVATIONS ON FEEDING INFANTS WHOLE MILK, GELATINIZED MILK, AND ACIDIFIED MILK*†

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Infant feeding formerly constituted a major problem for the physician. The study of this subject during the past twenty years, however, has undergone many changes and has been greatly simplified.

Breast milk is still the best food for the newborn infant. It is what nature intended the baby to have. Grulee, Sanford and Herron (1) showed, as a result of their research in Chicago, that infections and gastro-intestinal disturbances were much less frequent in the breast-fed infant than in the artificially fed infant, especially in the families with a low income. However, a large per cent of babies are not breast-fed and it behooves physicians to continue in their search for the best substitute for mother's milk.

The writer published in *The Archives of Pediatrics* a report entitled *Some Clinical Observations on Feeding Infants Whole Milk, Gelatinized Milk, and Acidified Milk.* The results of this study tended to show that the feeding of a low curd tension milk, produced by the addition of lactic acid in one group and the addition of gelatine in another group, gave certain advantages over ordinary cows' milk. For example, the incidence of vomiting, constipation and diarrhea was greatly reduced on the gelatine and acid milk. The same has been shown to be true in the feeding of evaporated milk, which in the process of evaporation has had the curd tension reduced.

One of the most interesting observations made at that time was the low incidence of upper respiratory infections in the group fed gelatine milk, as compared to the cows' milk and acidified milk groups. As a result of this observation it was decided to continue this study by observing another group of cases, consisting of one-hundred-and-fifty infants divided into three groups of fifty infants each. The first group was fed cows' milk, the second group milk to which gelatine‡ had been added, and the third group was fed acidified and evaporated milk. This produced not only a different group, but a different year in which to observe the incidence of upper respiratory infections, as well as a

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‡ The gelatine used in this study was Knox Gelatine.

chance to check the results with respect to vomiting, constipation, diarrhea, etc., as previously reported. No effort was made to limit this study to normal cases; instead, all cases were included as they reported to the clinic, thus duplicating as far as possible the usual type of cases seen by the practicing physician.

The same plan of feeding was continued as given in the preliminary report, which, briefly, consisted of approximately two ounces of milk per pound of body weight. This milk was diluted with water to make an approximate fluid total of two-and-one-half ounces per pound. The amount of carbohydrate given varied from one to one-and-one-half ounces to each day's feeding, depending upon the weight of the infant.

Orange juice and cod liver oil were given to all infants after three weeks of age. Cereal was started at the fourth month and puree of green vegetable between the fifth and sixth months.

Three drops of lactic acid were added to the ounce of milk.

One or two per cent of the gelatine was added by first placing the given amount of gelatine in the amount of water to be used in the formula, which previously had been boiled and allowed to cool to room temperature. This was then allowed to stand for ten minutes before being added to the milk.

It was found that the feeding of lactic acid milk and evaporated milk gave practically the same results, since the curd tension is reduced in evaporated milk by the process of evaporation. Many mothers objected to the addition of the acid, especially as the cows' milk curdled if the acid was not properly added. Therefore, evaporated milk was substituted for the acid milk in a group of cases and the results were similar to those fed the acid milk. The results of six months' observation on these diets are shown in the following tables.

Table 1 shows the similarity of complaints and diagnoses in the different groups at the beginning of the study. Table 1 also shows the incidence of upper respiratory infections as they occurred in the three respective groups. Upper respiratory infections were most common in the cows' milk group, slightly less frequent in the acidified milk group, and only one-third as frequent in the gelatine group as in the group fed cows' milk. This table likewise shows that diarrhea occurred much less frequently in the gelatine group than in the cows' milk or acidified milk group.

Table 2 shows the average age of each group at the beginning of treatment and brings out the uniformity of weight at birth of the three groups, as well as the uniformity of weight in the three groups at the beginning of treatment.

TABLE 1

	DIAGNOSIS AT BEGINNING OF TREATMENT	INFECTIONS OCCURRING DURING STUDY	DIARRHEA—NUMBER OF CASES OCCURRING DURING STUDY
Cows' milk	Feeding, regulation of Malnutrition Rickets Eczema Prematurity	Upper respiratory, 19	7
Gelatinized milk	Feeding, regulation of Malnutrition Rickets Eczema Prematurity	Upper respiratory, 6	3
Acidified milk	Feeding, regulation of Malnutrition Rickets Eczema Prematurity	Upper respiratory, 12	9

TABLE 2

	AGE WHEN TREATMENT STARTED. AVERAGE	BIRTH WEIGHT. AVERAGE	WEIGHT WHEN TREATMENT STARTED. AVERAGE
	weeks	*pounds*	*pounds*
Cows' milk	$8\frac{1}{3}$	$6\frac{2}{3}$	9
Gelatinized milk	$10\frac{1}{2}$	$6\frac{1}{3}$	10
Acidified milk	$10\frac{1}{2}$	7	$9\frac{1}{2}$

TABLE 3

	GAIN FIRST WEEK. AVERAGE	GAIN SECOND WEEK. AVERAGE
	ounces	*ounces*
Cows' milk	$7\frac{1}{3}$	$7\frac{1}{3}$
Gelatinized milk	$7\frac{1}{3}$	$6\frac{2}{3}$
Acidified milk	$6\frac{1}{2}$	$6\frac{2}{3}$

Table 3 gives the average rate of gain during the first and second week's treatment. The results are practically the same in all three groups.

Table 4 shows the average rate of gain during treatment and the

average duration of treatment. There was little or no difference in this respect.

Table 5 shows the effect of the three types of feedings on vomiting and appetite. It will be seen that vomiting occurred much less frequently on the gelatine milk than on the cows' milk or acid milk. The appetite was uniformly good in all three groups.

TABLE 4

	RATE OF GAIN DURING TREATMENT. AVERAGE	DURATION OF TREATMENT. AVERAGE TIME
	ounces per week	*months*
Cows' milk	5.4	$6\frac{2}{3}$
Gelatinized milk	5.2	$5\frac{1}{2}$
Acidified milk	4.9	$6\frac{1}{2}$

TABLE 5

	VOMITING			APPETITE POOR		
	Number of cases	Results		Number of cases	Results	
		Improved	No improvement		Improved	No improvement
Cows' milk	10	9	1	1		1
Gelatinized milk	4	4		1	1	
Acidified milk	9	9		3	3	

TABLE 6

	CONSTIPATION		
	Number of cases	Results	
		Improved	No improvement
Cows' milk	5	3	2
Gelatinized milk	3	3	
Acidified milk	4	4	

Table 6 shows the results of the various types of milk feeding on constipation. The results were most favorable in the gelatine group and the acid milk group.

COMMENTS

This study was conducted by two different physicians working in widely separated clinics in the City of Baltimore. It is interesting

to note that there is a slight difference in the income level of the two groups, one having a very low income level, as found in any hospital dispensary, the other group being composed of a slightly higher level, the average income of the middle class.

The incidence of upper respiratory infections was much greater in the group with a lower income level than in the group with a slightly higher income and better home surroundings. The relative frequency of occurrence, however, was the same in the three groups; i.e., the gelatine milk group showed a less frequent incidence of upper respiratory infections in the higher income level as well as the low income group, when compared with those fed on cows' milk and acid milk.

Whether the clinically observed fact that gelatinized milk reduces the incidence of upper respiratory tract infection is the result of some chemical-therapeutic property inherent in this substance, similar perhaps to the effects of its glycine contents in certain asthenic states or certain primary dystrophies, or whether it is caused by an increased utilization of the several ingredients in the milk feeding, particularly of its vitamin A content, must wait for further chemical-clinical research and confirmation.

SUMMARY

Upper respiratory infections occurred less frequently in a group of infants fed a low curd tension milk, produced by the addition of gelatine to the milk, as compared with a group fed cows' milk and a similar group fed acidified milk.

These findings are similar to the results obtained in the preliminary study, as previously reported.

The feeding of gelatinized milk may be helpful in the prevention of vomiting, diarrhea and constipation, as compared to cows' milk.

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A REPORT ON THE TREATMENT OF GONOCOCCAL URETHRITIS WITH SULFANILYL-SULFANILAMIDE*†

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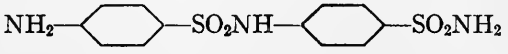
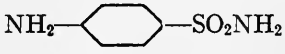
Since the report of Dees and Colston (1) in May, 1937 on the use of sulfanilamide in the treatment of gonorrhea, much has been written about the drug,—its use, abuse, and toxicity. To correct some of the inherent dangers of sulfanilamide new compounds are being synthesized in order to develop a molecule which will be less toxic, more effective, and have a greater margin of safety.

For the past ten months p-aminobenzene sulfonyl sulfonamide (Disulon or sulfanilyl-sulfanilamide)‡ has been used on certain cases in the Genito-Urinary Clinic at the University Hospital. This drug is a colorless, crystalline, organic compound, soluble with difficulty in cold water (0.01%) but more readily soluble in hot water. Its structural formula compared with that of sulfanilamide is as follows:

Sulfanilyl-sulfanilamide 

Sulfanilamide 

This compound was called to the author's attention following the reports of Gray (2), Rosenthal (3) and Barlow (4). Gray stated that in mice infected with streptococci, sulfanilyl-sulfanilamide is one-half as toxic and slightly more effective than sulfanilamide when given by mouth. Rosenthal reported that when injected subcutaneously into mice sulfanilyl-sulfanilamide is one-fifth as toxic as sulfanilamide and slightly more effective in meningococcus and streptococcus infections. Barlow also compared Disulon with sulfanilamide and found that the former, owing to its lower toxicity, better tolerance, and greater protective efficiency of unit dosages in the presence of infections, has a therapeutic margin of safety superior to that of sulfanilamide.

* From the Department of Urology, University Hospital.

† Received for publication November 16, 1938.

Disulon, Brand of Sulfanilyl-Sulfanilamide, was furnished through the courtesy of the Alba Pharmaceutical Company, Inc., New York, N. Y.

‡ This compound has been erroneously referred to in the literature as disulfanilamide. This is a chemical misnomer and has been discarded for the chemically correct terminology sulfanilyl-sulfanilamide.

ROUTINE

Cases selected for treatment with the new chemotherapeutic agent were individuals who were thought capable of cooperating and following the treatment prescribed until the time of discharge. (The author was mistaken in this idea in many cases.) In all the cases reported diagnosis was made by finding the typical diplococcus on the stained slide. Most of the cases were acute urethritis, some of long-standing infection. There were in the series several cases of epididymitis, but none of these developed while on treatment. The drug was not tried in this investigation on cases with an initial diagnosis of prostatitis. Although the drug was used in over 200 cases, in only about 100 cases was there enough data to draw any conclusions and in many of these the records were not as complete as could be desired.

Various dosage combinations were tried at first.* The final plan followed that generally used with sulfanilamide, but with a smaller initial dose. Even this varied at times. The dosage was as follows: 60 grains for the first two days and 40 grains for the third, fourth and fifth days. If both glasses of urine were clear on the fifth day, the dose was dropped to 20 or 25 grains, and kept there from ten to fourteen days. If the first glass was still cloudy, the dose was dropped to 30 or 35 grains and held there until the urine cleared. The schedule was not regarded as a fixed rule. When the sodium salt of the drug was used, the dose was cut in half all through the course of treatment, as the sodium salt is twice as soluble as the plain sulfanilyl-sulfanilamide. Except for the fact that less drug had to be used, the sodium salt showed no advantage over the plain drug.

The patients were instructed to restrict fluids but not to the extent of discomfort. They were also warned not to take other medication of any type, especially salts. Mineral oil was allowed as a laxative if needed. This was done because clinical observation and reports have shown that the toxicity of sulfanilamide is greatly increased by the presence of sulfates. It is probable that the sulfates would also be somewhat toxic with sulfanilyl-sulfanilamide. The usual instructions concerning alcohol and sexual hygiene were also given. No local treatment was used.

RESULTS

The majority of the cases in this investigation were dispensary patients, and although an effort was made to select cooperative in-

*Since this paper has gone to press there have been reports by H. Felke of satisfactory results with a smaller dosage than mentioned in this article. Arch. f. Dermatologie u. Syphilis, Berlin, **178**: 45, August 20, 1938.

dividuals a large number failed to return for the final check-up. Some did not return after the urethral discharge had stopped. Those who violated the alcohol or sex rule, or stopped the drug too soon, were treated as though they were freshly infected and were started again on large initial doses of 50 or 60 grains for the first two days after their return.

The average total dose was 345 grains. On an average the discharge stopped in six days, in most individuals in two or three days, and the longest time it required was fifteen days. The time for the first glass to become clear was much more varied. The average was seven days, the shortest two days, the longest fifteen days. No epididymitis or acute prostatitis developed in patients treated with sulfanilyl-sulfanilamide. It is unfortunate that more of the cases could not be followed over a longer period of time, so that late recurrence could be ruled out. However, in those cases in which the treatment schedule was followed rigidly the results were most encouraging. The results obtained in the cases that "broke technic" and later followed it rigidly were satisfactory, but the time required was much longer. The chronic cases were placed on a small initial dose and kept on a higher dose for a longer period. This seemed to give better results.

Several cases of epididymitis were treated and, while the time of invalidism was decreased, the results were not so uniform or as startling as with urethritis. Local treatment in the form of hot wet applications was also used in epididymitis. The same was true of a few cases of chronic prostatitis that were treated.*

SIDE ACTIONS CAUSED BY THE DRUG

In a few cases there developed unlooked for side actions with the drug. These were very few and, in all but one, not of serious consequence. Five cases showed some form of toxic reaction to the drug. Two white men developed an urticaria on the exposed surfaces of face and hands, which cleared up immediately on stopping the drug and reappeared when the drug was started again. It cleared up when the drug was stopped again, and by this time the infection had ceased.

* One case of pyelitis with hydronephrosis from which a nonhemolytic streptococcus was isolated was treated with sulfanilyl-sulfanilamide. The cultures became negative in ten days, and the patient felt much better while on the drug. Upon removal of the drug the urine remained negative, although the backache and pain, of which he originally complained, returned. This was a long-standing case of between three and four years' duration. There were six cases which had been on sulfanilamide that failed to respond, but when placed on sulfanilyl-sulfanilamide they responded quite satisfactorily. There were three cases in which the drug failed entirely.

Two other men, one white and one colored, developed a severe toxic dermatitis, which was scattered over the whole body and limbs but much more marked on the exposed surfaces. There was also fever and general malaise. These symptoms and the dermatitis cleared up spontaneously in about four days.

One case, a young white male, developed a peripheral neuritis while on the drug. He was taken off the drug at the first complaint of pain in the legs, but he developed a foot drop and wasting of the muscles. After two months he was considerably improved.

One patient complained of a hydrogen sulfide taste in his mouth. Another was slightly cyanotic on 60 grains while working in an excessively hot room. He had taken the same dose previously and did not develop the cyanosis when not in the overheated atmosphere. No sleepiness or giddiness was noted. Most of the patients on sulfanilyl-sulfanilamide said that they felt better, some stated that they were "pepped up", while others noted a slightly laxative effect.

The drug does not appear to affect the leukocyte count.

BLOOD CONCENTRATION OF SULFANILYL-SULFANILAMIDE

The sulfanilyl-sulfanilamide concentration in the blood was determined in a number of cases. The method used was almost identical with that used for determination of sulfanilamide in body fluids, with the exception that sulfanilyl-sulfanilamide was used in the standards for colorimetric comparison. The highest concentration found was 4.0 mg. per cent. It was noticed that sulfanilyl-sulfanilamide disappeared from the blood quite rapidly, as specimens taken the day following cessation of the drug showed only a trace or none in the blood. This indicates rapid elimination.

Any definite relationship between blood concentration and therapeutic effectiveness could not be arrived at from this series. It would appear that a blood concentration of 2.5 to 3.0 mg. per cent will stop the discharge. The author intends to study this problem later.

CONCLUSION

It is the writer's belief that sulfanilyl-sulfanilamide is a great aid in the treatment of gonorrhea and certain other urinary infections. For the best results a definite schedule must be followed; all breaks in schedule should be treated as a reinfection and the patient started off as a fresh case with perhaps a slightly lower initial dosage. The drug is relatively nontoxic and in lower dosage appears as effective as sulfanilamide. It is just as useful in the chronic case as in the acute case. The good results obtained in sulfanilamide-resistant gonorrhea suggest that the drug may have a new field of usefulness in this type of case.

SUMMARY

1. A new chemotherapeutic agent, sulfanilyl-sulfanilamide, shows great promise in the treatment of acute and chronic gonorrhea and should be studied further.

2. The drug can be used in smaller dosage than sulfanilamide with equal effectiveness, and appears to be definitely less toxic.

3. Its effect on sulfanilamide-resistant gonorrhea warrants further investigation.

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EARLY MEDICAL EDUCATION IN BALTIMORE*

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It is the purpose of this paper to briefly epitomize the condition of early medical education in Baltimore up to the year 1839, especially as it concerned the organization of the Medical College of Maryland and the relation of this institution to the Medical and Chirurgical Faculty.

First, it would seem desirable to refer, also briefly, to medical practice in general and the type of education received by the early doctors. The population was scattered along the Atlantic Seaboard, from what is now Maine to Florida. It was dominantly rural, with the larger cities connected by post roads that were usually bad and frequently impassable. The center of population had shifted from a little east of Baltimore in 1790 to slightly west of it in 1820. There had been, and there was steadily increasing, a spread through available gaps in the mountains to the fertile lands of the West, reaching to the Ohio and the Mississippi. This western country was almost foreign in isolation from the settled East. The people were harassed with epidemical diseases, besides being subjected to the hazards of a rough and mobile mode of living. Doctors were greatly needed, and by the nature of environment were compelled to devote themselves to the practice of their profession, crude as it was, without much educational aid.

The same general system of education had prevailed from the earlier Colonial period until well after the Revolutionary War. A young man desirous of "learning physic" would become attached as a student, essentially an apprentice, to some qualified and successful doctor for a period, usually three years. During this time he used his preceptor's library, "read medicine," assisted him in any way requested, performed the medical chores, as it were, and thus became acquainted through example with the actual work of a doctor. After that period of service he could, if he so chose, set up for himself. There were no regulations or laws to prevent this practice.

If he felt that he was not yet sufficiently prepared, there were to be found in many of the larger towns and, indeed, also in the country, as witness "Medical Hall" in Harford County, medical men of greater learning and training who held classes and gave lectures, to whom he

* Address before the Cordell Historical Society of the University of Maryland, January 19, 1937.

† Chairman, Library Committee.

could apply and thus polish off his practical work. This was all the education most doctors received.

This system was probably much more satisfactory than it seems. The doctor of that period, both in theory and practice, was guided chiefly by authority and empiricism. The objective studies, anatomy, surgery as based upon anatomy, materia medica, chemistry and perhaps midwifery, were well-taught. But when it came to orthodox medicine and treatment based upon it, everything was obscured by theory. The influence of Boerhaave, Brown and Cullen dominated the medical mind. In Cullen's Nosology, for example, diseases were divided into orders, classes, genera and species, and contained definitions of about 1387 diseases.

However, those better favored by fortune or capacity, or both, went abroad after their apprentice period, usually to Edinburgh or London, perhaps to Leyden or Upsala, and there graduated. It was from this group that the early teachers came. After the Revolution times were so hard and anti-American feeling so strong, that but few medical students went abroad. Fortunately, by the early nineteenth century the first generation of American medical college graduates was coming along.

In considering the early medical schools in this country the first was established in connection with the College of Philadelphia in 1765. In 1768 Dr. John Archer of Harford County, Maryland, had the distinction of receiving the first medical degree, Bachelor of Medicine, in a class of eight. In 1779 this school became the University of Pennsylvania. It was certainly for many years the most influential teaching center, and many of its graduates became important medical teachers.

The Medical School of King's College, in the City of New York, was organized in 1768, and in 1770 Robert Tucker received the first doctor's degree given in this country. This college declined during the Revolution and never again became active until combined with the College of Physicians and Surgeons in 1811. Between 1792 and 1811 only thirty-four students received degrees in medicine. (Packard, p. 399.)

In 1782, under a plan drawn up by Dr. John Warren, the Medical Institution of Harvard University began its distinguished career. Until 1810 the sessions were held at Cambridge, but in that year were moved to Boston.

In August, 1796 the Trustees of Dartmouth College accepted a plan, proposed by Nathan Smith, to establish a medical school at Hanover, N. H., and he was appointed to deliver "lectures on Anatomy, Surg-

ery, Chemistry and the Theory and Practice of Physic". Dartmouth early became an influential school, and Dr. Smith perhaps the most conspicuous example of the "peripatetic teacher".

In 1799 an attempt was made to establish a medical department in Lexington, Ky., in association with Transylvania University. This was not successful, although later in 1814–15 it was reorganized and became one of the best-known medical colleges in the United States.

These colleges constituted all the opportunities for formal medical education in this country. It was estimated by Billings (p. 476) that from 1769 to 1799 there were 221 graduates.

In further consideration of Baltimore one finds a growing and prosperous city with a population expanding from 13,503 in 1790 to 46,555 in 1810, the third city in size in the United States. There were two collegiate institutions, Baltimore College, and St. Mary's College, founded by the priests of St. Sulpice who fled from France at the time of the French Revolution. This was raised to university rank by the Legislature of 1804, but never developed further, and at the present time only the theological department survives. There was one public library, founded in 1796. There were three hospitals, the Almshouse, located on Howard Street near Madison; the Marine Hospital; and the Baltimore or Maryland Hospital on Broadway at the present site of the Johns Hopkins Hospital, which had been established in 1796 for the care and treatment of the sick and insane. In 1801 was founded the Baltimore Dispensary for the treatment of the poor. It is still in existence but has never had any connection with medical education.

Many of the doctors of early Baltimore were men of education and capacity. Perhaps the best known was Dr. Charles Frederick Wiesenthal, who was born in Prussia and settled in Baltimore in 1755. As early as 1788 he had taken the lead for medical reform, had organized a medical society, and instituted "a plan for the regulation of practice". There was adjacent to his residence on Gay and Fayette Streets a building used for teaching medical students. In 1788 this was attacked by a mob while his pupils were engaged in the dissection of the body of an executed criminal. His death in 1789 put an end to both of these movements.

In 1801 Dr. John Beale Davidge, a graduate of Glasgow, began a private course of lectures on anatomy, surgery, midwifery and physiology. Later there were associated with him Dr. James Cocke of Virginia, a graduate of the University of Pennsylvania (1804), and John Shaw of Annapolis, who, while not holding a degree, had studied both in Philadelphia and Edinburgh, and also had been a doctor in

the Navy. By 1807 their project was well organized. Dr. Davidge had erected on his property near the corner of Liberty and Saratoga Streets a small anatomical theater for dissection. This, in turn, was destroyed by a mob when its purpose became known in 1807.

Some years before this, however, there had developed a movement which was destined to play a conspicuous part in medical education and medical life in Maryland. There had long been recognized a need for a method of regulating the practice of physic in some way, so as to eliminate the incompetents and quacks. In 1799 there was successfully organized the Medical and Chirurgical Faculty of Maryland. While the provisions of its charter were broad, it was specifically directed that there should be a Board of Examiners, twelve in number, seven from the Western and five from the Eastern Shore, which was to pass upon the qualifications of those desiring to practice medicine and, if found satisfactory, to issue a license.

It is significant, as indicating the trend of thought, that at the second meeting in 1801 the question of the organization of a medical college was brought up, but nothing apparently was done. In 1802 the topic was referred to in the president's speech (Dr. Philip Thomas of Frederick). A committee was then appointed to consider this subject and the discussion was again continued at the meeting of 1803, apparently without any more definite action.

Here then were the factors: a growing city, with distinct geographical advantages; an intelligent and organized medical profession; willing and, perhaps, able teachers; and above all the need for trained doctors. The effect of mob interference with private anatomical instruction was to consolidate opinion as to the need for a medical college. A meeting of the physicians of the city was held early in December at the residence of Dr. Davidge and it was determined to apply to the Legislature for a charter. The "Medical College Bill" was introduced, passed on December 18, 1807, and provided for the establishment of the College of Medicine in Maryland.

This charter showed the influence of the Medical and Chirurgical Faculty and clearly indicated the intention of a strong union between the State Society and the Medical School. It provided that the Board of Medical Examiners, together with the president and professors, constituted a corporate body known as "The Regents"; also, that the president of the Faculty should be "Chancellor"; and that a report be submitted by the College to the Medical and Chirurgical Faculty at its biennial meeting. In addition, there was also a provision which directed that every licentiate of the Board of Medical Examiners who had practiced for five years "shall have the right to

demand and receive a surgeon's certificate, free of all expense except for the sum of one dollar".

There was to be one term of instruction each year, commencing the first Monday in November, and for not less than four or more than six months. Degrees were to be awarded after the applicant had been duly examined at a public examination by the professors, preceded by a private examination by each. Every applicant was compelled to submit a thesis written in English or Latin, which he was required to defend publicly and to publish separately at his own expense.

Regents and professors were selected. John Beale Davidge was elected Dean. Classes were organized and given in private houses, and a few clinical lectures at the Almshouse. The first class numbered seven and there were no graduates; in the second session (1808–09) the number was increased to ten. The expenses were borne equally by the members of the Faculty. In 1809–10 there were eighteen in the classes. The first commencement was held in 1810, when degrees were conferred on five graduates. Dr. Cordell in his history of the University of Maryland did not point to any public announcement of this event.

It soon became evident that it would be necessary to build in order to house all departments. The new Faculty, with the aid of credit derived by personal endorsement and from a lottery granted by the Legislature, purchased a lot on the corner of Lombard and Greene Streets, on the western outskirts of the city, and on May 7, 1812 proceeded to erect the building which still occupies the same site. It was partly completed by the fall of 1813, so that some lectures of that session were given there.

It may be noted that this Medical College was the first to be instituted as a private corporation, one not having any connection with an organized college or university. Either this need was appreciated or the organizers were ambitious, for in the year 1812 there arose a plan to associate with the College of Medicine three other colleges or faculties, "the Faculty of Divinity, the Faculty of Law, and the Faculty of Arts and Sciences, and thereby constitute a University". Appropriate legislation was passed on December 29, 1812, thus giving origin to the University of Maryland.

During the session of 1812 there was instituted the award of a Gold Medal to be conferred annually upon the student writing the best thesis in the Latin language. This was intended "as an expression of the estimation in which the College of Medicine of Maryland holds classical learning, and as an encouragement to medical students who

may attend the institution, to learn it". This attitude may be compared to the regulations of the University of Pennsylvania, which required that candidates for a degree in medicine "shall satisfy the Trustees and Professors of the College concerning their knowledge in the Latin tongue, and in such branches of Mathematics, Natural and Experimental Philosophy as shall be judged requisite to a medical education".

The following description may be cited from *Niles' Weekly Register*, September 15, 1815, as indicating the contemporary estimate of the new building: "The splendid edifice which constitutes the Medical College, as the centre from which the other departments are to diverge, stands on Lombard street extended, in the western end of the city. It is constructed on the plan of the (old) Pantheon at Rome. The front faces on the Washington Road, commanding an extensive prospect of the Patapsco and Chesapeake. The grandeur of the exterior of the building does not excel the internal convenience of the apartments. The anatomical theatre with its necessary apppendages is as extensive and appropriate as those of any of the European schools. The lecturing room alone is capable of containing twelve hundred persons with convenience. The chemical hall, immediately below, is but little inferior; it will accommodate about a thousand, a part of its area being taken off by the laboratory and necessary apparatus. The apparatus is complete, accommodated to the taste and views of the learned professor."

The need for a hospital in direct connection with the Medical School soon became apparent. In 1823 the Faculty determined to build and secured a site next to the College. This project was evidently criticised and was defended by Dr. Davidge with a redundancy of expression very characteristic of him: "The City Hospital at the distance of two miles, or the Almhouse at that of one mile, and the students to visit the patients once a week and listen to a course of hebdomadal prelections, would meet the views of an infirmary, subservient to college purposes, as well, but not better, as an hospital in the moon, or located among the antipodes, transmitting the definition of its diseases through telescopical nosology."

The building was erected at a cost of $11,589; the furniture, permanent and movable, cost $2,530 additional, making a total of $14,-119. This amount was raised in cash and credit, entirely by the professors in their private capacity, that is, as individuals and not as a corporation. The hospital was opened for the reception of patients on September 20, 1823. At first, only acute cases were admitted. There were four wards, one of which was reserved for eye cases.

There were two resident students, each of whom was required to pay $300.00 per annum in advance for board, washing, etc. The charge to patients was $3.00 per week, which included everything. Operations were allowed to be performed only after consultation. There were four clinical lectures, two medical and two surgical, and the students were at liberty to attend the daily visits of the physicians and surgeons which were made at noon.

For the first few years the income of the Infirmary fell below the expenses, but in 1830 there was a net gain of $2,000. By the end of the first decade four more wards had been added, and there were ninety beds with a daily average of sixty to seventy patients. Four resident students were then in attendance.

It seems evident that a very close and amiable understanding existed between the Medical College and the State Faculty. In looking over Cordell's *Annals* one is impressed with the frequency with which the names of medical teachers appear in positions of importance, as orators, officers and as members of the Boards of Examiners. At times the entire Western Board was made up of members of the College Faculty. Indeed, it was upon the recommendation of Dr. Baker, Professor of Materia Medica, then Dean, that the Faculty Library was founded.

It seems reasonable to assume that the resolutions passed at the Annual Meeting, June 7, 1824, were inspired as a concerted effort in guiding medical education. As they are of great interest, they will be quoted in full (The Medical Recorder, Vol. VIII, 1825):

"Resolved: That it is the sense of this Society, that gentlemen of the profession throughout this State would contribute to the interests of Medicine, by receiving into their offices as pupils, such only as are qualified by their classical attainments and correct deportment to enter upon the study.

"Resolved: That it be, and is hereby recommended, to the members of the Faculty throughout the state, that they do not encourage the study of medicine by any individual who will not agree to pursue a course of at least three years; and that the Medical Boards of the Eastern and Western Shores be directed to inquire in all cases, whether such a course of study has been followed, and to discourage the examinations of all students who have not pursued it.

"Resolved, That it be, and is hereby recommended, by the Medical and Chirurgical Faculty of Maryland, that candidates, previously to their application for license to practice Medicine and Surgery, shall have attended medical lectures during two sessions and shall have read and studied the books whose titles are annexed in the list following:

"Anatomy and Physiology:—Wistar's *System of Anatomy*, Bell's *Anatomy and Physiology*, Haller's *Physiology*, Magendie's *Physiology*, Blumenbach's *Physiology*, Bichat on *Life and Death*, Bichat's *General Anatomy*.

"Chemistry and Materia Medica:—Lavoiser's *Elements of Chemistry*, Black's *Chemistry*, Brande's *Manual of Chemistry*, Henry's *Chemistry*, Coxe's *Dispensatory*, *Pharmacopoeia of the United States*, Cullen's *Materia Medica*, Murray's *Materia Medica*, Chapman's *Elements of Therapeutics*, Eberle's *Materia Medica*, Paris's *Pharmacologia*.

"Surgery:—Dorsey's *Elements of Surgery*, Boyer's *Surgery*, Boyer on *The Bones*, Cooper's (Saml.) *Practice of Surgery*, Pott's *Chirurgical Works*, Dessault's *Chirurgical Works*, Abernethy's *Chirurgical Works*, Cooper and Travers' *Surgical Essays*, Larrey's *Military Surgery*, Gibson's *Outlines of Surgery*, Thompson on *Inflammation*, Saunders on *The Diseases of the Eye and Ear*, Frick's *Treatise on the Diseases of the Eye*, Hunter on *The Blood, Inflammation*, etc., Hunter on *Lues Venerea*, Bell on *Lues Venerea*, Carmichael on *Lues Venerea*.

"Institutes and Practice of Medicine:—Cullen's *First Lines*, Rush's *Works*, *Sydenham's Works* (by Dr. Rush), Thomas's *Practice of Physick*, Good's *Study of Medicine*, Brown's *Elements of Medicine*, Darwin's *Zoonomia*, Philip on *Febrile Diseases*, Lind on *Hot Climates*, Cleghorn on *The Diseases of Minorca*, Pringle on *The Diseases of the Army*, Armstrong's *Illustration of Typhus*, Jackson (Robert) on *Fever*, Davidge's *Physical Sketches*, Senac on *Fever*, Bancroft on *Yellow Fever*."

It seems that graduates of this Medical School were licensed by the Board merely upon application. In 1827 an event occurred which caused a modification of this procedure. The Washington Medical College was founded by Dr. Horatio Gates Jameson, a graduate of the class of 1813. From the record it appears that he was a "bold and original surgeon, a tireless student and investigator, and a prolific and graceful writer". It also would seem that he was an outstanding surgeon in the city, who, perhaps through jealousy, had been denied a position on the Medical College Faculty.

When graduates of the new and rival institution came up for license, the issue was raised as to the legality of granting license to them solely upon diploma. It was then decided by the State Faculty that in the future the Board of Examiners should subject all applicants for State license to an examination, with the exception of those presenting diplomas from the University of Maryland issued before June, 1828. In the *Annals*, however, there is further reference, by Dr. Robley Dunglison in 1836, that the Court of Appeals had decided that a diploma from the University of Maryland was a State license and, therefore, her alumni were exempt from the demand.

In 1825 there arose internal dissention in the Faculty of the Medical School. This originated primarily from certain very popular extramural classes given by Dr. Davidge and Dr. DeButts. The question was raised to the Regents as to whether these classes did not impose a hardship both on students and on members of the Faculty. As a

result, some nonofficial intimation was made known to the State Legislature which afforded that body an excuse to intervene. In 1826, by legislative action, the Regents were relieved of their administrative duties and these were placed in the hands of a Board of Trustees appointed by the Legislature. The members of the Medical Faculty resigned and were reappointed. However, they no longer had voice or control in the management either of the School or of the Infirmary. In 1827 Professor Davidge resigned and Nathan Ryno Smith was appointed Professor of Surgery, thus adding a very strong personality to the Faculty.

Under this lay, and perhaps political, management the Medical Faculty became very unhappy; friction arose, resignations resulted, Robley Dunglison, Geddings, and, finally in 1838, Nathan Ryno Smith. In 1838 the senior professors, Potter and Hall, resigned their professorships under the Board of Trustees, but explicitly maintained an official connection with the Regents, as operating under the charter of 1812.

These two, together with Dr. Samuel G. Baker, a son of the former Professor of Materia Medica, opened another University of Maryland at the Indian Queen Hotel, with classes beginning at the usual time. At the end of the year commencements were held for both of the institutions; there were sixteen graduates, ten from the Regent's School. In the session 1838–39 twenty-four students attended the Regent's School, with seven graduates. Comparison may be made with the year 1825, supposedly the banner year, when the number of students was estimated to be between 303 to 320.

In 1839, following a favorable Court decision, the Regents and Faculty regained control.

During this period, 1810 to 1839, there were graduated possibly 1,129 students, geographically divided as follows: Alabama—2; Delaware—13; District of Columbia—31; Florida—1; Georgia—6; Indiana—1; Kentucky—8; Louisiana—8; Maine—1; Maryland—719; Massachusetts—2; Mississippi—2; Missouri—2; New Hampshire—1; New Jersey—1; New York—6; North Carolina—12; Ohio—5; Pennsylvania—46; South Carolina—39; Tennessee—16; Virginia—195; Buenos Aires—1; England—1; France—1; Germany—1; Ireland—4; Scotland—2; address unknown—2.

For the same period, 1810–1839, Billings in his 1876 review states there were 12,562 graduates from all the schools.

In conclusion, it may be a subject for speculative thought as to why this School has survived. From 1807 to 1839 there were twenty-

seven medical schools established; of them eighteen have ceased to exist. Since its birth, in spite of varying fortune, classes have been held without interruption, and never has it failed each year to graduate doctors of medicine. The thought, of course, arises that some part of this impetus to survival has been in the friendly relations existing between the Medical and Chirurgical Faculty and the University of Maryland.

ALUMNI ASSOCIATION SECTION

BENJAMIN F. COE, M.D.

Dr. Benjamin F. Coe, P. & S. 1895, aged 66, died at his home in Indiana, Pa., on November 15, 1938, after an illness of two months.

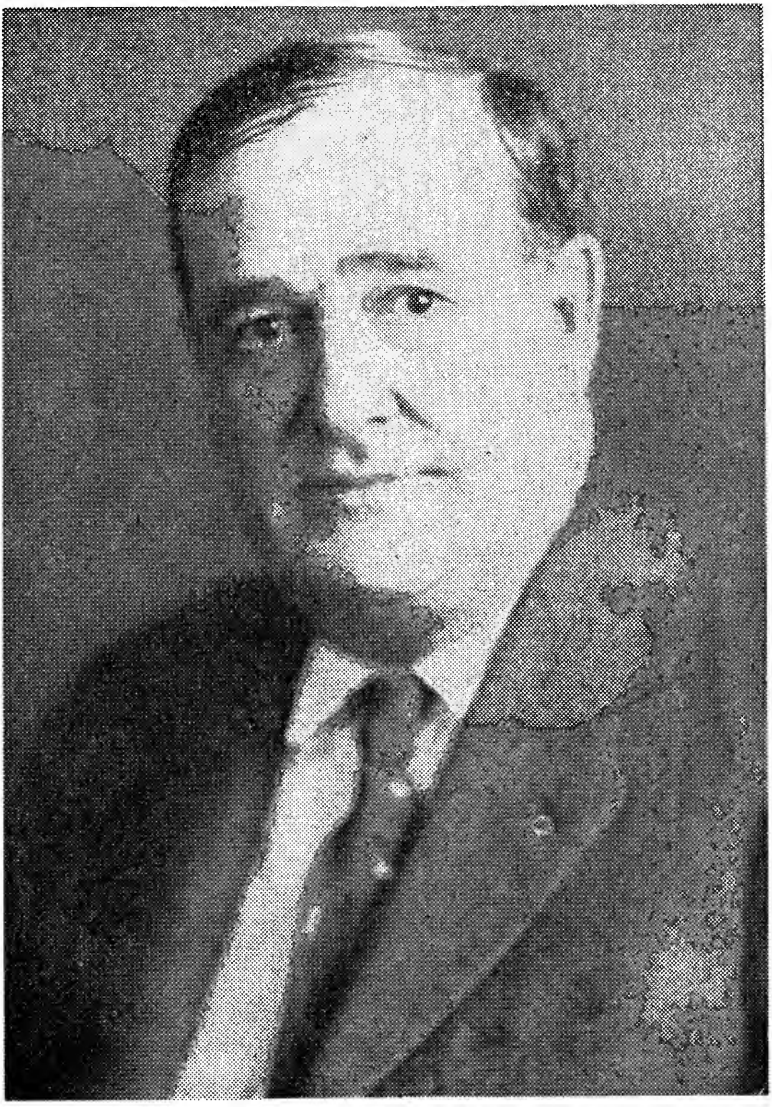
Dr. Coe was born July 8, 1872 at Gilletts, Pa., a son of Caleb and Ethelinda Coe. His early education was in the public schools. As a young man he entered the College of Physicians and Surgeons, from which he was graduated in 1895. Following his graduation he spent a year as intern at Mercy Hospital in Baltimore. From there he went to Olean, N. Y. as assistant to Dr. Harry Hale Ford, and a year later he located in Gazzum, Pa., where he engaged in the general practice of medicine.

In 1905 he located in Dixonville, Indiana County and later moved to Clymer. While in Dixonville Dr. Coe opened a private hospital which he conducted until its merger with Indiana Hospital in 1930.

When the Indiana Hospital was opened in 1914, Dr. Coe became a member of its staff and continued in that capacity until his death. He was elected president of the staff for 1938.

During the last thirty-one years he took special courses and post-graduate work each year, with the exception of 1934, in some of the leading universities and hospitals in this country and abroad.

After being in general practice for twelve years he became a specialist in surgery and gynecology.



Benjamin F. Coe

For forty-four years he served as chief surgeon for the Clearfield Bituminous Coal Corporation.

In 1918 he removed to Indiana, Pa., where he had since resided.

He was a member of the following medical societies: American Medical Association, Pennsylvania State Medical Society, Indiana County Medical Society, American College of Surgeons, Radiological Society of North America, Pennsylvania Roentologist Association, American Association for the Study of Neoplastic Diseases, and the American Association of Industrial Physicians and Surgeons.

He was a member of Clymer Lodge, I.O.O.F. and charter member of the Indiana Rotary Club.

In 1895 he married Elizabeth Cornwell. Besides his widow he is survived by two daughters, Mrs. Edward Crowl and Miss Nancy Marguerite Coe, two brothers, Mont Coe of Sayre, Pa. and Judson Coe of Ralston, Pa., and three grandchildren, Edward, Jackson and Benjamin Crowl.

Dr. Coe's abilities as physician and surgeon were of a high order. His consultation and advice were frequently sought by his colleagues. His knowledge of human nature, his sound judgment, his geniality, and his kindly sympathy won for him the respect and devoted friendship of all who knew him.

Dr. Coe was a member of the First Presbyterian Church of Indiana.

ITEMS

Dr. Thomas M. Talbott (U. of Md. 1870) at the age of 90 is still in the active practice of medicine and is believed to be the oldest practicing physician in northern Virginia, where he still maintains an office.

Dr. Talbott was born near White's Ferry in Montgomery County, Maryland in 1848. He attended public school at Poolesville, Maryland, and graduated from the Old Columbian College, now George Washington University, before studying medicine at the University of Maryland.

On May 10, 1872 the 24-year-old physician set out to establish an office, with Falls Church in mind as a probable location. Stopping at the roadside shop of a wheelwright, with two or three scattered houses in the background, he asked directions to the town. Upon being told that he was then in the "downtown" section of Falls Church, Dr. Talbott unloaded his kits, rented office space and hung out his M.D. sign. He has been there from that day to this.

In the early days of his practice Dr. Talbott traveled on horseback and carried his surgical instruments and medicines in saddle bags. Later he used a horse and buggy.

One of his earliest cases he recalls was that of a baby which, by mistake, had been given a large dose of sleeping medicine. When Dr. Talbott arrived the sorrowing family was preparing the child for burial. Although the infant appeared dead, Dr. Talbott decided to try a rather heroic treatment. Immersing the baby in hot water, he poured cold water over her head. As signs of life returned he administered hot coffee. After hours of this treatment the child was revived and lived in Falls Church for many years.

About fifty years ago there was an outbreak of diphtheria in the community and Dr. Talbott had about forty seriously ill patients on his hands. He pulled them all through, however, and obtained from that experience the firm conviction that habitual tobacco chewers were immune from diphtheria.

A great many of the present residents of Fairfax and Arlington Counties were brought into the world by Dr. Talbott. Although he has kept no record, he estimates that he has been the attending physician at over 2,000 childbirths.

Dr. Grover C. Sweet (P. & S. 1912) has been appointed chief medical officer of the Fitch's Soldiers Hospital at Noroton Heights, Connecticut. Dr. Sweet was formerly located at 1537 Chapel Street in New Haven.

Dr. Robert Perlman (U. of Md. 1930), who formerly practiced in Brooklyn, N. Y., is now engaged in the private practice of orthopedic surgery at 707 Race Street, Cincinnati, Ohio. Dr. Perlman is also connected with the Department of Orthopedic Surgery of the College of Medicine of the University of Cincinnati.

Dr. Leon H. Feldman (U. of Md. 1934) announces the opening of an office for the practice of internal medicine and diseases of the chest at the Flat Iron Building, Asheville, North Carolina. Dr. Feldman was formerly resident physician of the Tuberculosis Division at the Baltimore City Hospitals.

With the recent announcement of the dates for the next annual meeting of the Massachusetts Medical Society at Worcester on June 6, 7 and 8, 1939, plans are being considered by the Worcester County Alumni for the Sixth Annual Luncheon-Meeting of the New England Alumni on one of these dates in Worcester. Inquiries and suggestions should be addressed to the Secretary-Treasurer, Dr. Charles E. Gill (U. of Md. 1927), Westfield State Sanatorium, Westfield, Massachusetts.

PROCEEDINGS

of the

University of Maryland Biological Society

Officers of the Society

O. G' Harne, *President*
School of Medicine
Baltimore, Md.

C. Jelleff Carr, *Treasurer*
School of Medicine
Baltimore, Md.

E. C. Dobbs, *Secretary*
School of Dentistry
Baltimore, Md.

Ronald Bamford, *Secretarial Representative*
Department of Botany
College Park, Md.

Councillors

H. Boyd Wylie
Frank H. J. Figge
A. Y. Russell
Walter H. Hartung

THE NINETY-FIFTH PROGRAM MEETING

The Ninety-Fifth Program Meeting of the University of Maryland Biological Society was held on December 6, 1938 in the Pharmacy School Building. The following papers were read:

I. "The Life Duration of the Red Blood Cell (Rat)" by O. G. Harne, J. F. Lutz, M.D. and C. L. Davis, M.D., Department of Histology, School of Medicine, University of Maryland.

II. "Cerebellar Agenesis" by H. S. Rubenstein, Ph.D., M.D., Research Laboratory, Surgical Division, Sinai Hospital, Baltimore, and Walter Freeman, Ph.D., M.D., Department of Neurology, George Washington Medical School, Washington, D. C.

At the business meeting held earlier in the evening the following officers were elected:

President: O. G. Harne.
Secretary: E. C. Dobbs.
Treasurer: C. Jelleff Carr.
Secretarial Representative: Ronald Bamford.
Member of the Council: Walter H. Hartung.

At this meeting the following candidates were elected to membership:

For Ordinary Membership: Robert H. Oster, Ph.D., Louise Kelley, Marvin J. Andrews, B.S., M.S., C. W. Chapman, Ph.D., Raymond Hussey, M.A., M.D., Elsa F. Jahn.

For Associate Membership: Amelia Carmel DeDominicis, M.S., Josephine Muth, Anne M. Gorman, Kathleen Cadden, A.B., Douglas A. Browning, D.D.S.

THE LIFE DURATION OF THE RED BLOOD CELL (RAT)

O. G. HARNE, J. F. LUTZ, A.B., M.D. AND C. L. DAVIS, M.D.*†

BALTIMORE, MD.

The life duration of the red blood cell in the rat was approached through the medium of the staining characteristics of its young erythrocytes (reticulocytes). Such reticulocytes, supravitally stained with brilliant cresyl blue, may be used as an indicator of mass replacement of blood corpuscles lost as a result of induced hemorrhage in the rabbit (1).

By the use of this principle a total of thirty-six rats (Wistar Institute strain) made up of two groups, one standardized, the other of stock animals, were studied to determine the length of life of the red blood corpuscles in the rat. The normal reticulocyte level as determined by the authors' technique was first established by making daily reticulocyte counts of supravitally stained blood smears upon twenty-two animals observed over periods of from ten to sixty-five days each. This constituted the group of standardized animals. The animals were then depleted of blood in amounts varying between 0.17 and 2.5 per cent of their body weights. Following the hemorrhage, daily reticulocyte counts were made from which the various types of reticulocyte curves were plotted. Standardized animals gave reactions characterized by rhythmic rise and fall in the number of reticulocytes, the interval between these peak counts averaging eight-and-one-half days, with maximal and minimal intervals of ten and seven days respectively. The first reticulocytic peak following hemorrhage appeared either as a prompt reaction averaging three days in its ascent, or was delayed from eight to nine days in reaching its maximum. These reactions are termed respectively primary and secondary responses and vary in extent as the degree of hemorrhage. Some animals showed both types of response (combined response). A third or arrhythmic (indefinite) type of initial response was obtained upon a second bleeding from animals previously subjected to

* From the Department of Histology, School of Medicine, University of Maryland.

† Read at the meeting of the University of Maryland Biological Society, December 6, 1938.

extensive hemorrhage (i.e., amounting to 1.5 per cent or more of their body weights) and from 43 per cent of unstandardized (stock) animals whose control reticulocyte level had not been previously determined. In this response there are neither primary nor secondary reticulocyte peaks. Even though a reticulocytosis always results, there is little adherence to the quantitative value of the stimulus (hemorrhage) and this has been termed an indefinite response.

The primary and secondary responses are interpreted to mean that hemorrhage is a sufficient stimulus for the maturation of generations of primitive cells of the bone marrow. Rhythmic reticulocyte peaks following the primary and secondary responses are interpreted as evidence of the influx of new groups of erythrocytes to compensate for the removal, through mass senescence, of the reticulocyte group responsible for the immediately preceding reticulocyte peak. Thus, the elapsed days between adjacent reticulocyte peaks indicate the life duration of erythrocytes, which in the albino rat averages between eight and nine days.

From the data presented it was shown (1) that the life cycle of the circulating erythrocyte in the albino rat averages between eight and nine days; (2) hemorrhage is an efficient hemopoietic stimulus in the albino rat; (3) the response of the animal to hemorrhage is proportional to the degree of hemorrhage; (4) cyclic reticulocyte response is obtained with certainty only from standardized animals subjected to an optimal degree of hemorrhage.

REFERENCE

1. Eaton, Paul and Damren, F. L.: A Method for Determining the Life Duration of the Erythrocyte. The South. Med. Jour., *23*, No. 4, pp. 311–313, 1930.

DEATHS

Barre, Joseph A., Uncasville, Conn.; P. & S., class of 1892; aged 69; died, July 25, 1938.

Bell, Monsell Ray, Keyser, W. Va.; class of 1903; aged 59; died, August 31, 1938, in the Allegany Hospital, Cumberland, Md., of myocarditis.

Bolton, William Jackson, Washington, D. C.; P. & S., class of 1892; aged 67; died, June 18, 1938, in the Casualty Hospital, Washington, D. C.

Burwell, Nathaniel, Shepherdstown, W. Va.; class of 1907; died, September 16, 1938, of pulmonary tuberculosis.

Crowell, Andrew Johnson, Charlotte, N. C.; class of 1893; aged 71; died, September 21, 1938, in a local hospital, of carcinoma of the stomach.

Evans, Alexander Mason, Baltimore, Md.; P. & S., class of 1912; associate professor of surgery at the University of Maryland School of Medicine; fellow of the American College of Surgeons and member of the Medical and Chirurgical Faculty of Maryland; served during the World War; aged 53; on the staff of the Mercy Hospital, where he died, July 24, 1938, of cardiovascular disease.

Evans, Carroll D., Columbus, Neb.; P. & S., class of 1882; aged 82; died, August 12, 1938, of gangrene, sepsis and arteriosclerosis.

Farrell, Charles A., Waterbury, Conn.; P. & S., class of 1914; aged 44; died, May 15, 1938.

Hardcastle, Hughlett, Easton, Md.; class of 1895; aged 76; died, June 18, 1938.

Hayes, Robinette Burns, Hillsboro, N. C.; class of 1906; served during the World War; aged 61; died, July 16, 1938, in the Watts Hospital, Durham, N. C., of cholelithiasis.

Healy, Harrison Thomas, New Bedford, Mass.; B.M.C., class of 1907; aged 55; died, June 1, 1938, of chronic myocarditis.

Highsmith, Charles, Dunn, N. C.; B.M.C., class of 1898; aged 66; died, September 9, 1938, in the Highsmith Hospital, Fayetteville, N. C., of pneumonia.

Huff, Isaac Eldridge, Roanoke, Va.; P. & S., class of 1892; aged 72; died, August 17, 1938, of pneumonia.

Krebs, Jacob S., Herndon, Pa.; P. & S., class of 1884; aged 76; died June 10, 1938.

Langford, John R., Swansea, S. C.; P. & S., class of 1885; aged 82; died, August 21, 1938, at Pelion, S. C.

Linville, W. Clinton, Goldsboro, N. C.; class of 1903; aged 59; died, August 30, 1938, of tuberculosis.

Loevenson, Morris Leon, Chicago, Ill.; P. & S., class of 1893; aged 76; died, September 27, 1938, of carcinoma of the stomach.

Mayer, John H., Lakeland, Fla.; B.M.C., class of 1902; aged 60; died, September 10, 1938, of coronary thrombosis.

McCreary, John Bruce, Shippensburg, Pa.; class of 1892; aged 68; died, September 13, 1938.

Merkel, Henry Anthony, Wilmington, Ill.; class of 1916; served during the World War; aged 47; died, July 26, 1938, of heart disease.

Morrison, Fred J., Norwalk, Conn.; P. & S., class of 1911; aged 53; died, May 24, 1938.

Muns, Leonard A., Smithfield, N. C.; P. & S., class of 1885; aged 76; died, August 30, 1938, in the Johnston County Hospital of a fracture of the hip and pneumonia.

Newcomb, Arthur Thurston, Pasadena, Calif.; B. M. C., class of 1893; served during the World War; aged 65; died, July 18, 1938, of cerebral embolism.

Northrop, Clifton A., Hermon, N. Y.; P. & S., class of 1882; aged 82; died, July 12, 1938, of cerebral hemorrhage.

Palmerton, Roswell Kelsey, Deposit, N. Y.; P. & S., class of 1881; aged 81; died, June 7, 1938, of chronic nephritis.

Pickering, Juba Everett, Brooklyn, N. Y.; P. & S., class of 1908; served during the World War; aged 58; died in June, 1938.

Porter, John Wesley, New Park, Pa.; class of 1895; aged 72; died, June 26, 1938.

Sallume, Najib Nassif, Toledo, Ohio; B. M. C., class of 1896; aged 69; died, June 30, 1938, of coronary occlusion and vascular sclerosis.

Smith, Ellis Andrew, Sunbury, Pa.; B. M. C., class of 1891; aged 70; died, in July, 1938, of organic heart disease.

Smith, Lawrence H., Hazleton, Pa.; P. & S., class of 1883; aged 78; died, June 20, 1938, of pneumonia.

Stevens, Samuel Amos, Monroe, N. C.; class of 1900; aged 67; died, July 9, 1938, in a hospital in Charlotte, N. C., of uremia and arteriosclerosis.

Stewart, Harry Hambleton, Pottsville, Pa.; B. M. C., class of 1907; served during the World War; aged 68; died, June 17, 1938, of typhoid.

Taliaferro, Lee, Madison Mills, Va.; class of 1893; aged 72; died, July 19, 1938, of pneumonia.

Tolleson, Clarence C., Long Beach, Calif.; class of 1914; aged 47; died, June 12, 1938.

Travers, John C., Baltimore, Md.; class of 1895; aged 65; died, June 11, 1938, of coronary thrombosis.

Wareham, Edward Alexander, Hagerstown, Md.; class of 1883; aged 79; died, August 18, 1938, of carcinoma of the prostate with metastasis to the bladder.

Weber, George F., Ira, N. Y.; P. & S., class of 1889; aged 74; died, August 30, 1938, in the Syracuse (N. Y.) Memorial Hospital, of coronary thrombosis and diabetes mellitus.

Woodman, Daniel N., North Haven, Me.; P. & S., class of 1893; aged 77; died, November 26, 1938, at the Maine Eye and Ear Infirmary, Portland, Me.

BULLETIN

OF THE

SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

Vol. 23 APRIL, 1939 No. 4

A SHORT SURVEY OF SULFANILAMIDE*†

CHRISTOPHER C. SHAW, M.D., *Bellows Falls, Vt.* AND HERBERT E. FITCH, JR., B.S., *Burlington, Vt.*

Sulfanilamide did not suddenly appear on the horizon of medical science as a magic wand provided by a bountiful alchemy for the practitioner to wave over his troubles. On the contrary, it is the product of numerous and painstaking investigations which extended over a period of thirty years (Schulte, 1). In working on the chemistry of azo dyes for the German dye industry, Gelmo (2) first mentioned para-aminobenzene sulfonamide. His experiments were purely technical and without therapeutic goal, hence no clinical trials were made at that time with this compound, which is now known as sulfanilamide.

In the years directly preceding the World War several investigators (3, 4, 5, 6) synthesized numerous azo compounds. These were given therapeutic trial and a few have stood the test of time, notably chrysoidine, pyridium, scarlet red and dimazon. Heidelberger and Jacobs (7) in 1919 stated that many of the compounds were highly bactericidal in vitro, but they failed to present evidence at that time to substantiate their statement and thus allowed a therapeutic triumph to slip through their fingers. In 1930 Ostromyslensky (8) synthesized serenium, which was used in the treatment of urinary tract infections. In 1932 Mietzsch and Klarer (9) synthesized and patented an azo dye which has become known as prontosil, prontosil rubrum, prontosil flavum, or sulfonamidochrysoidine. During this same year Domagk (10), working with Mietzsch and Klarer (9), demonstrated the efficacy

* From the Department of Medicine, College of Medicine, University of Vermont.

† Received for publication March 13, 1939.

of this compound in streptococcic septicemia of mice. These chemists created another experimental compound by adding an azo-naphthalene ring to the chrysoidine molecule. They patented this formula, which soon received several commercial names, to wit: streptozon, streptozon S, prontosil, prontosil 2, prontosil red, prontosil S, prontosil soluble, prontosil solution and D-5214. Domagk (10), director of the experimental pathology laboratory of Elberfeld, Germany, was the first to point out the significance of the sulfonamide radical in the para position in these azo (benzene) compounds and to demonstrate the therapeutic possibilities of para-aminobenzene sulfonamide (sulfanilamide).

The French investigators Girard (11), Levaditi and Vaisman (12), then took up the problem and synthesized a compound called rubiazol 1 or prontosil French, which was shown to be chemically and therapeutically identical with the German prontosil. However, in the meantime the workers in Fourneau's laboratory (13), the Trefouëls, Nitti and Bovet, had been quietly experimenting with sulfanilamide and other isomers of this compound and after sixteen years of intensive research had demonstrated beyond the shadow of a doubt that the ortho and meta compounds were inactive and that only para-aminobenzene sulfonamide possessed bactericidal powers.

The cudgels were next swung by the British under the clinical and bacteriological leadership of Colebrook, Buttle and O'Meara (14), and later by Fuller (15) who definitely established the chemotherapeutic valency of sulfanilamide. Finally, Long and Bliss (16) in America confirmed the findings from Fourneau's (13) laboratory and proved that para-aminobenzene sulfonamide was the product of reduction of prontosil and streptozon. Marshall, Cutting and Emerson (17) of Baltimore administered the drug by mouth and found that sulfanilamide is detoxified by the liver and conjugated in the organism to para-acetyl aminobenzene sulfonamide and excreted as such in the urine. The unconjugated portion of the molecule is excreted free and unchanged by the kidneys.

Thus it was shown that para-aminobenzene sulfonamide is the active therapeutic principle inherent in compounds synthesized from the azo dyes. The term *Sulfanilamide* was adopted in May, 1937 by the Council on Pharmacy and Chemistry of the American Medical Association to designate this drug, which still continues to be the object of extensive biochemical and clinical research.

Knowledge of the mode of action of sulfanilamide (and its derivatives), its wide field of therapeutic usefulness, its indications and contraindications, its toxicity, its side-actions and its failures is

increasing daily at an astounding rate. The earlier papers on the various aspects of the subject have been replaced by monographs, treatises, news items, handbills and even radio announcements. The gentle rain of information has become a veritable deluge of propaganda and has resulted in a confusion of tongues, both among the laity and the medical profession, concerning the positive knowledge of sulfanilamide, its uses, abuses and the control of administration.

The purpose of this short paper is to review a few of the salient points in the matter with the hope that order may be established from the general confusion, and a working basis presented whereby the general practitioner may intelligently prescribe sulfanilamide for the best interests of his patient.

Para-aminobenzene sulfonamide is a white, odorless, crystalline powder which is slightly soluble in water and alcohol at room temperature and readily soluble in boiling water and yields an .8 per cent solution of sulfanilamide on cooling. *Prontylin* is the proprietary name of the Winthrop Chemical Company, Inc. for its brand of sulfanilamide, which has no particular advantages over other reliable brands of sulfanilamide on the market. *Prontosil* or *Prontosil S* (soluble) is a disodium salt of sulfanilamide available as a red dye. It contains 2.5 per cent of the drug in solution and yields only .73 per cent of sulfanilamide when broken down. Prontosil has the disadvantage of coloring the tissues red and also irritates the meninges when injected intrathecally. Para-aminobenzene sulfonamide is not an "antiseptic" in the true sense of the word because it is not a general protoplasmic poison, because it exhibits definite specificity of action against certain organisms, and because of its low toxicity for animals.

Sulfanilamide is best given by mouth. However, subcutaneous or intramuscular injection of an .8 per cent solution of the crystalline powder in physiologic saline may be employed in critical cases where adjunctive therapy is indicated, or in those patients where oral administration is impracticable on account of nausea and vomiting. The saturated solution of sulfanilamide (.8 per cent) may also be administered by rectum, intrapleurally, intrathecally and intraperitoneally. Since the drug will be excreted in free form by the kidneys it should never be given intravenously. To do so is useless, as the rate of excretion will outrun the rate of absorption.

A conjugation of sulfanilamide with the tissue proteins of the body occurs and forms the compound acetyl-sulfanilamide, which is entirely inactive both chemically and therapeutically. The secret of the chemotherapeutic efficacy of para-aminobenzene sulfonamide resides

in the free form of sulfanilamide in the blood and tissues. The exact mode of action of this free form in the body is not wholly understood but it would appear to serve at least two functions. On the one hand the drug is mildly bacteriostatic; on the other it acts as a powerful stimulant to the phagocytic action of the polymorphonuclear leukocytes early in infection and, later, to the monocytes in the circulating blood.

Moreover, sulfanilamide is a drug of wide chemotherapeutic valency. Its chief claim to fame is based on its remarkably specific action in infections caused by the beta-hemolytic streptococci, whether they be local or general, focal or systemic. It is also a near specific in meningococcic and gonococcic infections and has been employed with success in nonspecific pneumonias (Type 3), gas gangrene, B. abortus (undulant fever), actinomycosis, malaria, trachoma, influenza, B. coli and mixed infections. It has met with little, if any, success in staphylococcal invasions, typhoid fever, tuberculosis, rheumatic fever and experimental syphilis. It is of doubtful value in diseases which are the result of filterable viruses.

To obtain the desired therapeutic effect, sulfanilamide must be present in adequate concentration in the blood and tissues of the patient. The degree of concentration of the drug in the human body can be established by determining the amount of conjugated sulfanilamide in the circulating blood or in the urine. Marshall, Emerson and Cutting (17) were the first to devise a practical method for determining the *blood-sulfanilamide*. Several modifications of this method have been reported but all are based on the same principle of acetylation of the free sulfanilamide in the blood with acetic acid. The method of Kamlet is outlined herewith in detail as the authors have found its routine use in the Rockingham Hospital to be simple, accurate and inexpensive.

THE DETERMINATION OF SULFANILAMIDE IN BLOOD

The method of Kamlet, taken from the Journal of Laboratory and Clinical Medicine, Vol. 23, No. 10, Page 1101, July, 1938, is as follows:

Reagents required

1. Trichloracetic acid, 5 per cent solution. Dissolve 50 gm. (C.P.) trichloracetic acid in 800 cc. of water and dilute to one liter.
2. Sodium nitrite, 1 per cent solution. Dissolve 10 gm. (C.P.) sodium nitrite in 800 cc. of distilled water and dilute to one liter. This solution will keep indefinitely in an amber colored, glass stoppered bottle.
3. Dimethyl-alpha-naphthylamine, 1 per cent solution. Dissolve 1 cc. of this compound (Eastman Kodak) in 100 cc. of 95 per cent alcohol.
4. Ethyl alcohol, 95 per cent.

5. Sulfanilamide, standard solution. Dissolve exactly 200 mg. of C.P. sulfanilamide in 800 cc. of boiling distilled water, let cool to room temperature, and dilute to one liter. One cubic centimeter of this solution contains 0.2 mg. of sulfanilamide.

Procedure

To 2 cc. of oxylated or citrated blood, add 18 cc. of 5 per cent trichloracetic acid solution, mix, let stand for ten minutes, and then filter through a retentive, ashless filter paper.

Pipette 10 cc. of the filtrate into a 6″ x 1″ test tube. To a similar tube, add 1 cc. of sulfanilamide standard, 6 cc. of trichloracetic acid solution, and 3 cc. of 95 per cent alcohol. To both add now 0.1 cc. of the 1 per cent sodium nitrite solution, mix, and let stand for three minutes.

One cubic centimeter of the dimethylnaphthlamine solution is now added to each test tube with gentle shaking, the tubes are set aside for ten minutes and then compared in the colorimeter.

$$\frac{\text{Reading of Standard}}{\text{Reading of Unknown}} \times 20 = \text{mgm. sulfanilamide per 100 cc. whole blood}$$

Or

Set the unknown at 20 mgm. and compare. Reading of the standard equals milligrams of sulfanilamide per 100 cc. of whole blood.

Since the therapeutic effect of the drug is dependent on its adequate concentration in the blood (and tissues) of the patient, the initial dose of sulfanilamide should be large enough to saturate the blood stream. This initial dose should be followed by smaller doses at regular intervals to maintain an adequate level of the drug in the blood of the patient over a considerable period of time. An adequate blood-sulfanilamide level may be defined as that concentration which is sufficient to arrest the disease process and initiate healing. Since different organisms produce different diseases and since the severity of a given disease may vary with different strains of the same organism, the adequacy of concentration of the blood-sulfanilamide will vary within a given range, depending on the factors at hand.

The optimum range of blood-sulfanilamide for severe septic infections lies between 8 to 10 milligrams per 100 cubic centimeters of blood. In septicemia, a blood-sulfanilamide of 8 to 10 mg. per cent should be obtained as early as possible. This may be done by giving 60 grains of sulfanilamide by mouth as the initial dose and following it with 15 grains every four hours until the desired concentration in the blood is obtained. The blood-sulfanilamide should be determined at the end of four, twelve and twenty-four hours, as the rate of absorption of the drug may vary with different individuals. This is particularly true in patients with impaired renal function to whom the drug should be given with great care, as it is excreted slowly and builds up in the blood and body tissues of such patients by inverse ratio. The

optimum level of the blood-sulfanilamide in such cases may be reached sooner and with smaller doses than in patients whose renal function is normal.

With this point in mind it has been the authors' practice, whenever possible, to determine the renal function of each patient before starting sulfanilamide therapy. Once a satisfactory (adequate) level of concentration of the drug has been obtained, a reading of the blood-sulfanilamide is made each morning and the dose for the day is accordingly calculated. The patient is thus assured of the optimum benefit from the drug, and the physician knows that he is neither overdosing nor underdosing his patient. By such procedure guesswork is eliminated and the danger of toxicity avoided. Toxic manifestations appear when the level of the blood-sulfanilamide reaches 15 to 20 mg. per cent or higher. In milder infections caused by hemolytic streptococci, in gonorrhea and particularly in urinary tract infections, smaller doses of sulfanilamide ranging from 60 to 90 grains a day will give a satisfactory response and produce an adequate blood-sulfanilamide level of from 4 to 7 mg. per cent. Once a satisfactory concentration in the blood has been obtained, administration of the drug by mouth every six hours is sufficient to maintain the therapeutic level of blood-sulfanilamide. This maintenance dosage is usually in the neighborhood of from 40 to 60 grains in twenty-four hours and should be continued until clinical improvement warrants its reduction, when from 20 to 30 grains at daily intervals may be continued from three to six weeks. As a rule, this method will maintain a satisfactory blood-sulfanilamide level indefinitely.

The dosages outlined above refer to adults who are able to tolerate the drug by mouth. In treating moderate or severe infections by use of the subcutaneous route alone, 25 grains may be given at intervals of eight hours. Sulfanilamide is soluble up to 1 per cent in physiologic saline solution at 37°C. The required amount of sterile physiologic saline is brought to a boil, removed from the flame and for each 100 cc. of this hot solution 1 gram of sulfanilamide powder is added and agitated before cooling. This 1 per cent solution of the drug will remain fairly stable at room temperature, but if placed in an icebox the sulfanilamide will crystallize out of solution.

The amounts shown in table 1 represent adequate therapeutic doses for treating moderate or severe infections by the parenteral route (hypodermoclysis).

Intrathecal therapy likewise may be given at eight hour intervals in conjunction with administration of sulfanilamide by hypodermoclysis or by other parenteral routes. In patients with meningitis,

spinal drainage is first performed and an amount of sulfanilamide solution 5 to 10 cc. less than the amount of withdrawn spinal fluid is allowed to run into the spinal canal under the force of gravity, never by positive pressure.

Other medication, with the exception of sulphur compounds, notably the cathartic magnesium sulphate, may be given in conjunction with sulfanilamide. The presence of other sulphur compounds is thought to increase the hazard of sulphemoglobinemia, which may result in asphyxiation of the tissues. It is also better practice not to administer barbiturates to a patient receiving sulfanilamide because of the added danger of liver damage.

If the patient tolerates the drug well and shows definite clinical improvement, the dosage should be rapidly reduced to about one-third the original amount and continued at this reduced level until convalescence is well established. Mild to moderately severe streptococcic

TABLE 1

PATIENT	INITIAL DOSE OF 1% SULFANILAMIDE SOLUTION	SUBSEQUENT DOSES AT 8 HR. INTERVALS
Adult	500 cc.	300 cc.
Youths weighing 50–90 lbs.	200 to 400 cc.	200 cc.
Children weighing 25 to 50 lbs.	100 to 300 cc.	100 to 200 cc.
Babies weighing 10 lbs. or more	100 cc. for each 10 lbs.	50 cc. for each 10 lbs.

infections, such as septic sore throat, may be controlled by giving two or three 5 grain tablets at four hour intervals; in children, one to two tablets every four to six hours may suffice. Sulfanilamide may also be used to advantage as a prophylactic agent in streptococcic epidemics; 5 to 10 grains may be given three or four times a day, depending on the age factor. If, however, the therapeutic dose produces no satisfactory clinical response after thirty-six hours of sulfanilamide therapy, the dose may be cautiously increased and the concentration in the blood should be checked every twelve hours. In the event of rapid and rather dramatic improvement in the patient it is a mistake to withdraw the drug too soon, as exacerbation of the infection may appear. This point is well illustrated in the following case report.

CASE REPORT

R. H., a white male child, age 3½, was hospitalized on December 25, 1938 because of frequent tight cough, high temperature and signs of toxemia. Several days prior to admission the patient suffered an attack of acute coryza which developed into a typical tracheobronchitis. The past and family histories were irrelevant.

When admitted, the temperature was 104.8, the pulse rate 140, and the respirations 24. On physical examination the ears and nose were found essentially negative, the lips presented herpes, and tonsils and pharynx were somewhat injected. An examination of the chest revealed moist râles posteriorly over the base of the right lung. The heart was normal, except for tachycardia. The abdomen and extremities were negative.

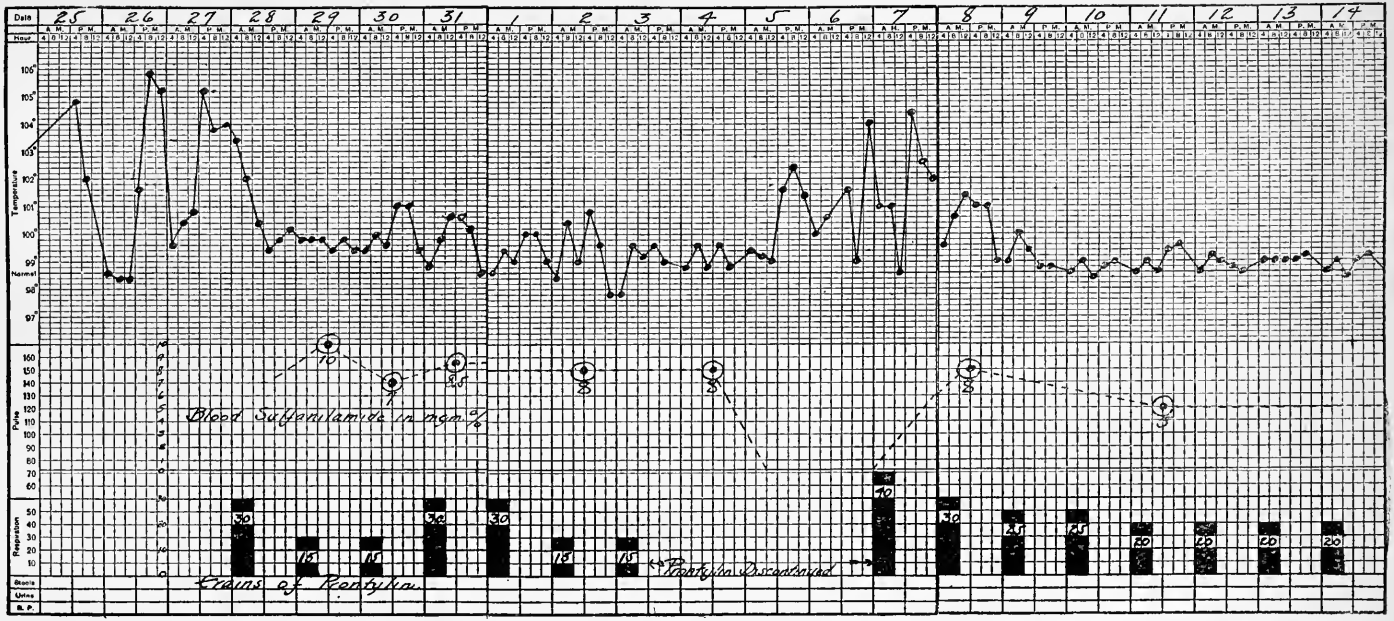
Upon admission it was felt that the child was acutely ill with bronchopneumonia. No sputum was obtainable. The blood culture was negative and a lung puncture did not seem advisable, therefore symptomatic treatment was initiated for three days. It was then decided that the condition was a septic pulmonary infection which might be amenable to sulfanilamide therapy.

Accordingly the drug was started on December 28 with a daily dose of 30 grains. Blood counts at frequent intervals revealed a moderate leukocytosis with a characteristic polymorphonuclear preponderance. On December 28, the day of the initiation of prontylin, the temperature fell from 103.4 to 100 and remained at this level until January 3, when it dropped to 99.0, remaining thus with minor fluctuations for the following six days. During this period the patient was quite comfortable and his progress was eminently satisfactory. Sulfanilamide was therefore discontinued on January 4, 1939. The next day the temperature rose to 102.0 and two days later reached 104.8. Prontylin therapy was reestablished on January 7 and within twenty-four hours the temperature returned to 99.0, where it remained during the rest of the patient's course in the hospital. One week later, he was discharged from the hospital as "cured", but it was thought safer to continue the prontylin in small doses at his home for another fortnight. The remainder of his convalescence was uneventful and his recovery complete. The accompanying chart shows in graphic form the relationship between the prontylin dosage and the blood-sulfanilamide level, also the effect of the drug upon the course of the infection, as indicated by the temperature curve. In addition it demonstrates the inadvisability of the withdrawal of sulfanilamide therapy too soon.

Nearly every patient who receives sulfanilamide develops a mild degree of acidosis characterized by a slight fall in the carbon dioxide combining power of the blood. In the severer forms, air hunger may develop. This condition of acidosis (without ketosis) may readily be combatted by giving the patient 10 grains of sodium bicarbonate by mouth with each dose of sulfanilamide. This procedure has now become routine practice. If clinical acidosis develops, the intravenous administration of one-sixth molar solution of sodium lactate will combat the acidosis.

Sulfanilamide also produces other mild toxic effects. Dizziness and nausea are common in ambulatory patients. Anorexia and cerebral euphoria may appear. However, these side effects are rare in patients who are kept in bed during the period of intensive treatment.

Serious toxic manifestation associated with the blood or hematopoietic system rarely occurs. Acute hemolytic anemia characterized by a dramatic fall in hemoglobin and red cell count, with signs of exhaustion of the erythropoietic tissue, may suddenly appear and


Date
Hour
Temperature
Normal
Pulse
Respiration
Stools
Urine
B. P.
Blood Sulfanilamide in mgm. %
Grains of Prontylin.
Prontylin Discontinued

necessitate immediate blood transfusion and withdrawal of the drug. Another dangerous aspect of sulfanilamide is its toxic effect indicated by the development of granulocytopenia. Fatal agranulocytosis has been known to occur (18). With these two points in mind, the authors have requested that all cases in their small hospital have a complete blood count on admission before receiving the drug and every twenty-four hours thereafter.

Para-aminobenzene sulfonamide may produce fever which, if it occurs, usually appears between the fifth to seventh day. If the drug is withdrawn the fever will subside, provided the fever is caused solely by the drug and not by an exacerbation of the infection. Morbilliform skin rashes accompanied by fever may appear from the eighth to the fourteenth day of treatment. Discontinuance of the sulfanilamide will produce disappearance of the rash and fever within forty-eight hours. Other toxic manifestations include cyanosis, gastrointestinal and central nervous system intoxication, precordial and abdominal pain, dermatitis, jaundice, fatal hepatitis and acute yellow atrophy of the liver. Delayed sulfanilamide sickness occurring eighteen days after the drug has been stopped and characterized by hyperpyrexia, jaundice, enlargement of the spleen and liver, and by rash has been reported (19).

Every patient receiving the drug should be watched carefully for signs of sensitivity and idiosyncrasy as shown by toxic manifestations. When these first appear the drug should be given with great caution and if toxic symptoms persist and increase, administration of sulfanilamide should be discontinued at once and fluids forced by mouth or by parenteral injection. Table 2 taken from Long, Bliss and Feinstone (20) gives the percentage occurrence of toxic manifestations in 408 patients who were kept in bed under close observation during the major portion of their treatment with sulfanilamide.

The contraindications for administration of para-aminobenzene sulfonamide include evidences of hepatic, renal or bone marrow impairment as shown by jaundice, elevation of the nonprotein nitrogen of the blood, delayed or decreased excretion of phensulphonphthalein dye by the kidneys, and by leukopenia and severe anemia on blood count. There is no specific antidote for sulfanilamide poisoning. The only known measures of any value in such instances are first, the immediate discontinuation of the drug and, second, the forcing of fluids to expedite excretion. Pregnancy is no contraindication to the controlled use of sulfanilamide.

In the past year considerable work has been done on a new derivative of sulfanilamide known as sulfapyridine, *Dagenan* or *M & B. 693.*

This compound is designated as 2 (para-aminobenzene sulfamide) pyridine and has met with remarkable success in the treatment of experimental pneumococcic, Friedländer's bacillus and staphylococcic infections in mice. It is about as efficient as sulfanilamide in treating streptococcic, meningococcic and Clostridium welchii infections in experimental laboratory animals but has not met with proportional

TABLE 2

*Toxic Manifestations of Sulfanilamide Noted in the Treatment of 307 Adult Patients and 101 Children**

Type of infection, adult group		*Type of infection, children*	
Streptococcic infections	107	Streptococcic infections	58
Other infections	200	Other infections	43

TOXIC MANIFESTATIONS	FREQUENCY, ADULTS	FREQUENCY, CHILDREN	COMMENT
	per cent	*per cent*	
Dizziness, anorexia, nausea, vomiting	Anorexia common	Anorexia common	Rarely severe enough to warrant discontinuing use of sulfanilamide.
Cyanosis	90 to 100	90 to 100	Of little clinical importance.
Simple fever	9	3	Very important warning sign; always stop use of sulfanilamide.
Dermatitis	1.6	3	Best to stop use of sulfanilamide.
Acidosis	3.6	2	Can be prevented if sodium bicarbonate is given as a routine.
Renal irritation	0	0	If renal function is low, sulfanilamide is not excreted well.
Jaundice (without anemia)	0.6	0	Stop use of sulfanilamide.
Mild hemolytic anemia	Common	Common	Not dangerous; continue use of drug and observe patient carefully.
Acute hemolytic anemia	2.9	8.9	In general stop use of sulfanilamide; drug may be given with multiple transfusions.
Agranulocytic angina	0.3	0	Stop use of sulfanilamide.

* Long, P. H., Bliss, Eleanor, A. and Feinstone, W. H.: Mode of Action, Clinical Use and Toxic Manifestations of Sulfanilamide, further observations. Jour. Am. Med. Assn., *112:* 2, Jan. 14, 1939.

success in the therapy of these latter infections in man. Sulfapyridine is irregularly absorbed and slowly excreted, the toxic manifestations are essentially those observed when sulfanilamide is used, and rational schemes of therapy have not as yet been presented (Long, 21). The Council on Pharmacy and Chemistry of the American Medical Association feels that in the light of available evidence the general use of

sulfapyridine is not warranted at the present time* (Jour. Am. Med. Assn., page 538, February 11, 1939). However, the Council has approved limited use of this drug by properly qualified persons for investigation of its value in pneumococcic, severe staphylococcic and Friedländer's bacillus infections. Recent evidence (22, 23) indicates that sulfapyridine, or the soluble sodium salt of this preparation (24), holds great promise in the pneumonias, when used alone or in conjunction with specific horse serum or rabbit serum. If employed with due regard for their toxic possibilities, sulfapyridine and sulfanilamide are valuable chemotherapeutic agents with a satisfactory margin of safety.

COMMENT

An effort has been made to show that sulfanilamide is a drug of wide chemotherapeutic valency but that it also possesses potent side actions, many of which are dangerous, a few rapidly fatal. Caution is therefore essential in employing this drug in the treatment of any disease and the course of therapy should be under control at all times. Self-medication by the laity or by the profession is mentioned only to be condemned. In order to protect both the patient and the practitioner, the following rules for the administration of sulfanilamide are suggested:

1. The etiology of the infection should first be determined by bacteriological investigation, including blood cultures.
2. The blood count, urinalysis, blood chemistry and renal function tests should be completed before initiating sulfanilamide.
3. A daily determination of the blood sulfanilamide level during the course of therapy is required.
4. Routine blood count and urinalysis are necessary every twenty-four hours.
5. Ten grains of sodium bicarbonate should be given with each dose of sulfanilamide to prevent acidosis.
6. It is necessary to watch for signs of toxicity. Careful and frequent observation of each patient is essential.
7. It is never advisable to give magnesium sulfate or other sulphur compounds in conjunction with sulfanilamide.
8. It is best to avoid the barbiturates as much as possible during this period.
9. If the patient tolerates the drug well, it should be continued in

* Since this article was prepared, the drug sulfapyridine has been released for general distribution to physicians and may be obtained from Merck and Company and Lederle Laboratories, Inc.

moderate doses for at least a week after all symptoms have disappeared. In severe infections the drug should be given routinely for four weeks or more.

10. Sulfanilamide is not a panacea, nor should it ever be employed as a placebo.

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SUBPHRENIC ABSCESS COMPLICATING APPENDICITIS

Treated by Catheterization of Fistulous Tract*†

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Subdiaphragmatic, subphrenic, or suprahepatic abscess, as a rule, produces a most elusive clinical picture. This is particularly true in its earlier stages, frequently taxing the combined diagnostic resources of the internist, roentgenologist and surgeon. The history of a laparotomy for a septic condition is the most important link in the circumstantial chain. Ochsner and DeBakey (1) in collective review, and an analysis of 3608 cases of subphrenic abscess, found 84 per cent complicating an intra-abdominal suppurative focus, of which 30.9 per cent were traceable to an infected appendix.

Usually the onset is insidious, with delayed convalescence, malaise, easy fatigue, sweating, loss of weight, leukocytosis, and elevation in temperature, which may be interrupted by a chill and very often without demonstrable localizing symptoms. A discharging sinus may be present. With this syndrome presenting, the first thought as to its cause is inadequate drainage with the formation of a pus pocket, but too frequently the suspicion is not confirmed by careful examination. Assuming no foreign body has been left in the abdomen, and with the continued systemic manifestations, there are good grounds for entertaining the possibility of a localized infection in the subdiaphragmatic space or, that still rarer entity, pylephlebitis. However, the latter condition usually is more fulminating and runs a rapid clinical course. In the event the patient has had an amebic infection, there is greater assurance of a subphrenic or intrahepatic abscess. In short, any unexplained obscure sepsis in a patient having had a recent intraperitoneal infection, or history of amebiasis, should arouse suspicion in the subphrenic region.

While there are many collateral diagnostic procedures of value, the roentgenologist plays the most important rôle in elucidating this bizarre condition. The fixed and frequently elevated position of the diaphragm, with or without concomitant pleural effusion, and with partial or complete obliteration of the right cardiophrenic angle in the posterior-anterior view and the costophrenic angle in the lateral view of the diaphragm, are quite suggestive. In gas-forming

* From the Veterans Administration Facility.

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abscesses, which occur in about one-fourth of all cases, a bubble with a fluid level may be seen under the cupola of the diaphragm. The existence of a basal pleurisy, or an effusion on the same side, renders differentiation more difficult, but pneumoperitoneum given judiciously may be of diagnostic aid in this instance, as suggested by Lilienthal (2). Exploratory aspiration, either transpleural or transperitoneal, has been severely condemned by Ochsner (3), Grove (4), Schwartz (5), Lehman (6), Doherty and Rowlands (7), and others, chiefly because of the possibility of infecting the adjacent serous cavities if pus is found, which would superimpose a complication as alarming as the suspected focus. Elkin (8) and Lockwood (9) perform diagnostic puncture for suprahepatic abscess after suturing the parietal pleura to the diaphragm, which is usually at the second stage of the operation. An extra serous exploratory operation, of which Ochsner, Nather, DeBakey and Flynn (10) are the chief exponents, obviates the development of empyema or peritonitis, but it requires meticulous anatomical knowledge of the subphrenic space. Moreover, its performance by those of limited experience is a serious ordeal for the patient and fraught with some danger. In the event a discharging sinus is present the tract should be probed with a catheter, or, if unsuccessful, injected with an opaque medium followed by radiographs of both views.

In the literature are splendid articles on the anatomy of the subphrenic space and the operative technic to its approach, with which every surgeon should be familiar. However, the purpose of this paper is to point out that if a discharging sinus is present, it may be possible to catheterize the tract with resultant drainage of the abscess.

The following case is presented as an illustration of the difficulties and delay in diagnosis, with one unsuccessful operation in an effort to dissect out the fistulous tract. Final drainage of the abscess was accomplished by catheterization and resulted in rapid improvement and cure of the patient.

CASE REPORT

The patient, a male, age 38, entered the hospital on November 17, 1932, with a complaint of pain in the right side which had appeared one week previously. At first the pain was diffuse, associated with nausea and vomiting, but later he developed soreness and tenderness in the right lower quadrant. During the preceding two years he had experienced two or three similar but less severe attacks.

The general physical examination was negative. Blood pressure was 140/80; pulse 84, urinalysis physiological; blood Wassermann negative. White blood cell count was 10,200; polymorphonuclears 80%, small mononuclears 4; large mononuclears 2. Weight 170 pounds, height 71 inches. The abdomen was smooth, symmetrical and scaphoid, with no palpable masses or solid organs. There was

persistent tenderness and slight muscle spasm at McBurney's point, but no rebound tenderness. Straight raising of the leg caused only slight discomfort. There was no hernia; the cords and scrotal contents were normal to palpation. With the history and clinical findings a diagnosis of subacute appendicitis was made.

At the surgical operation performed on November 23, 1932, using gas-oxygen-ether, the appendix was retrocecal, about twice its normal size, and the distal two-thirds covered with a fairly recent exudate. An appendectomy was performed with-

FIG. 1. Anterior-posterior view of abdomen showing a pyriform shadow in the right suprahepatic space with catheter running upward in the paracolic groove from the exit of the sinus tract. This film was taken immediately after aspirating the abscess and injecting the cavity with lipiodol.

out inversion of the stump. On the first postoperative night the patient vomited some dark liquid material and complained of feeling weak, but his general condition was good the following day. His convalescence was uneventful until the sixth day, when a swelling appeared in the right parotid region. This was very painful and associated with a high fever. The condition went on to suppuration and about 10 cc. of pus was drained through a small incision. Soon thereafter the left parotid became similarly involved, but this cleared spontaneously. The appendectomy wound healed by first intention but on the fourteenth day a bleb appeared in the scar.

It was probed and about 600 cc. of foul smelling, brownish fluid escaped. Two days later small specks of fecal material were recognized in the drainage. At this time the patient was very septic, ran a total white blood count of 20,000 to 30,000, and around 90 per cent polymorphonuclears, which continued for ten days. There was some pus coming from the fistula independent of the fecal drainage. For three months the patient's condition changed very little, although he ran a slight fever at times and gradually lost weight. However, he was ambulatory and the only pain

FIG. 2. Lateral view of the injected abscess showing a conical shadow with its apex projecting into the cupola of the diaphragm, the inferior surface of which is concave, conforming to the surface of the liver. This shadow is over the posterior-superior surface of the liver near its summit. The catheter is in the lateral gutter about 2.5 cm. from, and paralleling, the vertebrae.

complained of was in the right shoulder. A roentgenological report of the joint was negative. The significance of this pain was not recognized.

The following roentgenological reports were made.

December 2, 1932: The chest was rather short and broad. The height of the diaphragm, both right and left sides, appeared to be within normal limits. There were no shadows in either lung field. Heart and aortic shadows were normal in size and position.

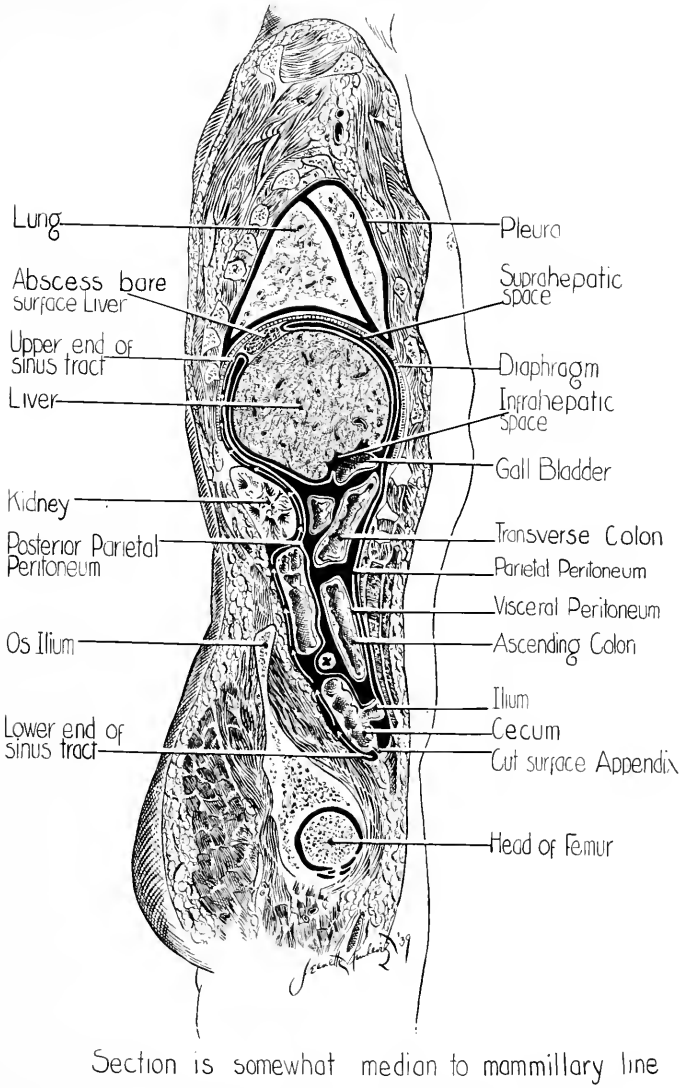

FIG. 3. Diagrammatic sagittal section of the abdomen showing the sinus tract leading from the appendix to the suprahepatic, extraperitoneal abscess and its relation to anatomical structures. The subphrenic region, which includes the suprahepatic space and the infrahepatic space, is depicted.

March 27, 1933: A barium enema was given but none of the barium passed out through the fistula.

April 3, 1933: Roentgenographs were made after injecting the fistula with Beck's paste, but communication with the lumen of the bowel was not demonstrated.

May 4, 1933: The chest showed increased uniform density of the right lung field, with obliteration of the outline of the diaphragm and possibly slight displacement of the heart toward the left. The density of the shadow had the appearance of fluid in the right pleural space. The left lung field was clear.

An examination of the chest at this time revealed diminished expansion over the right base, impaired resonance, and distant breath sounds below the fifth rib and eighth dorsal spine. The chest was punctured and 60 cc. of straw-colored fluid were removed, which were found to be sterile but with 90 per cent lymphocytes. There were no acid-fast organisms. A guinea pig was inoculated with this fluid but subsequently proved negative for tuberculosis. A gram stain of the discharge from the fecal fistula showed many gram negative and gram positive organisms. The fistulous tract was explored on April 20, 1933 and found to run up along the colon, but the operation was discontinued because of the precarious condition of the patient.

On May 8, 1933 a small catheter, about size 14 French, was inserted into the tract. At first the instrument buckled, but after some persistence almost its entire length was passed in and the patient suddenly complained of severe pain in the right shoulder. A syringe was attached to the catheter and about 200 cc. of very thick, dark yellowish pus with a colon odor was aspirated. The patient was immediately taken to the department of roentgenology and the cavity injected with lipiodol, after which he was radiographed. These films showed a suprahepatic pear-shaped shadow about $2\frac{1}{2}$ inches in diameter. The pus was aspirated several times daily and the cavity irrigated with Dakin's solution. A culture of the pus revealed colon bacilli and streptococci. The pus was also examined while it was still warm and failed to show ameba. An improvement in the patient's condition was noticed immediately. After ten days there was no pus. The catheter was removed at the end of three weeks and the patient was discharged on May 22, 1933. A letter received from him in December, 1933 stated that he was working every day on a ranch, was symptom-free, and weighed 180 pounds.

COMMENT

The clinical phenomena in this case presented a difficult diagnostic and therapeutic problem, and were made more confusing by the pleurisy with effusion which obscured the outline of the diaphragm. In retrospect, the significance of the referred pain to the right shoulder was not recognized.

The most striking departure in this case from other reported cases of subphrenic abscess was the presence of a fibrous tract leading from the appendiceal stump to the right suprahepatic, extraperitoneal space, the continuity and location of which was confirmed by radiographs after injection of the cavity with an opaque solution. With the favorable outcome in this instance, one should not be easily dissuaded from trying repeatedly the very simple and safe method of drainage of the abscess by catheterization if a fistulous tract is pres-

ent. Why the abscess did not empty with a patent tract leading to the exterior, perhaps can be explained by the fact that the tract was quite long, approximately ten inches or eleven inches, tortuous, its lumen small and having nonrigid walls which made it easily compressible. Most of the time the patient was either ambulatory or semiambulatory, a position favorable to drainage. Further, with a tract of this length it is likely there were constrictions and, possibly, pseudovalves from the granulation tissue lining. Other factors conducive to its persistence were: (1) negative pressure, (2) respiratory movements of the diaphragm, (3) gravity when the patient was in recumbency, and (4) the closed space which is usually included but did not obtain in this instance.

In reviewing many excellent articles on subphrenic abscess much attention is given to the modes of spreading the infection, which, in brief, are: (a) direct extension, (b) lymph-borne, (c) blood-borne, and (d) along the paracolic groove. Some authorities do not mention the route along the lateral gutter, which was unmistakably the course in the case presented and bears out the contention of Eisendrath (12), Ullman and Levy (13), Nather (14), and Ochsner (15), that extension may take place along the paracolic groove. Therefore, the corollary drawn from this case is that a drain should be placed in the lateral gutter in all suppurative appendices, as suggested by Elkin (8).

The bilateral parotiditis was an entirely independent and unrelated entity, and was strongly suggestive of a coexisting septicemia. Unfortunately, blood cultures were not taken but colon bacilli and streptococci were cultured from the pus obtained from the subphrenic abscess and indicated a mixed infection. The author is unable to explain the 90 per cent lymphocytosis in the aspirated pleural fluid.

The location of an abscess in the subphrenic area depends usually on the site of the primary infection. For instance, an infection of the pelvic organs, in the ileocecal region along the ascending colon, duodenum or perirenal tissues, is prone to localize in either the intraperitoneal or extraperitoneal suprahepatic space. Because of the contour and size, and since the abscess was over the posterior-superior surface of the right lobe of the liver, which corresponds anatomically to the site of the *bare area*, one can be reasonably certain that the abscess was extraperitoneal.

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ONCOLOGICAL CLINIC OF THE UNIVERSITY OF MARYLAND*†

J. MASON HUNDLEY, JR., M.D., F.A.C.S. AND GRANT E. WARD, M.D., F.A.C.S.

BALTIMORE, MD.

During the past quarter of a century or more the average age of man in the civilized world has been increased by fifteen to twenty years. This lengthening of the span of life is made possible by the control of communicable diseases, the reduction of infant mortality and death by tuberculosis, and other striking achievements of scientific medicine. The increase in the average age of man has naturally permitted more people to live until the middle and latter years, where the toll of death is caused by those diseases which appear after middle life. Cardiovascular diseases take the greatest toll. In some localities cancer is second and in others third. This great shift in the completion of human diseases has brought cancer as never before to the attention of the profession and laymen. It is imperative, then, that every medical school, especially every State university, have a cancer clinic—both to care for the cancer sufferers throughout the State and to better prepare its students to properly advise the cancer patients whom they will attend in their future practice.

The cancer clinic at the University of Maryland was established in 1930 with the coöperation of Dr. Arthur M. Shipley, Professor of Surgery, as a subdepartment of the department of surgery. The name "oncology" was chosen for this clinic in order to eliminate the word "cancer", which so easily frightens patients. Also, oncology is a more comprehensive term meaning the science of tumors. The clinic functions as an integral part of the University Medical and Dental Schools and the University Hospital. Patients admitted to the clinic can receive radium, roentgen ray, electrosurgical or surgical treatment, depending upon the demands of the case. The clinical material is being used constantly for teaching medical and dental students.

Function of the oncological clinic. The modern management of cancer is often a complicated problem requiring experienced judgment and training in special forms of therapy. An organized oncological clinic, with a well-trained staff, and connected with a medical or dental

* From the Department of Oncology, School of Medicine, University of Maryland.

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school or hospital, will thus serve the patients better than an otherwise heterogeneous treatment of cancer in medical, surgical or specialty clinics. For this reason it is advantageous to have as many cancer patients as possible sent through the clinic, where they may be served by the various specialists represented on the clinic's staff and the proper treatment selected for each patient. The oncological dispensary is open at 9:30 A. M. on Tuesday for white patients and on Friday for colored patients, in keeping with the entire University dispensary which is divided into three days a week for white and three days a week for colored patients. In special instances where patients come from afar or need to be seen more than once a week, some colored and white patients are seen on both days. The oncological dispensary is so closely related to all other departments of the University and Hospital that free consultation exists between them and all laboratory facilities are available. The department of pathology is generous in its coöperation in making diagnoses from biopsies and tumors removed at operation. Some members of the oncological staff also hold pathological conferences for the study of the material obtained from the patients seen in the oncological department.

During dispensary hours representatives of the departments of surgery, gynecology and roentgenology are present for the examination of patients and planning of treatment. A close relationship exists between the departments of roentgenology and oncology in order to provide careful follow-ups of all patients treated with roentgen rays. No dispensary patients are admitted directly to the department of roentgenology for treatment without first going through the oncological clinic.

Organization and personnel. The oncological clinic was started by its directors, J. Mason Hundley, Jr. and Grant E. Ward, who purchased 100 milligrams of radium at its beginning. The work of the clinic was divided into two main divisions: (1) Hundley took charge of the gynecological oncology, and (2) Ward directed the work in general oncology, which includes all other than gynecological oncology.

One or more representatives of the staff of roentgenologists are present during each dispensary period to give coöperation and advice, and to follow patients jointly with the oncology staff. Several surgeons and gynecologists are in regular attendance to care for the patients and teach the students who are assigned to the department of oncology.

In addition to the professional staff, a secretary is on hand to keep the accurate records which are so indispensable to the proper handling of patients. These are also of great value in teaching. A volunteer

social worker is present daily to check on patients' attendance and to send cards to delinquents. It would be a great asset if money were available to make it possible for the social worker to visit delinquents and patients confined to the house.

Equipment. In addition to the usual diagnostic and therapeutic armamentaria of the hospital, such as medical, laboratory and surgical facilities, three other agents are necessary in any well-rounded clinic devoted to the treatment of tumors: roentgen ray therapy (both high and low voltage), radium element, or radon, in sufficient quantities for satisfactory work, and a good, modern, electrosurgical apparatus, supplying desiccating, coagulating and cutting currents. All of these are available at the University Hospital. The department of roentgenology has already been mentioned. Under Dr. Henry J. Walton's supervision it supplies adequate facilities for both high and low voltage therapy. At the beginning of the clinic, 100 milligrams of radium element were made available. This has been supplemented by a gift of 130 milligrams of the element from the Federation of Women's Clubs of Maryland. In January, 1938 the organization launched a campaign for this purpose and raised about $4,000. The amount was sufficient to purchase 130 milligrams of radium element, together with instruments and equipment for its handling and storage in an iron safe. This includes a lead storage box which gives two inches of lead protection on all sides and safeguards those working around it from unnecessary exposure. There is also a large lead shield that furnishes protection to those who are preparing the radium for application to the patient, and several smaller instruments and platinum filters. In the oncological dispensary is an electrosurgical apparatus and two or three others are available for the operating rooms of the hospital proper.

Museum and teaching equipment. For teaching purposes an oncological museum is important. The one at the University contains photographs, both plain and transparent, wax moulages, charts, etc., which form permanent records typical of the various types of patients treated. These illustrations are of patients before and after treatment, accompanied by photomicrographs of the tumors and, when possible, photographs which emphasize the physical reactions of therapeutic agents on normal and pathological tissue. The principal museum is located on the eighth floor in the main oncological department, but a smaller set of illustrations is being prepared for the dispensary so that students in the dispensary may see photographs and photomicrographs of the type of tumors they are studying in the patients at hand or under allied conditions.

Relation of students to the clinic. Both medical and dental students are given the benefit of the oncological department. The medical students first come in contact with the clinic during their third year. One or two students are sent daily from the surgical group to the clinic, where they take histories and study cases on hand, as well as receive instructions from the staff members. As a rule, each student has about two days in the oncological clinic. In this way every member of the third year class has an opportunity to meet, examine and discuss the methods of treatment of cancer patients. Many follow-up cases are present to show the end results. At the end of the third year a series of five special lectures on the fundamental principles of cancer therapy are given to the entire class. This lecture course dovetails with the previous training in histology, pathology, medicine and surgery. In the department of pathology the student has received preliminary instruction in the radiosensitivity of tumors, which is elaborated upon in the department of oncology. Separate lectures on roentgen ray therapy and gynecological oncology are given by Dr. Walton and Dr. Hundley respectively.

During the fourth year, ward classes are held one afternoon a week, at which various problems in tumor therapy, illustrated by patients, are discussed before small groups of fifteen or sixteen students. Each group meets for five sessions. Throughout the third and fourth years, the course in oncology is supplemental to cancer training in the other departments in the medical school. All in all, each student receives from twelve to fourteen hours of instruction in the department of oncology.

Let it be said here that the teaching of oral oncology to dentists cannot be overemphasized. The dentist examines many more mouths than the physician does. Direct contact with dental students in the last few years has increased the number of oral neoplasms seen in the oncological clinic. These newly trained dentists are "cancer-conscious" and are constantly on the lookout for abnormal lesions in the mouth. As the oncological department developed, Dr. Harold Goldstein of the Dental School recognized the value of its material to his students and began sending small groups to the clinic for instruction. Gradually the demand for organized teaching of oncology to dental students grew and Dr. Robert Bay, in charge of oral surgery, requested that definite lectures be given to the fourth year dental students. The following plan of instruction to the students is now used. Early in the fourth year at least two didactic lectures are given on the general principles of diagnosis and treatment of oral neoplasms. Then each group of this class attends a clinic at which patients with

oral neoplastic diseases are presented. Thus each dental student gets at least three hours' instruction from the oncological staff. A working agreement exists between the department of oncology and the department of oral surgery of the Dental School for the exchange of dispensary patients and this plan enhances the teaching material for both medical and dental students.

Number of patients in the clinic. In addition to a large number of hospital patients coming directly to the hospital, there have been 15,511 dispensary patient visits. There have been 1,771 new cases in the oncological dispensary since its beginning.

YEAR	NEW	OLD	TOTAL PATIENT VISITS
1930–31	94	454	548
1931–32	123	886	1009
1932–33	182	1376	1558
1933–34	220	1851	2071
1934–35	256	2280	2536
1935–36	259	2316	2575
1936–37	242	2007	2249
1937–38	285	1892	2177
Oct. '38 to Feb. 1, '39	110	678	788
	1,771	13,740	15,511

Special meetings and conferences. In view of the seriousness of the cancer problem today, its extensive ramifications into all branches of medicine and the complexities of diagnosis and treatment, it is highly desirable that cancer discussion groups be established. In the spring of 1938 an oncology journal club was organized which meets once a month for the review of current medical literature dealing with all phases of the cancer problem. At first the club met at the homes of the members of the oncological staff. In order that the house staff and other members of the University may receive the benefit of meeting with the club, it has been decided to hold the journal club meetings in the hospital building on the third Wednesday of each month at 8:00 P. M.

The secretary of the club files references to articles reviewed and written reviews of important articles. Reprints of valuable articles are also secured when possible and filed. This literature is available to members of the hospital staff.

A conference on tumors is held in the Gordon Wilson Memorial Hall on the eighth floor of the University Hospital from 12:00 to 1:00 P. M. each Wednesday. At this conference interesting cases having special

problems in diagnosis and/or therapy or rare cases are presented by members of the hospital staff and discussed from all viewpoints. Pathological material is shown and described and literature reviewed by members of the department of pathology. Roentgenograms are presented and roentgen ray therapy outlined by the roentgenologists. Radium and surgical problems are given much attention by those qualified to do so. This conference is open to any and all interested.

Public education. Part of the function of an oncological clinic, especially one in a State institution, is the dissemination of knowledge, so that the laymen may seek medical attention before apparently trivial symptoms become serious. As is well known, frequent prophylactic examination is the *sine qua non* for decreasing the percentage of cancer deaths.

Following the admirable educational program of frequent prophylactic examinations promulgated by the dental profession, it is to be hoped that in the future laymen will be similarly educated to have periodic physical examinations.

Coöperating with the splendid movement of the American Society for the Control of Cancer and its auxiliary, the Womens' Field Army, many educational talks have been given throughout the State by members of the department of oncology. In addition, several radio addresses have been made which have attracted favorable comment. These endeavors will be even more extensive during the current year.

During the month of April, which has been proclaimed Cancer Month by the President of the United States, clinics for physicians and conferences for laymen will be held under the auspices of the State Cancer Commission. The oncological staff is coöperating wholeheartedly with the National and State Committees.

The authors are of the opinion that sane lay education concerning the cancer problem is of vital importance in combating this disease. However, it is most essential that cancer phobia is not aroused in the minds of the apprehensive hypochondriacs.

IMPERFORATE HYMEN WITH RETENTION OF MENSTRUAL CONTENTS AS THE CAUSE OF ACUTE URINARY RETENTION*†

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BALTIMORE, MD.

M. L., a thirteen year old white girl, was admitted to the hospital with acute urinary retention. Two months before admission she developed a moderate difficulty and frequency of urination. Prior to this time she had had no urinary symptoms and was seemingly in good health. These slight symptoms persisted for one month, when suddenly she developed an acute exacerbation. Marked difficulty of voiding, hourly nocturia, day frequency of every two hours, some dysuria and hesitation were experienced. Sometimes two efforts were required to complete the act. There was a sense of fullness and pain, aching in character, in the pelvis. Except for relief at intervals these symptoms continued for an additional month. During this period she was unsuccessfully treated with sedatives and urinary antiseptics. Twenty-four hours before admission she suddenly developed marked hesitancy, dimunition in the size and force of the stream, nocturia and dribbling. The pain and sense of fullness in the lower abdomen increased. For eighteen hours prior to admission the patient was unable to void.

Examination on admission revealed a well-nourished and developed girl lying uncomfortably in bed with the knees flexed. A visible mass filled the lower abdomen from the symphysis to the umbilicus. The mass was fluctuant and on pressure produced a desire to void, thus giving the impression of an overdistended bladder. Inspection of the vulva showed a bulging mass which separated the labia minor. The urinary meatus was normal in appearance and location. The bulging mucous membrane proved to be the hymen, which was imperforate and under great pressure from the above contents.

A catheter was inserted into the bladder without difficulty and 860 cc. of clear urine were withdrawn. The urine gave an acid reaction, had a specific gravity of 1.018, and contained a faint trace of albumin. There were three to four pus cells to a low power field and no casts. Following catheterization, the visible mass in the lower abdomen disappeared and the patient felt greatly relieved.

* From the Department of Gynecology, School of Medicine, University of Maryland.

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Rectal examination revealed a bulging of the posterior vaginal wall. The cervix was distinctly felt as a rim dilated to approximately $1\frac{1}{2}$ cm. in diameter, with a boggy uterus 6 x 8 cm. in size. There were no adnexal masses on either side and this led to the belief

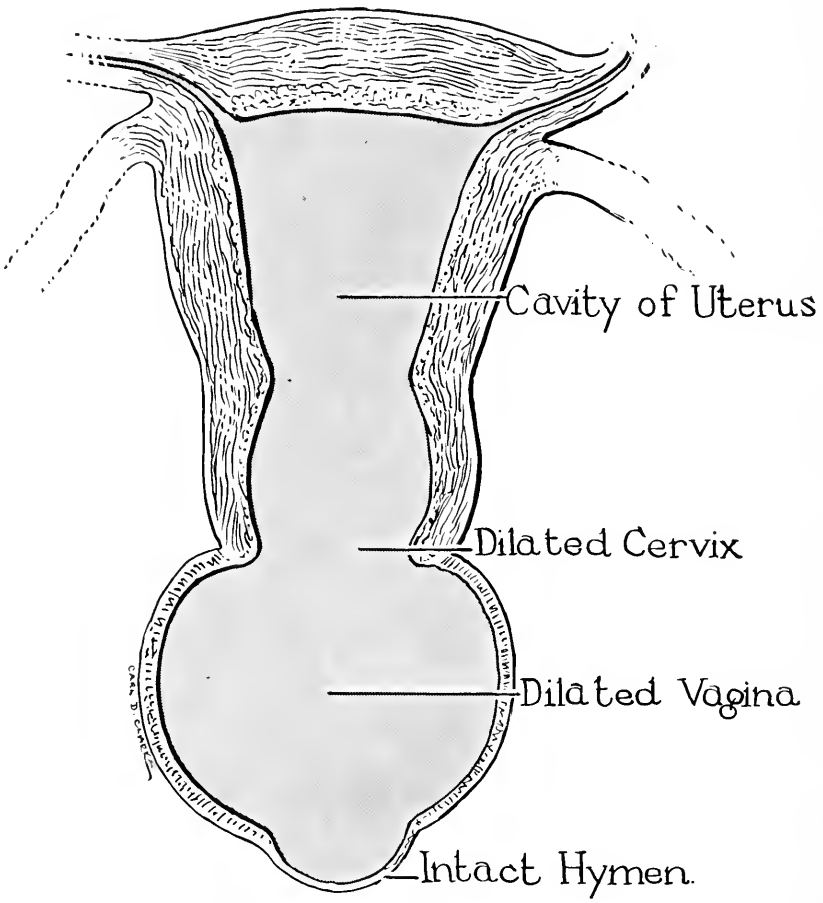

FIG. 1. Schematic drawing of the retained menstrual contents before incision of the hymen.

that the tubes were not distended with blood. A diagnosis of an imperforate hymen with retention of menstrual blood was made.

Treatment. Rectal examination was repeated under gas-ether anesthesia and with complete relaxation of the patient. The absence of tubal masses signified there had been no reflux into the fallopian tubes. It was deemed safe to incise the hymen and permit free drain-

age of the menstrual contents, since a hematosalpinx was not present. An opening was made by a single incision of the scalpel and 720 cc. of dark liquid, degenerated blood contents escaped. In order to avoid infection further instrumentation was not done.

Microscopic examination of the fluid revealed blood, desquamated and degenerated epithelium, granular debris and decomposed blood elements. No bacteria were demonstrated. Culture of the material did not show bacterial growth.

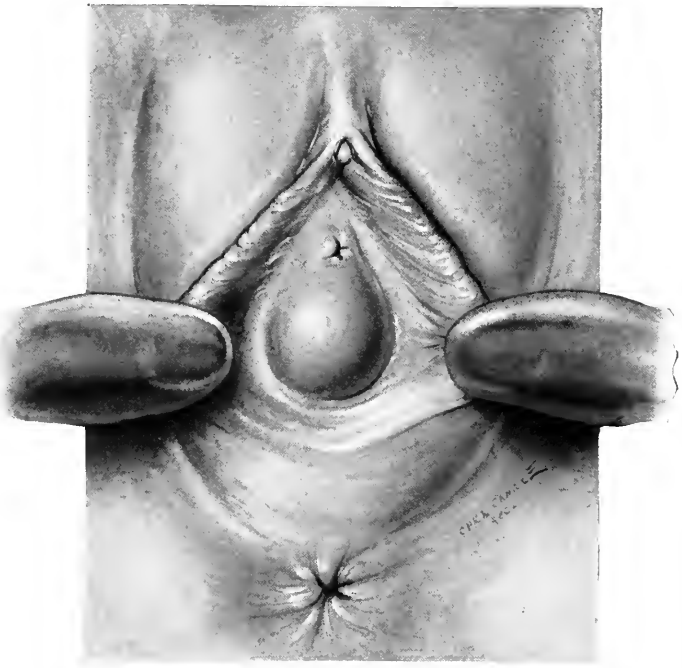

FIG. 2. Drawing showing the bulging hymen caused by retained menstrual material.

Ten days after operation an examination of the patient revealed closure of the incision. This was reopened with a blunt instrument and the edges were cauterized with pure carbolic acid. One week later the wound had again closed and owing to her fear of pain the patient refused to permit its reopening at the clinic. Under general anesthesia the hymen was incised in a stellate manner with the actual cautery and further escape of blood or fluid from the vagina was not observed. Rectal examination at this time showed a virginal cervix which was freely movable and closed. The uterus was normal in

size and position. No masses or induration in the tubal regions were found.

Visits to the clinic one and two months later showed a patent opening in the hymen, and the patient reported two normal menstrual periods of three days' duration.

SUMMARY

1. Urinary symptoms in a girl at the age of puberty, without menstruation, should suggest examination for an intact hymen.

2. Retained menstrual blood may produce enough pressure on the urethra and bladder to cause acute urinary retention.

3. Periodic monthly exacerbations should imply menstrual connections.

4. A careful examination should be made to prove the presence or absence of hematosalpinx, as drainage in the face of this complication would be an actual danger on account of an ascending infection. In most cases this would cause pyosalpinx and pelvic peritonitis. As a rule, removal of the tubes is required, but in most cases it is necessary to remove the uterus.

5. The incision in the hymen should be large and followed by thorough dilatation to prevent re-closure of the edges.

POLLEN COUNTS*†

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This report for the year 1938 represents the second on pollen counts in the Baltimore area covering the main pollen seasons. As stated in the previous article (1), it is intended, if possible, to submit these reports annually in the Bulletin. It will be noted that the present chart runs from March 13, 1938 to September 28, 1938 inclusive, as opposed to the one previously published which encompassed a period beginning March 30, 1937 and ending September 30, 1937.

No attempt will be made here to give the history or describe the clinical value of such counts, as this was covered adequately in last year's report.

Comparison of this series of recordings with those published last year will immediately demonstrate the fact that the amount of air-borne pollen in the atmosphere was much greater than during the previous year. This was in accord with the clinical observations made by men working in this field in 1938 who found that many new cases of hay fever developed and that old cases experienced a bad year.

METHOD

Glass slides covered with methyl green glycerin jelly (2) were exposed under a small metal shelter (3) for a period of twenty-four hours. The counts were then made on a Bausch and Lomb microscope with a 10× ocular, a 16 mm. objective and a tube length of 160 mm. With the above adjustments the diameter of the microscope field was 1.55 mm. (4). Therefore, to cover an area of approximately 1 sq. cm. a distance of 64.50 mm. was measured on the slide. ($1.55 \times 64.50 = 99.975$ sq. mm.)

The above figures thus represent the amount of pollen found on 1 sq. cm. of the glass microscope slide as opposed to an area of 1.78 sq. cm. which was the unit in the previous report (1). This must be remembered in comparing the two curves as the figures for 1937 represent the amount of pollen found in an area seventy-five per cent greater than the unit area used in 1938. Thus, a given count in 1938

*From the Allergy Clinic, Department of Medicine, School of Medicine, University of Maryland.

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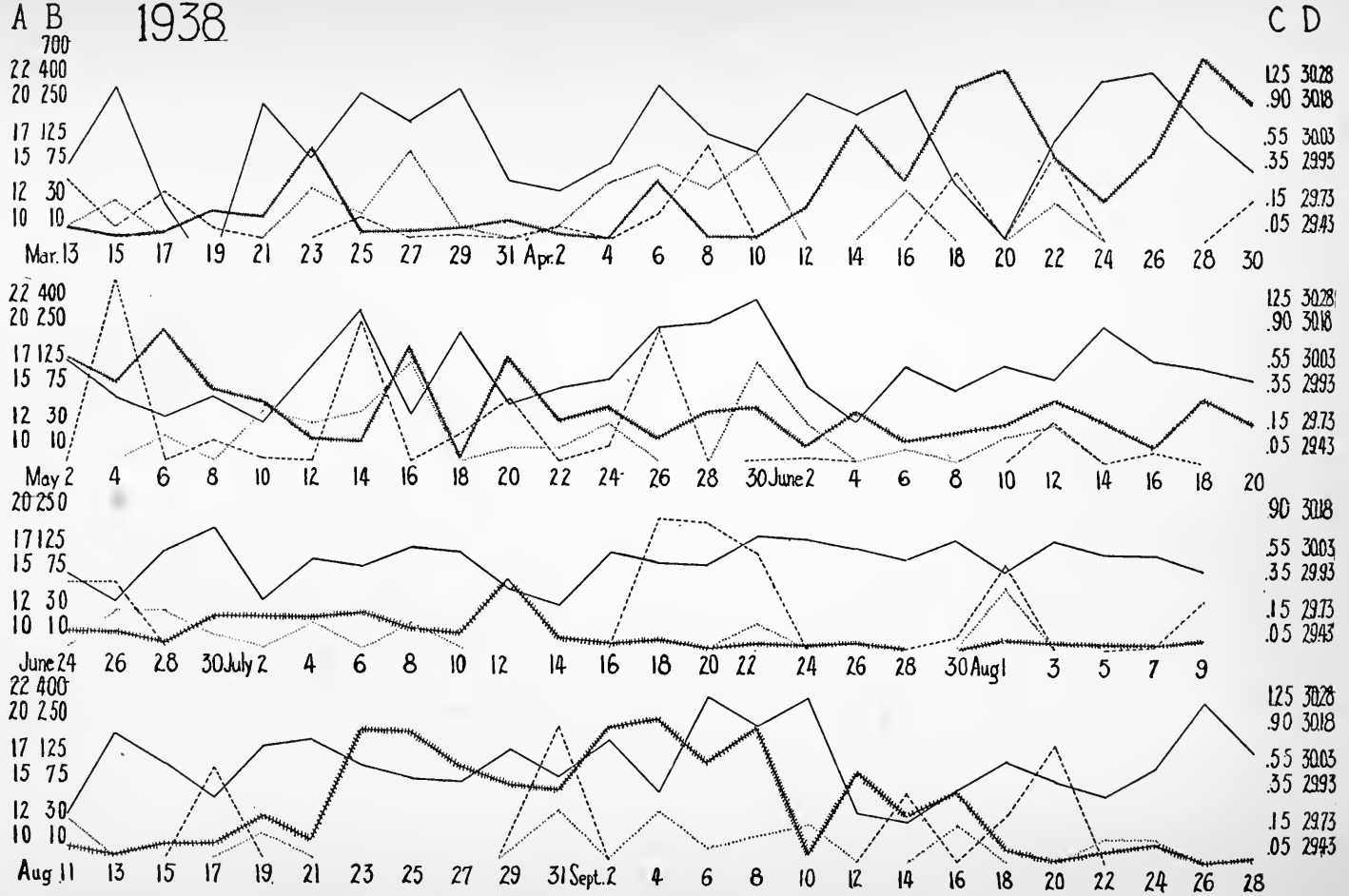
A B
1938
C D
700
22 400
20 250
17 125
15 75
12 30
10 10
1.25 30.28
.90 30.18
.55 30.03
.35 29.93
.15 29.73
.05 29.43
Mar. 13 15 17 19 21 23 25 27 29 31 Apr. 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
May 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 June 2 4 6 8 10 12 14 16 18 20
June 24 26 28 30 July 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 Aug 1 3 5 7 9
Aug 11 13 15 17 19 21 23 25 27 29 31 Sept. 2 4 6 8 10 12 14 16 18 20 22 24 26 28
A ····· Wind Velocity
B ———— Pollen
August 11-Sept. 28 Ragweed Only
C ------- Precipitation
D ——— Barometric Pressure

would be three-fourths greater than the same figure obtained by using the 1937 counting area, if proper adjustments allowing for this discrepancy are made.

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AS IT WAS IN THE BEGINNING

A History of the University Hospital*

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> "I shall be content if those shall pronounce my history useful who desire to give of events as they did really happen, and as they are very likely, in accordance with human nature, to repeat themselves at some future time, if not exactly the same, yet very similar."

Thus has Thucydides provided me with a satisfactory introduction. If I wished to be more facetious, I might quote from Schlegel and say, "The historian is a prophet looking backwards."

I would take you back for awhile—backstage as it were, to see how the stage was set and how scenery was made, so that you may feel to be a part of the drama that I wish to present. I wish also to have you exult in the achievements of my characters, to struggle with them, to worry with them—but finally to succeed with them, so that we may all value more and more the great heritage which we enjoy today as a result of their sagacity, indomitable courage and determination.

Baltimore had only recently become a city. Fells Point, Old Town and Jones Town had combined their efforts and after much pleading a law was passed on the last day of the year 1796 constituting the town a city and incorporating the inhabitants in the name of the Mayor and City Council of Baltimore. According to the census taken three years after the incorporation, the population was a little more than 26,000. James Calhoun was elected Mayor early in 1797 and an election filled the offices in the various wards in the first and second branches of the newly constituted city.

The social life was that of a small provincial town. A great deal of activity centered about the Fountain Inn, which was situated about where the Southern Hotel is today. Here were marked the quarters occupied by Washington and also by Lafayette, and here was segregated the furniture used by both these gentlemen, and, of course, this provided an attraction for the inspection of reverent visitors.

Market Street was the fashionable quarter and ran out from the crowded business section far into the green fields and orchards of

* Address before the Cordell Historical Society of the University of Maryland, January 26, 1939.

what was then the country. One of these green fields will interest us later on in our study.

A plan of the City of Baltimore of 1801 shows us Market Street running through the heart of the town to the west. One notices that the streets below Market Street end at Union Street and this seems to mark the west and southwest limits of activity, as beyond this we find green stretches of undivided properties which were the neighboring farm lands, green fields and orchards. Thus do we have German Street, Cider Alley, Lombard Street, Whiskey Alley, Pratt Street and Bottle Alley ending at the aforementioned Union Street. Much of this land to the west bore interesting names. We had Ridgely's Delight, Welsh's Adventure and, up in the north, Spicer's Inheritance. Chatsworth's was the large stretch of property through which Reisterstown Pike ran, known to us today as Pennsylvania Avenue. Somewhere near the corner of Union Street and Pennsylvania Avenue was Pascault's. Further south was Raborg's and below Market Street (which is our present Baltimore Street) was Robinson's, the site in which we are interested at this time. Robinson's house was on the south side of Baltimore Street and just beyond was a very important tollgate which assessed the traffic going and coming through this important western portal.

It is of interest to note that there was a small stream which seems to have arisen somewhere about Hamilton Terrace. This ran down through the properties across Pennsylvania Avenue and was known as Chatsworth's Run. The stream wound its way down by the Robinson house, continued south over Robinson's property and on to the waterfront. It is not difficult for me to imagine that this water source has been and is playing a prominent part in the underground water of this area, and caused us considerable difficulty during the erection of the present new hospital, where it was discovered bubbling up through the diggings at the time of the excavation.

Baltimore was really the meeting place of the several roads that came in from the various sections of the country and the sailing ships with their cargoes plying back and forth to the foreign places of the world.

One can picture Union Street late on a rainy night or, perhaps, in the early morning, with a salt tang or a smell of oakum in the air—the carpenter, cook and bosun's mate, sea bag in one arm and a shipmate on the other—sailing down Union Street bound for the Pratt Street wharf on a course south, a little east and west. A last ration will be taken aboard at the "Three Loggerheads" on Frederick Street near the docks before making ship. In an hour or two they will join

in a capstan chanty or unfurl a topsail to catch a stray breeze on an ebb tide, bound for Rio.

According to Hall, "The status of the medical profession in Maryland is best illustrated by the fact that of the members of the Medical and Chirurgical Faculty in Maryland at this time numbering 241 names, but 43 or 17 per cent had any medical degree, and of these, 37 had the degree of Doctor of Medicine, and 6 that of the Bachelor of Medicine."

It is evident that the quarantine laws were rigid and reasonably effective. The following is a copy of a plea presented to the Mayor asking for reconsideration.

August 7, 1801

To James Calhoun, Esquire
Mayor of the City of Baltimore

The Petition of Daniel Sidenstricker, Gabriel and Christian Hertick to wit—

That your petitioners, together with Wm. McFarran, on Saturday last the first inst., were in a boat in pursuit of one Samuel Conway, who is in debt to your petitioner (Sidenstricker) $19, expecting to find Conway on board a brig, then ready to sail to France; that in pursuit of this object we went below the fort where several vessels were laying; that not seeing the brig, we bore what we thought was innocent amusement and rowed our boat by several of the vessels laying below the fort to look them over and to read the names on their sterns—that while we were thus employed at some distance, we believe not more than thirty yeards from one of the vessels, a gentleman hailed us from the cabin window of the vessel and asked where we came from. We replied, "From Baltimore." He then ordered us to come alongside the vessel, which we did not do. He then told us if we did not, he would fire on us. We replied that we were going about our business and he might fire. We, however, thought it best to stop. He sent his boat and man and took us alongside of the vessel. When there, he ordered us on board the vessel, but we refused to go. He said he would teach us better in future than to go to vessel that had just come in, as we did not know but there might be sick people on board. We replied that it was worse to order us on board than to let us be as we were. He then sent us to the fort and after taking our names, we were dismissed. In the above proceedings we declare that we did not know we were doing anything amiss and that we had no intention whatever of having any communication with any vessel or any persons on board them. Believing we were acting innocently, considerable rough and perhaps irritating, if not insulting language was given to the gentleman who hailed and ordered us to the fort as above stated. That we have been arrested by the sheriff for the above conduct and to our great astonishment are told we have incurred a fine of $200 each for which fines your petitioners, Gabriel and Christian have given bail, and your petitioner, Daniel, is now confined in jail.

We beg leave further to state that we are informed that altho there is no satisfactory authority to release these fines, yet it rests in your discretion to order and stop prosecutors for them which you have been pleased in some instances to do.

We, therefore, beg leave to pray that such interference in our favor may take

place, and to declare and offer to your consideration as inducements thereto. That we in the above conduct had not the remotest idea of doing wrong—that being illiterate we have not been in the habit of reading the laws of the city published in the paper, or otherwise. That we did not know of any quarantine law whatever until since the above transaction, and we declare we had not even heard of there being sick. That we had not any intention of going on board any vessel or of having anything to say to any individual whatever on board any vessel then laying below the fort. That we did not know the gentleman who hailed us, nor did we know he was an officer of any kind until since the above conduct. That altho we move in an inferior grade of society, we are not insensible of the propriety of vigilantly guarding, by every possible means, the health of the community in which we live, and we are free to declare that, if no pecuniary penalty was attached to the violation of such measures, we should and do feel sufficient restrants from our duty to society and ourselves, to deter from it, and we hope we shall be believed in the declaration that few persons in any class of society would be from inclination less disgusted than ourselves to violate the police of the city and particularly that of such importance as we upon consideration admit and with unpleasant remembrance, feel the guardians of the health of the city to be.

If, therefore, we have thus become unintentional offenders and upon the clemency and discretion of the chief magistrate of the city to relieve us from the seve refines which we are told we have incurred, and to pay which will sacrifice little property, we beg his interposition to stop the prosecutors against us, in our such manner and upon such terms as his clemency may direct.

Gabriel Hertick
Christian Hertick
Daniel Sidenstricker"

We are unable to report that this prayer was answered satisfactorily.

Even at this time Baltimore had definitely established a medical precedence. The fame of Jenner had spread to the New World. Mr. William Taylor, a resident of Baltimore, received a supply of the new vaccine from his brother in London. A Dr. James Smith impressed the Maryland Legislature with the value of this serum, and was instrumental in bringing about a provision for its distribution throughout the State. This was apparently the first occasion in America of the free distribution of serum by the State authorities.

It is well known that at this period in the history of Baltimore and for a number of years afterward there was a very definite amount of yellow fever which came along with epidemic violence. One does not wonder at this when one realizes that a prominent man, Dr. David M. Reese, published his observations of one of the epidemics. He stated that, "Yellow fever appears to be a disease of our country, although not peculiar to it, and that it comes wherever vegetable matter accumulates, and is acted on by heat and moisture sufficiently to excite putrifaction, with the consequent Marsh Effluvia."

In his footnote he stated, "Marsh Effiuvia is the name appropriated to the cause of intermitting and remitting fevers in whatever it consists. It is composed most probably of gases enlivened during the putrifaction of vegetable matter."

So far I have provided only the simplest setting for our drama. I must now find some characters who shall play upon this stage. As early as the year 1800, a Dr. John B. Davidge, who had been educated in Europe, arranged a series of lectures on the principles and practice of midwifery. Later he added a course in practical surgery and, still later, a course in demonstrative anatomy. This work was carried on at his home, and so successful was it apparently that he was induced to erect a small structure known as Anatomical Hall at his residence, Liberty and Saratoga Streets, which is now the site of the Rennert Hotel. At this time he was joined by his confreres, Dr. James Cocke and Dr. John Shaw, who lectured in anatomy and physiology.[1]

It is evident that the urge to teach and organize a medical school and even a university was definitely present, but the germ that was to bring forth the Maryland University was hardly planted when a serious setback developed.

It is common knowledge among those interested that a group of ignorant and ill-advised neighbors took offense at the close proximity of a dissecting room, overnight organized a mob that demolished the Anatomical Hall and declared war against the whole enterprise. This was a serious disappointment, but men of such ability and high purpose were not to be turned aside by any such opposition. Things quieted down by 1807 and again their energies were directed toward teaching medicine.

A petition was presented to the General Assembly which fortunately was answered favorably, and a charter was granted authorizing the organization of a college to be named "The College of Medicine of Maryland". The Medical and Chirurgical Faculty of Maryland, which then had been constituted only a few years, was named the patron of the college. The President of this Faculty was to be the Chancellor, ex officio. The beginning of the college was obviously humble, as the Faculty consisted of four professors and the first session had but seven students attending. Such an organization, however, soon attracted those interested in the teaching of medicine. Dr. Elisha DeButts and Dr. Samuel Baker became members of the college. It is evident that considerable difficulty was experienced owing to the lack of suitable facilities to carry on their work. It was

[1] Cordell, p. 5.

necessary, therefore, to raise funds and to erect a suitable building. Even with their humility, it was decided that the building to be erected should be a worthy structure, and one to do honor to their calling as well as provide the necessary facilities. They again appealed to the Legislature for the necessary authority to raise funds by means of a lottery.

The first Act authorizing the lottery was passed in January, 1808. It named Colonel John Eager Howard, James Calhoun, James McHenry, Charles Ridgely of Hampton, William Gwynn, John Comegys, Charles Warfield, John Crawford, Solomon Birckhead and John B. Davidge as commissioners. A program for raising the necessary funds was arranged and a limit of $40,000 was established.

The purchase of the lot on the corner of Lombard and Greene Streets is well known, also that Mr. R. Cary Long, an eminent architect of the day, was entrusted with the work, and Messrs. Towson and Mosher were the contractors. The purchase price of the property was $10,000. There was no security demanded, and there was no limitation as to the time of payment. Colonel Howard contributed $1,000 of the purchase money and the balance, with interest, was subsequently paid in full.[2]

The Weekly Register of October 17, 1812 states, in an article concerning the College of Medicine, "Having been appointed a Committee to prepare a statement with regard to the condition and prospects of this institution, to the progress of the building for the accommodation of the class, to the courses of lectures to be delivered here next winter, etc. We proceed to state, that from the number of students who attended our college last winter, under temporary inconveniences with which we then had to contend, but which will have been entirely obviated by the commencement of our next course, from the conspicuous merit of our graduates last spring, from the zealous support of which we have been assured by physicians in various directions, from our central situation, we calculate on having a very respectable class next winter. We are, moreover, enabled to state with confidence that the building for the accommodation of the professors and students, which is already in great forwardness, will be prepared for the reception of the class by the first of November, and that the lecturing rooms will be convenient, comfortable and capable of containing from six to eight hundred persons, and that there are apartments, in the same building, calculated to favor the cultivation of practical anatomy, by students." Then follows a list of the Faculty.

[2] Cordell, pp. 21 and 22.

This statement was signed by Dr. James Cocke, Secretary, Baltimore, 24th August, 1812.

It is evident, of course, that the success of the entire enterprise depended very materially on the support from the lotteries. It would seem that at times even this support was anticipated and involved before earned. Here is an acknowledgement of indebtedness of May 24, 1816 in which the anticipated earnings of a lottery are offered as a guarantee.

Baltimore, May 24, 1816

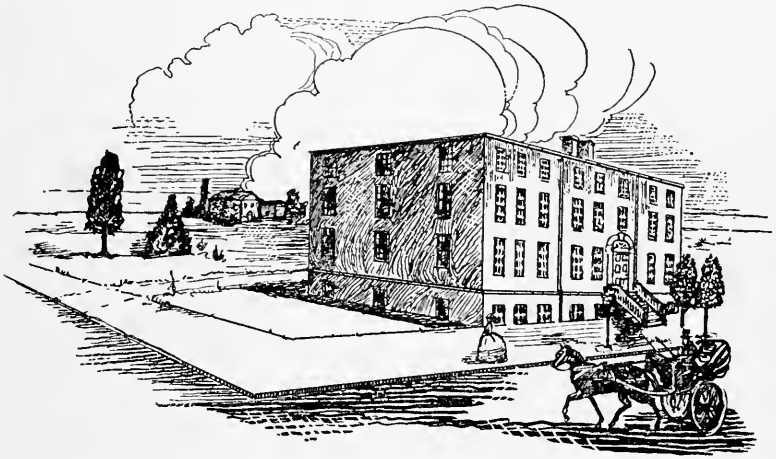
We, the undersigned, members of the Faculty of Physick, in the University of Maryland, being entitled by an Act of the Legislature of the State of Maryland, to all the proceeds arising from schemes of Lotteries drawn in confirmity with the requisition of said Law, until the net sum of $36,000 be received by them, and having disposed of one scheme of said Lottery privilege for the sum of $12,500, propose to draw or sell another scheme some time in the year 1817, and being indebted to the City Bank of Baltimore at this time in the sum of —— for which the said bank holds the note of certain members of said Faculty, and being likewise indebted to Robert Cary Long in the sum of $4250.67 . . . and being willing to give every security for the payment of said sums of money in the power of said Faculty, do hereby pledge to the President of Directors of the City Bank of Baltimore, and to Mr. Robert Long such sum or sums of money as may arise from the disposition of the said lottery scheme, contemplated to be drawn or sold at the time aforesaid, in full payment of the principal and interest which may then be due and owing to the said bank and said Robert Long.

In witness whereof we have set our hands and seals respectively on the day of year first above written.

J. B. Davidge
Nathaniel Potter
Elisha DeButts
Samuel Baker
William Gibson, Jr.
Richard W. Hall
Maxwell McDowell

At the Sessions of 1816 the limits of the City were extended by an Act entitled "An Act to enlarge the bounds of Baltimore City". *Griffith's Annals* state that, "In order to prevent future inconvenience from irregular locations and the expense which might arise from changes necessary in streets, etc., thereafter, Commissioners were authorized by an Act of 1816 to carry out this extension program." It was at this time that Lombard Street was extended to the west. The expansion of the City, which had hitherto revolved around its trading center—the harbor—and tended toward the south and east, now radiated toward its newly-opened turnpikes to the north and west.

Baltimore's history is truly reflected in the names of its thoroughfares. The Lord's Proprietary gave us Baltimore, Calvert and Charles. The early British loyalty left us York, King George, Queen, Caroline and Hanover. England's marine influence left us Cheapside, Leadenhall, Wopping and Lombard. Our own Revolutionary period, with its triumphs and heroes, gave us Liberty, Lexington, Saratoga, Eutaw, Cowpen, Howard, Lee, Lafayette, Washington, Jefferson, Paca, Chase, Franklin and Greene, the latter street being named after Nathaniel Greene, one of Washington's ablest generals. We have now established ourselves at the corner of Greene and Lombard Streets, or at least we have reasonably established this corner, if not ourselves.



The first Baltimore Infirmary. Built in 1823 on a lot 75 ft. wide and 174 ft. deep. This lot was the middle of three such lots, all eventually made use of for additions to the Infirmary.

The need of further facilities to carry on the work of the Faculty was sorely felt. Steiner says, in speaking of the new infirmary, "Its facility of access, being separated from the college building by only the width of the street, and its absolute control by the Faculty, at once gave the institution advantages possessed by no other school in that day." What could be simpler than to make use of the new site across the street? Consequently, a site on the southwest corner was leased. Cordell says, "The infirmary lot extended from a point 78 feet west of the corner of Greene, ran west 75 feet and south 174 feet to Whiskey Alley." This was the middle lot and left a corner lot 78 feet wide on Lombard Street and 174 feet on Greene Street. The middle, or infirmary lot, was leased from John S. Skinner to

John B. Davidge, Elisha DeButts, Richard W. Hall, Nathaniel Potter, Granville Sharp Pattison, Samuel Baker and Maxwell McDowell. The corner lot was leased to Solomon Etting. It comprised eight lots, seven of them 21 feet wide and one 22 feet, 6 inches wide on Greene Street, running back 78 feet to the infirmary lot. These lots were finally purchased by the Trustees of the University of Maryland in July, 1833. This was made possible by the Gray legacy. It was, therefore, owned by the Regents of the University in fee simple and could not be diverted to any other purpose.

Lucas, in his *Sketch of Early Baltimore*, states: "Attached to the Medical School is the Baltimore Infirmary, which was established with a view of affording to the students an opportunity of witnessing the practice of their future profession and attending clinical lectures. There is a large and convenient building to the west of the college which is open every day for the reception of the sick, and excepting Sundays, for visitors. Three physicians and four surgeons attend to the patients of the house, who are nursed in the most tender and watchful manner by Sisters of Charity, who devote themselves to the task with piety the most devoted, and with a success fully commensurate to it. The expense for each patient is $3.00 per week which includes board, professional attendance and nursing. It is under the immediate control of a Committee of three gentlemen."

All records of the hospital, all advertisements and articles stress very strongly the fact that the infirmary was under the immediate control of the professors of the college. They offer this as one of their strong points and lay great emphasis on it at every opportunity. Steiner says, "There are four wards, one of which is reserved for eye cases. There are two resident physicians."

It seems almost impossible now to determine the exact shape of the building. It was a rectangular affair with a small addition in the rear. "The operating theatre was in the rear, but attached to the main building. It was surrounded by elevated seats capable of accommodating several hundred students."[3] The building was erected by John Sinclair at a cost of $11,589. The furniture and equipment cost $2,520, so that the total cost was $14,109.[4] The money was raised mostly by the professors from their own funds and a private loan from the bank. It was their own building, private, and not in any sense corporate.

Apparently there was quite a series of steps into the main entrance which led into a small hallway. On the right-hand side was the office. At the rear portion of the hallway was a staircase leading up to the

[3] Cordell.

[4] MS records of University.

second floor. The private apartments were on the second floor. Later, when difficulties arose, the Trustees did not hesitate to take the building away from these professors and, in fact, acted in an extremely commandeering manner.

As is well known, the care of the patients had been entrusted to the Sisters of Charity of Emmitsburg, Maryland. We have a letter from Father DuBois of Mount St. Mary's dated May 16, 1822, to a Mrs. M. Patterson, care of Richard Caton, Esquire, which contains the following:

To: Mrs. M. Patterson
Care of Richard Caton, Esquire
Baltimore, Md.

Mount St. Mary's, May 16, 1822

I communicated to the Council of our Sisters the letter with which you honored me on the 2nd inst. I can hardly express the joy they felt at the opening which your charity offers to their zeal. It is truly now that they feel they are true Sisters of Charity. They accept most willingly the offer which Dr. Patterson makes them of taking the management of his infirmary. He may depend upon their exertions, their economy, their human attentions to the sick, their cleanliness in every department of the house, but on his part, he must put an unlimited confidence in their management. He alone must have control over them. They must be at liberty to follow the rules of their institution which so far from interfering with their duties as nurses of the sick, will enable them to fulfill them with greater facility as this is the first trial of the kind which the Sisters have. Mr. Patterson must not expect the Sisters will do it with the perfection which experience only can obtain, but time will form them gradually. The limited number of the Sisters which prudence forbade us to extend beyond our means, will also at first confine our choice very much, particularly as we have already three establishments in New York, two in Philadelphia, besides the mother house and five Sisters at the head of every department here and prudence does not permit us to turn out young Sisters, until sufficiently tried and instructed. Hence, changes must be expected to take place pretty often until suitable persons perfectly adapted to the office are appointed. We must act as masons who try many stones to the wall before they are satisfied with the work. People who have no idea of our difficulties think we are inconstant because they know not our motive, but they will see at last that our object was the advantage of the establishments entrusted to our care, as rules must be made for our Sisters adapted to the plan formed by Dr. Patterson for his infirmary. I would consider this a particular favor if he would give me a sketch of it. Is it confined to men, or are both sexes to be admitted to it in different departments? What conditions are to be required for admittance if partly, or exclusively intended for men. It is evident there must be servant men to help the Sisters in those services which modesty does not permit them to render to them. Those men should not only be under the command of the Sisters but at their choice—otherwise they will not pay to them the respect and obedience necessary for the good order. Such men are not easy to find in the country, or if ever so good will soon be spoiled in the city. If God spares me, I intend to form a society or rather a secondary branch of our society, composed of men of the ———— society, who will devote themselves for life to the equally meritorious, though

less conspicuous service of that kind, and upon whose moral deportment and religious obedience I can depend. In Europe, we could get faithful, honest, humble servants. In this country, scarcely any white men and very few of the blacks could be depended on.

"It will be also necessary, according to the nature of Mr. Patterson's institution, to establish certain rules in the beginning which will secure for the Sisters from the patients admitted there that respect, that modest deportment in language and behavior which in Catholic countries is never departed from, but which might easily be forgotten here where they know nothing of the dignity and purity of those religious women who with so much charity stoop to the meanest offices of servants.

"I need not add with what pleasure, of course, the Sisters will fulfill the honorable function of mothers, or rather as they call themselves, servants of the poor which your zeal and charity offers them. You may proceed in the business as soon as you please, and you will find them ready to obey your call, too happy to fulfill one of their greatest obligations, and to share in the blessings which your charity will draw.

I will not say what I felt on receiving your letter. My tears flowed abundantly. God only can reward you. Our dear Emily has long since imposed upon me the sweet task of praying daily for you and your worthy family. I do it in confidence at the altar because there I am nothing. Jesus is all but few condescendingly. Will not the adorable victim listen now to the supplications of so many poor to whose temporal and spiritual welfare you are ready to provide? Will you have the goodness to honor me from time to time of the success of your charitable undertaking that we may prepare those Sisters who are to coöperate with you?

Most respectfully, I remain, dear Madam, your humble and devoted servant,

John Du Bois

We also have a copy of the original letter sent by Dr. Granville Sharp Pattison to the Mother Superior at Emmitsburg in which he states that the hospital needed the services of nursing Sisters, and asking that Sisters be sent down to take on nursing duties. This document is dated October 11, 1823.

Baltimore, October 11, 1823

My dear Sister,

As our Infirmary will be completed and ready for the reception of patients by the 20th of this month, we should wish you to send down the Sisters of Charity on or before that time. I am happy to be able to state that by paying the lady, who was engaged as matron, for her days, we will be able to place the whole direction of the institution under the management of the Sisters.

You stated to me when I had the pleasure of seeing you in Baltimore that you knew of a man who would be qualified to act as a porter. The management has made no appointment and will be ready to hire the person you recommend.

If it meets your approbation, I could recommend that the Sister who has to fill the situation of director of the institution, should come down to Baltimore immediately on the receipt of this letter. She could live in the Orphilene School until the Infirmary is prepared for the reception of herself and sisters. Our object in wishing to have her immediately is to advise with her as to the

arrangement of your routine, etc. and likewise to decide what number of Sisters would be required to perform the duties of the establishment.

I shall expect to have your answer by return post.

I am, my dear Sister,

Your obedient servant,
Granville Sharp Pattison

It is interesting to note that Sister Joanna Smith of this Order was sent down as Sister Superior, and Sisters Ann, Adelle, Rebecca and Barbary were the first to report for duty. The Sisters of this Order continued a steady service from November, 1823 until 1876.

We have a copy of the original articles of agreement in which the various understandings between the doctors and the Sisters were laid down.

Articles of Agreement Entered into, by and between the Managers of the Infirmary in Baltimore and the underwritten Superior General of the Ladies incorporated under the name of Sisters of Charity of St. Joseph's, Witnesseth:

1st—That the conditions under which it is understood that Said Sisters of Charity are sent to and admitted at the Said Infirmary are that they will continue under the obedience of their Superior General and of their Central government near Emmitsburg, that they will be fully at liberty to follow their rules which so far from interfering with their duties as nurses, will afford them new means of fulfilling them with more fidelity.

2nd—As for the management of the temporalities relating to the Infirmary, the Said Sisters will be altogether under the authority and control of the managers of Said Institution and of the physicians who attend it, to whom they will pay implicit obedience for the same objects so that they will be ready to interrupt their religious exercises, anticipate or put off the time thereof or even omit them altogether if necessary—that being their main and first obligation.

3rd—The Said Sisters shall have alone the care and management of the interior concerns and labors of the Said Infirmary without having any woman or girl associated with or employed under them—being ready and willing to fulfill the most menial or disgusting offices for the sake of Him who did not disdain to annihilate himself for us poor sinners; so that the services of the Infirmary may be performed with more propriety, regularity and union, but they will have under them as many servant men, or hired men as the service of the Infirmary may require, appointed by themselves and whom they will be at liberty to dismiss if they think proper—"the object of those men is to render to the Infirmary such services as cannot be expected from women, such as carrying coals, wood, or water to and through the wards, when in large quantity, cutting wood when necessary, carrying heavy burdens, removing the sick men from one place to another, or rendering them services repugnant to female delicacies or propriety, acting as porter, bringing loads of provisions from market, carrying messages for necessary and urgent business, and whereas experience has proved that the constitution of most women in this country is frequently injured by much washing, the Sisters will be at liberty to hire as many colored women by the day, every week as will be necessary to wash the linen of the house under one Sister appointed for that department, as more economical, than if the linen was put out to be washed—the linen and clothes of the medical students are excepted, with which, as requiring too much loss of time the Sisters will not meddle."

4th—The Sisters shall be boarded at the said Infirmary according to the Simplicity of their rule and furnished with all necessary medicines in case of sickness, as for their clothing which shall be provided for by the Mother house, the Managers will pay twenty-one dollars every six months for each and every one of the Sisters employed in the Infirmary and the said Sisters will never be required to change the stuff—the color or the form of clothes which are worn at the Mother house.

5th—The Sisters shall not be accountable for their Services, management and government of the house, but to the Managers or to a Committee appointed by them, as they could not do the good which is expected from them, unless they are supported by the Managers in their intercourse with the officers, agents or Servants of the Institution.

6th—If the Sisters should become infirm or sick, in consequence of the Services they should render to the house, they will not be sent away, unless recalled home by the aforesaid Superior General, but they will be maintained and kept in the Said Infirmary with their other Sisters, nursed and furnished with the necessary medicine, as members of the house: and to supply their place, the Managers will admit other Sisters who will be sent by said Superior; should any of the said Sisters happen to die at Said Infirmary, their burial expenses will be paid by the Managers at whatever place the Head Sister may request according to the Simplicity of their rule; should any of their Sisters or Candidates pass through Baltimore on their way from or to New York, Philadelphia or Emmitsburg, they will be permitted to lodge one night or two with their Sisters at the Infirmary to save them the inconvenience of lodging in private houses in town.

7th—The Head Sister shall neither admit, nor disrupt any sick persons without an order of the said Managers or of one appointed by them. She will keep a Register wherein she will set down the day of admission of any of the sick, of his going away or of his death—stating his name, surname, age, profession, religion, place of nativity and color: when any of them will come to the Infirmary an Inventory shall be made of the clothing, furniture, money, etc., he may bring with him, that it may be returned to him when he goes away, or in case of death returned to his relations, or delivered to the Managers, as she shall be directed.

8th—Whereas many of the sick brought to the Infirmary, particularly the blacks, may have ragged, dirty clothes, even with vermin, by which the bedclothings, even the very air of the wards might be infected to the great injury of their health, and of that of all the sick, loose dresses and linen shall be provided by the house to dress all of those who will be admitted therein, with which they shall be clothed at the moment of their admittance, after having been previously cleaned and even bathed if necessary and possible, after which their own clothing shall be washed, cleaned and mended to be returned to them when they leave the house, at which time the dresses belonging to the house will be taken from them. From this rule may be exempted those who will bring such clothes of their own as will be equally clean and suitable for their situation.

9th—At least once a year, the Managers will be requested by the Head Sister to make a review of all the furniture belonging to the house to determine upon the addition or reparations which may be necessary.

10th—It will be the duty of the Head Sister to see that all the sick should be equally and faithfully attended and to inform the attending physician of any omission on that score.

11th—The house will be habitually locked up, except at the hour appointed for the clinic classes, at which time, even the porter will require tickets of admission.... The said porter will admit nobody at any time but those whose admission will be authorized by the Board of Trustees, or who will have a ticket of admission from the physician appointed for the week, and that even at certain hours designated by the Board—respecting the visitors of the Sisters, of the young students boarding in the Infirmary and those of the relations or friends of the sick who may wish to see them, rules shall be made by the Board which the porter shall observe carefully, and the Sisters see are observed. In doubtful cases, the porter will submit them to the Head Sister, who will direct for that time, but refer it afterwards to the Board of Managers for her future direction.

12th—After ten at night neither the inmates of the Infirmary, officers, students, hired people or even new patients shall be permitted to go out or to come in the house without a special permission from the attending physician, or any other person appointed by the Board. At ten o'clock, the keys shall be brought to the Head Sister, who will keep them in her room, and will see that no abuse should exist in this respect through the connivance of the porter. Should any case occur in the night which would require the opening of the door, the Sister who sets up, if there is occasion for it, will get the key out of the Sister's room —a bell will be hung in the porter's chamber for the Sister to wake him in this case that he may open the door. Should there be no Sister setting up, the Head Sister shall be called up either by the porter or by any of the students, who should notice that the porter being fast asleep does not hear the rapping at the door.

13th—Should any of the persons employed in or boarded at the Infirmary be detained in the city later than ten o'clock, he will remain among his friends—but should this happen oftentimes, as the service of the house may be materially injured by it, the Head Sister will give information thereof to the Board to determine upon it.

14th—The Head Sister will render a monthly detailed account of the money left in her hands for market or other expenses to the person appointed by the Board to receive it and that amount shall be closed on the 20th of every month at the time and place appointed by the Board, and signed by a member thereof with any observations found necessary for the ensuing month, for the direction of the Sister.

15th—The gross provisions shall be provided for by one of the Managers such as flour, wood, sugar, coffee, tea, salt, meat, or merchants and butchers will be appointed by the Board, who will have to furnish the same on order from the Head Sister, who will herself keep a regular account of what she will receive, and of the respective prices of said provisions should they appear different in quality, quantity or price according to the general currency of the market. It will be the duty of the Said Sister to inform the Board of Managers at their next meeting, or in case of urgent necessity, the person appointed by the Board to represent it in the interval of their meetings.

16th—The aforesaid Superior General of the Said Sisters will have it in his power to recall Said Sisters whenever he will think it expedient for the good order of their society, by sending others in their place at the expense of Said Sisters: as likewise said Manager will have a right to ask for other Sisters in the place of those whom they will not approve of, but in this case that travel-

ling expenses of these, as well as of those who will be sent in their place, will be paid by the Managers of the Infirmary.

17th—The Managers will also pay the travelling expenses of Said Sisters in the following cases:

1—When they are sent for the first time to begin the establishment.

2—When others will be sent to replace those who will happen to die or who having worn their health and constitution in the service of the Infirmary, will unable to bear any longer the hardships, should be recalled home to discharge the Infirmary.

3—In case of the non-execution of said agreement by the aforesaid Managers which should compel said Superior to recall all the Sisters home.

18th—But should the Sisters themselves fail in fulfilling said agreement, they can be sent away at the expense of their community, if the Superiors being informed of it, do not remedy it within a reasonable time.

In confirmation whereof the said parties have hereunto set their hands this ——— day of ——— 1823, viz.—Said Managers through and said Superior General himself in behalf and in the name of the Sisters of Charity of St. Joseph's near Emmitsburg.

They left very little to the imagination and covered each item rather thoroughly. Here also is a copy of the regulations of the Baltimore Infirmary.

REGULATIONS OF THE BALTIMORE INFIRMARY

PATIENTS

1—No patient shall be received without the payment of three dollars in advance and signing a guarantee—except in cases where the signer of the guarantee is known to be responsible. It shall be in the discretion of the student receiving the patient to require more than three dollars, if the case promises to be tedious and the parties are not known. The payment of three dollars a week in advance is to be continued as long as the patient remains in the house.

2—No patient is to leave the house without the permission of the attending physician, surgeon, Sister Superior or Senior Student.

3—The diet of the patients shall be under the exclusive control respectively of the attending physician and surgeon.

4—Any patient who is disorderly or who comes back intoxicated or otherwise violates these rules can be expelled by the Sister Superior or Senior Student.

5—All patients in cases of casual absence are required to be in the house before dark.

6— Smoking is prohibited on the wards.

7—No liquor is permitted to be brought into the house.

By order of the Faculty, the Treasurer is required to report all violations of the annexed rules which come to his knowledge.

REGULATIONS OF THE BALTIMORE INFIRMARY

DUTIES OF STUDENTS

They shall be in attendance at the house at all hours except meal times, and whenever absence may become necessary it is expected that one student shall be present at all times. There shall be no admittance after 9:00 p.m. during the winter or 10:00 p.m. during the summer.

It shall be the duty of the Senior Students to keep the books of the house, to attend all white female patients, to assign the patients respectively to the other students as may seem best, to visit all the patients in the house before retiring and see that they are faithfully attended, to see that a record be kept of all the prescriptions, to collect the dues of the patients in the house and render to the Treasurer a weekly report of such collections and of the number of patients in the house. It shall be the duty of the other students to attend faithfully to such patients as may be assigned to them, to put up all prescriptions of the attending physician and surgeon and do all necessary dressings.

Every student shall subscribe his assent to these rules before entering upon the duties of the house.

The following notice was ordered to be placed on the doors of the student's rooms and to be signed by the Dean.

BY ORDER OF THE FACULTY

No visitors can be admitted to the student's private room on any pretense.

The above action was passed by request of students of the house. On motion of Dr. A—— it was unanimously resolved that the rules heretofore proposed by him in reference to the duties of the officers of the Infirmary be now adopted. They are as follows:

Resolved: That it shall be the duty of the attending physician to have entire charge of all the medical cases and the duty of the attending surgeon to have entire charge of all surgical cases in the house. Each to visit the house daily at some appointed hour.

Resolved: That the Treasurer of the Faculty with the title of Treasurer of Infirmary shall have charge of the books and accounts and of all matters relating to the house except those comprised in the duties of the attending physician and surgeon, viz., the medical and surgical treatment of patients.

Resolved: That it shall be his duty to report to the Faculty all violations of the rules for the students of the house which shall come to his knowledge.

Resolved: That the Treasurer of the Infirmary shall be elected annually hereafter in April of each year on the day fixed for the election of Dean—the election to be by ballot.

The Executive Committee of the Baltimore Infirmary of June, 1823 consisted of three persons, Solomon Etting, William Gwynn and R. B. Magruder. There seems to have been a considerable amount of dissension and difficulty. Apparently, the students resident in the house had been having some trouble with the Sisters and had developed a habit of returning home late, that is, after ten o'clock. It would seem that this trouble developed until a complaint was lodged with Father DuBois. Father DuBois, who has been referred to several times in the above, was a French missionary priest who came to this country about 1798. He was sent out into the mission field and happened to be assigned to Frederick County, with his work centered in the parish of Emmitsburg. Ten years afterward, in 1808, he founded Mount St. Mary's College, which is

an active institution today. In later years his work took him up into New York, where he eventually became Bishop of New York.

Father DuBois, after inquiring into these various complaints, sent the following letter to the Infirmary:

Mt. St. Mary's
January 7, 1824

My Dear Sir

I have been in daily expectation of receiving from you a copy or rather, both copies of our agreement—signed by the Secretary of the Board in behalf of the managers of the Infirmary to be signed by myself and one returned to you. My anxiety on the subject does not proceed as you may be sure want of confidence in you would, but I wish to obviate any mistake that may be committed on both sides and draw a copy of it to be sent to our Sisters in Baltimore for their direction.

I understand that already some difficulty exists respecting the keeping of the key in the Head Sister's room and the hour appointed for the young gentlemen who board in the Infirmary to return, viz., 10 p.m. I was fully aware of the opposition this necessary rule of discipline would meet with on their part—and of many other difficulties which would arise from the admission of young boarders in the Infirmary—but as you gentlemen thought contrary to my opinion that it would be a profit to the Infirmary, and their attendance would be necessary there, though it is not the case in other hospitals, I put off the hour of shutting the doors as late as I could consistent with the other duties though not without some inconvenience for them. Still, it appears that your young gentlemen are not satisfied. I expected it so—had I even protracted it to 11 o'clock to the great annoyance of the whole house, they would not be contented. The clue of the business is a spirit of independence which prevails among our American youth. They have little idea of the momentary slavery which they must submit to in order to become skillful in their profession. They want to unite the pleasures of life with the serious studies of the medical art—and spoil them both. Happy yet if at last, the brightest talents are not swallowed up in the vortex of dissipation. Permit me to discuss with you this important question on which depends in great measure the prosperity of your Infirmary and the continuance of the Sisters there.

I lay aside all the scandals, irregularities which the privilege claimed by the young students of returning to the Infirmary at any hour in the night, might introduce in the institution. I believe you, Mr. Smith, would not abuse of such a privilege but it is a precedent we must establish. Eight young men are to be admitted gradually—once the privilege granted, how shall we recall it, or limit it to one or two who may not abuse it. Can we flatter ourselves that *all* will be equally prudent. If the Head Sister does not keep the key in the room, who will keep it? Will it be the young men themselves? Then every one of them would have a key, as none ought to have a privilege above the others. Will it be left with the porter? But remember that the porter is a kind of servant liable to be bribed, to be imposed upon, to be *terrified* into *compliance* or *convenience* if not by threats at least by every abuse, *mortification* and tricks which youth and vice can invent to disgust a man of his situation. He will go and must be replaced by another, who will be treated in the same manner. The institution will lose the best characters until another will

succeed who more anxious to keep his place, and less scrupulous, will become a ready tool in the hands of those young men in a house like this. I can find hardly one young man out of ten, firm enough and proficient enough to maintain the rule as a prefect or to unravel the schemes of boys and you will not expect to find such a disinterested firmness and consummate prudence in a servant. But secondly, what rest can our poor Sisters have after a long day of hardships—if after they are retired, they must be continually disturbed by the ringing of a bell or rapping at the door until perhaps 2 o'clock in the night. In vain will you say the young men will be warned not to disturb the house with noise. How could the porter be called to the door without noise? Can it be expected also that a laboring man will spend patiently a part of the night without getting asleep and of course, without considerable noise to wake him. What a pull back in all the duties of the house if 10 o'clock is too soon for the gentlemen to come to the Infirmary. How late will be late enough. Will it be 11 o'clock. But their balls and parties will not be broke up so soon, and many will be far from home and must have time to return even after the ball is broken up. Is this practicable in a regular house? But if neither the situation of the Sisters, nor that of the patients are taken into consideration, how will that continual noise at the doors and even reasonably in the house agree with the quietness necessary for the poor sick people, and who will be continually roused out of their first soundest and most refreshing sleep? And where is the inconvenience these young men complain of? Are they not at liberty to stay the whole night with their friends if they wish to attend a party—if it is objected and their presence is necessary at night in the Infirmary. Why would it be more necessary from 12 o'clock at night until daybreak than from dark until 12 o'clock, but they cannot divide the task between them. Now cannot one of the two remain alternately in the Infirmary and the one who stays out inform the one who remains in the Infirmary where he goes that he may send for him if there should be a real case of necessity for it which probably will never occur. But if the number of these young men is raised to eight, how much easier will it not be for them to remedy this inconvenience. I know but one difficulty which arises not from the regulation but from the locality, viz., that by shutting all the doors the access to the necessaries is stopt, but cannot this inconvenience be prevented by enclosing all the backyard by separating from the front by two side partitions with one gate for the admission of wagons, which should be locked at night and even in the day time. This precaution is necessary even now, to prevent those who have no tickets of admission from getting in the house by going around through the back doors; then the back doors may be left unlocked without inconvenience.

It appears to me after all that the idea of the house being injured by the young boarders leaving it in case they will not submit to this regularity is groundless. It appears to me that the $300 board they have to pay will be fully spent if not overrun by their expenses—that their services are by no means *necessary*—that the Sisters can easily be brought to do everything the young men have to do—dressing wounds, bleeding, administering medicines, except in cases where modesty would not permit it and even then if really it was necessary to do it at night, the porter might be employed by them to do that which men alone could do with propriety. In Europe, our Sisters have no young students to do that. It is true that commonly there is either a physician or surgeon who resides in the yard or adjoining it, who may be called in, in a case of necessity, but until that can be done conveniently, one of the porters may be sent to call

the nearest physician belonging to the Board if the case is very urgent, or the physician on duty, if the case is not pressing. Besides why could not the managers allow a gratuitous board to the poorer young man who considers this appointment as the greatest favor—would submit to every regulation—would be contented with the plainest of fare—and instead of dictating laws would be forever grateful for the honor conferred on him. There are such appointments in Europe, and they are counted as the greatest privilege.

Be so good as to communicate the above to Dr. DeButts and the gentlemen of the Board and let me know their determination on the subject. You and they, I am sure, will pardon this intrusion of mine. It is prompted by the deep interest I take in your institution and the respect I entertain for yourself and your respectable partners in the most charitable work.

I have the honor to be, dear sir, your devoted and humble servant,

John DuBois

The Infirmary also shared in the general disagreement between Trustees and Regents. This dissension rose to such a state that the Infirmary was finally taken away from the Regents by the Legislature and operated by a Board of Trustees, notwithstanding the fact that the professors were still carrying on their free work in the institution, and also notwithstanding the fact that the very building had been built with the money of the professors and loans for which they personally were responsible. The Government of the University of Maryland, therefore, was transferred to a new Board of Trustees of which the Governor of the State was President, and twenty-one gentlemen named in the law constituted the Board. This Board was authorized to choose a Vice-President, also appoint and dismiss provosts and professors. The proceeds of a lottery were appropriated to pay for the Infirmary, to purchase chemical apparatus, and also for the support of some of the other faculties.

The professors being finally debarred from the hospital, the Trustees took possession of it and not only refused to pay the professors for it, but even withheld the income derived from it.

Cordell states that, "By the end of the first decade, i.e., 1833, four new wards were added to the hospital and the number of beds was now 90". I am at a complete loss to determine where this addition was made definitely. So far I have described two lots, one on the corner and the Infirmary lot contiguous to it. There remained a third lot in between what was then the end of the old hospital, and what we understand today as the first tenement house next to the old hospital building. It would seem, therefore, that this extension of four wards on the west end of the hospital was made on a part of this third lot. There was a considerable amount of space here which was reserved for future use.

For the first few years the income of the Infirmary was considerably

below the expenses, but about 1830 the budget was being balanced. The Infirmary also received about $300 a year from the Gray legacy and the Government paid $4,000 a year for service to sailors coming in off the ships.

In 1826 one of the leading characters of the Infirmary, Dr. Granville Sharp Pattison, went abroad. He never returned to Baltimore again.

The quarrels and dissensions continued between the professors and the Trustees. It will be understood that these doctors continued contributing their services as attending physicians, free of charge. As the establishment had now been taken over by the State, or by the Trustees appointed by the State, the several professors made out a bill against the Trustees for the amount of money which they had expended in its erection and maintenance. Of course, the Trustees refused to pay any portion of this claim and an appeal was made to the Legislature. Finally, an Act was passed compelling a settlement. A committee was appointed to investigate the situation and after an exhaustive examination extending back to the year 1807, the committee reported in 1830 that $15,474 was due the professors. The general operation of the hospital was subjected to a considerable amount of adverse criticism. It was accused of extravagance and irregularities in its management. The son of the Vice-President of the Board was secretary, and he received a salary of $250 a year. The chairman of the committee received $200 a year. Some time later this same officer was given the title of superintendent and received an annual salary of $400. Later still he became governor, with a salary of $800 a year.

There was considerable complaint as to the supplies of the hospital. Medicines were inferior, food was cheap and improperly prepared, and the professors were compelled to use their own instruments. They could not even obtain a supply of leeches! Much of this discussion took place with members of the student body, and the general situation became greatly aggravated. The Faculty endeavored to have legislative action favor them with seats on the Board of Trustees. This was in the year 1837. As might be expected, such a demand was denied.

The Regents presented an appeal to the Legislature asking the State to direct her agents, the Trustees, to surrender their property to them. The Trustees, of course, were unwilling to abandon the fight. So keenly was this situation felt on all sides that the Trustees actually feared an outrage by the Regents. On July 15, 1839 they passed a resolution authorizing the employment of watchmen and other proper guards for the protection of the buildings and premises.

This was countered by an appeal from the Trustees to the Legislature in which they offered arguments as to why the Trustees should be maintained, and asked not to be compelled to surrender the possession of what was State property and to leave the rights of others thereto protected by the State. The two memorials were referred to a joint committee of both houses. This joint committee brought in a lengthy report reviewing the whole question and recommended the passage of a bill restoring the property to the Regents in accordance with their request.

During these years the Baltimore Infirmary was greatly concerned with the large number of sick sailors arriving in the port. There was frequently a large amount of yellow fever to handle. Sailing ships were continually arriving in the port with a large number of their crew down with fever. The newspapers of this period carried many accounts of such happenings.

It will be borne in mind that several lotteries were held to take care of the University and Infirmary. Many advertisements appeared in the local papers advertising these lotteries and apparently not only did the Baltimore Infirmary share in these, but many of the churches of various denominations were built with such funds. For instance, "Ten days drawing will complete the University Lottery. Prizes of $20,000, $10,000, $5,000, $4,000, $3,000, $2,000 and a number of $1,000 prizes. Whole tickets $10; ½ tickets $5. For sale at Robinson's Old Established Lottery and Exchange Office. Corner St. Paul's Lane and Market St". The history of lotteries at this time provides sufficient material for special treatment of itself.

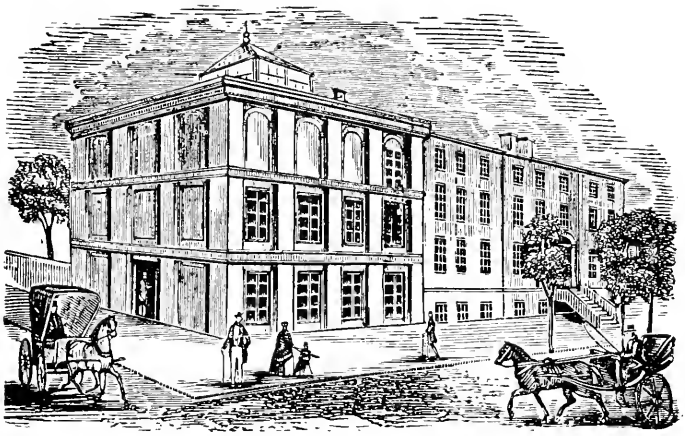
A card or advertisement in the local paper stated, "Cupping and leeching. The gentlemen of the Medical Faculty and others are respectfully informed that particular attention will be paid to all orders for cupping and leeching that may be left at Dr. Love's Drug and Patent Medicine Store, 22 Center Market Space".

Conditions now seem to have settled down to the usual routine. The institution was kept busy and its accommodation was frequently sorely taxed. The personnel of the school had been growing in number and attractiveness.

The board for patients in the hospital varied from $3 to $10 per week, depending on the accommodations. In the calendar for the year 1853–54 one finds the first illustration of the hospital. This shows the new addition added to the corner in 1852. You are all doubtless familiar with the picture of the old Baltimore Infirmary which is found on the back cover of the annual circular. Nowhere have I been able to obtain a picture of the hospital prior to 1853. This

particular circular states that "an addition has recently been erected containing commodious private compartments separated from the more public portions of the house, etc." It is easy to determine the new addition to the hospital. It is of an entirely different type of architecture, with different floor levels and much larger window space. There is also quite a large skylight on top of the roof which was, of course, over the amphitheatre. The entrance to this building is on the Greene Street side.

"About this time, an important addition was made to the Infirmary by which private rooms were provided to meet an urgent need, and the clinical amphitheatre on the corner of Greene and Lombard Streets was erected. The institution now had a capacity of 150 beds



The new addition is here shown, built on the corner lot, 78 ft. front and extending down Greene St. 174 ft. This picture first appeared in the Annual Circular, 1853.

and was the largest hospital in the city. There were 8 resident students and also a resident physician."[5]

A great deal of patronage was lost during the Civil War period, as much of the University support came from the South. This brought about a temporary setback as far as the University was concerned. There is no sign, however, that the hospital suffered any loss. As a matter of fact, it seems apparent that the hospital was extremely busy throughout this time.

One reads in the University circular of 1870 of an extract from the report of the Dean which states, in language definitely vibrant with the anxiety of the times, "The University of Maryland is a southern institution depending for patronage principally on the South—a

[5] Cordell, pp. 130, 133.

section over-shadowed by financial and political strife. Therefore, although the medical classes following the University are large, we cannot expect to attain the numbers, etc." And again, "With the recuperation of the southern states, southern students will again flock to its halls, and Baltimore, the southern metropolis, the mercantile center, will also become the medical center of the southern states".

It was during the year 1866 that the Outpatient Department was practically organized.[6] This was principally the result of the zeal and interest of Dr. W. Chew Van Bibber, Adjunct to the Professor of Practice. He delivered the first clinic on children's diseases. The University circular of 1868 carries a notice of the University Dispensary and states that the clinical field of that institution is very much enlarged.

In 1873 announcements were made that "poor women were attended to in their homes by dispensary physicians". Even at this time a dentist was in attendance in the dispensary and taught students in "drawing teeth."

Again and again one finds evidence of the hospital's accommodations being severely taxed, especially in that part of it which was known as the Marine Hospital. There were numbers of sick sailors brought to the institution for treatment. The Faculty decided to increase the hospital capacity in some way. In 1870 a students' building was erected at the western end of the Infirmary. The funds were to be raised in the best manner possible. The estimated cost was $4300 to $6500. It was felt that the students would not remain very long in this new building, and sure enough, we find in 1874, it was resolved that the Faculty purchase the property adjoining the Infirmary for the use of the resident students. The Infirmary Committee received directions to make arrangements for the conversion of the students' building into an accommodation for patients.

At this time the Infirmary Committee was instructed to erect suitable wooden sheds in the hospital yard to take care of those who could not be accommodated in the hospital. At the next meeting in December the Dean presented a letter advising the Faculty to apply to the Legislature for power to sell the property. It was resolved to apply for funds to erect a new hospital and a committee was appointed for this purpose. Dr. Chew also reported that he had not yet obtained a permit from the City for the erection of the wooden sheds as "the erection of these wooden sheds was hostile to the existing

[6] Cordell, pp. 130, 133.

city ordinance". In the meantime, the Legislature had appropriated $30,000 for the benefit of the Infirmary.

The Building Committee reported in January, 1875 that designs, specifications and estimates were ready for the new addition, and in March the building was started. This brought about the erection of what is known to us today as the Greene Street wing. It was a long, slender, rectangular building, three stories high, with a basement. It was 26 feet wide, according to inside measurement, which to say the least was a considerable span for those days without central

The Greene St. addition was erected in 1875. In 1880 the Lombard St. portion was given a thorough overhauling.

support and without underfloor stiffening. Each ward was supplied with an abundance of high, narrow windows with triple-hung sashes. The heating facilities were primitive and all appointments of the simplest. The addition of the new wing greatly increased the clinical facilities of the University. It was now plain that the hospital had doubled the capacity of any similar institution in Baltimore. There was a new lying-in department, and a department for diseases of children was also established by the transfer of the patients from St. Andrew's Home. The hospital was now handling about 1200 patients a year, and more than 15,000 visits were made to the dispensary.

In 1880[7] the Lombard Street portion of the property was given a thorough overhauling. There were additional private rooms provided, and the department was considerably enlarged to take care of the demand. It is in the circular of 1881 that we first note the change in the illustration of the Baltimore Infirmary. We note the name "University Hospital" was painted across the front of the building, and "Baltimore Infirmary" on the side of the building. There seems to have been an enclosure running along the front of the building on Lombard Street to protect an areaway. This was apparently opened to provide more light in the basement or dispensary.

An alumnus states, "I remember the front door of the old hospital very well. There were two or three sandstone steps from the basement, with iron scrollwork railings. Then heavy wooden, double doors and three or more steps on the level of the main hall which entered a hall back to an archway, opening into the first hall of the nurses' home. The main stairway was on the west side of the hall. There was a hall running east and west through the building to Greene Street and the students' building at the west end. Just inside the front hall doors to the right, was the general reception room. Back of this was Miss Louisa Parsons' office, with the resident physician's rooms beyond that. To the east, or left of main hall, was the doctors' reception room on Lombard Street, where the staff met their patients for consultation. Across the narrow hall, looking out on the court, was the resident physician's office. The narrow hall, from main hall to Greene Street, on Lombard Street side, was Miss Parsons' room and bath, and six or eight rooms for private patients. The second floor, along Lombard Street on both sides of hall were private patients' rooms. At the Greene Street end, up three steps, through swinging doors, were the operating rooms, amphitheatre, dressing rooms, and sterilizing room (such as it was). The women's medical and surgical wards, both white and black, were at the west end of the third floor. There were several semi-private rooms at the east end of that floor, with treatment rooms, and Dr. Howard's special operating room."

It appears there was repeated difficulty with the nursing service in the hospital. One notes constant reference in the minutes of later years to the desirability of a change. The Sisters of Charity finally withdrew from the service in 1879 and several expedients were tried in order to carry on this necessary service. In March, 1880 a committee was appointed to consider the propriety of putting the Infirmary in charge of the Sisters of Mercy. The Committee reported

[7] P. 152, Minutes of Trustees, June 15, 1880.

favorably and the nursing service was carried on by these Sisters until 1889. On December 15, 1889 the Faculty served notice on the Sisters that their contract, under which they managed the hospital, would be annulled.

A training school for nurses was organized under the supervision of Louisa Parsons, a distinguished graduate of St. Thomas' Hospital, London, England, who had served three months as acting superintendent of nurses at Johns Hopkins Hospital. A dormitory for the nurses was erected in the rear of the hospital. This dormitory,

The present Lombard St. portion of the old hospital was added in 1896

or addition, was constructed in what was known as the rear of the chapel. This, I would take it, would be what we understand today as the annex, and ran straight back to Lemon Alley. This addition was approached from the hospital through an arch in back of the stairway on the first floor and had a large room on the first floor, with one of similar size on the second. These rooms were supposed to have contained the nuns' cubicles of long ago. The ones on the first floor had been rearranged as rooms for the housekeeper and night nurses. The large room on the second floor was used as a nurses' reception room. Morning prayers, lectures and the superintendent's

classes were also held here. The nurses lived in a building in the rear of this with a wide hall and rooms on each side. There were about fourteen rooms on each floor.

The hospital is much indebted to Miss Parsons for her valuable aid in putting the training school on a firm foundation, and in recogni-

The result of an effort started one hundred and eleven years ago. What will the year two thousand and forty-five offer?

tion of her service the new home for nurses was named the Louisa Parsons Home and formally opened in November, 1922.

At the Faculty meeting of February 12, 1887 a special committee reported on the desirability of having a "Lying-in-Hospital". This had received considerable attention for some time back and, as might be expected, it was a subject in which the Board of Lady Managers had great interest. At the meeting of February 26, 1887 the Faculty

took definite action and purchased the property at 622 West Lombard Street at the price of $11,500 in fee. A group of ladies in Baltimore, represented by Miss Garrett, came forward with their assistance and made an agreement to subscribe a helpful contribution each year, provided the medical students of the Woman's Medical College of Baltimore were accorded clinical privileges in the institution. This department continued its very active career for many years until the erection of the Louisa Parsons' Nurses' Home. At this time the maternity division at 622 was moved over into the space vacated by the nurses.

At the April meeting in 1895 the discussion for a new hospital was started, and the aid of the Ladies Auxiliary and alumni groups was sought. From this time on much attention was given to the various details in such a venture. The Faculty took definite action at the June meeting in 1896, and it was decided to proceed at once with the erection of the new building. In order to defray the necessary expense of this undertaking, the sum of $70,000 was to be raised by the issue of 6 per cent interest-bearing bonds. This, then, provided the new front to the hospital with which we are familiar today. A description of this building at this time is not necessary. It probably will be a suitable place for someone to start when the history of our new hospital is written.

We deserted the old place in November, 1934 and moved out everything that was tangible. The building was filled, however, with intangibles, moments of greatest joy, hours of deepest anguish, thoughts, heartaches, and all the ills to which flesh is heir. Even the shades of those grand old men occupy their accustomed places in operating rooms, wards or lecture rooms. We have moved out, but we have left behind an affection that only final dissolution will efface.

PROCEEDINGS

of the

University of Maryland Biological Society

THE NINETY-SIXTH PROGRAM MEETING

The Ninety-Sixth Program Meeting of the University of Maryland Biological Society was held on Tuesday, January 17, 1939 in Gordon Wilson Memorial Hall. The following papers were read:

I. "The Inhibition of Pigment-Producing Enzymes by Oxidation-Reduction Indicator Dyes" by Frank H. J. Figge, A.B., Ph.D., Department of Gross Anatomy, School of Medicine, University of Maryland.

II. "The Study of the Living Thyroid Gland" by Glenn Horner Algire, B.S., Department of Gross Anatomy, School of Medicine, University of Maryland.

Abstracts of these papers appear below.

THE INHIBITION OF PIGMENT-PRODUCING ENZYMES BY OXIDATION-REDUCTION INDICATOR DYES*†

FRANK H. J. FIGGE, A.B., PH.D.

BALTIMORE, MD.

In test tube experiments it was found that the phenol indophenol dye inhibited the enzyme tyrosinase. The pallor which it induces in larval amphibia is probably

* From the Department of Gross Anatomy, School of Medicine, University of Maryland.

† Read at the meeting of the University of Maryland Biological Society, January 17, 1939.

caused by a similar intracellular effect on the tyrosinase in melanophores. This discovery alone did not explain the observation that while the dye decreased the amount of pigment in melanophores, it brought about an increase in connective tissue cell pigment. The hypothesis which explains this observation is as follows:

1. The activity of the enzyme tyrosinase is regulated by the oxidation-reduction potential of the cytoplasm or active centers in this.

2. The melanophore maintains a redox potential near the optimum for pigment production.

3. The connective tissue cell maintains a lower redox potential near the lower limit of the activity range of the enzyme.

4. The introduction of phenol indophenol, by virtue of its tendency to maintain a high positive potential, shifts the redox potential of both cells in a positive direction.

5. In the presence of the dye, the redox potential of the melanophore shifts away from the optimum, while that of the connective tissue cell shifts closer to the optimum for pigment production by tyrosinase.

By using various redox indicators and substances to regulate the redox potential of a well-buffered substrate mixture, it was found that the activity of the enzyme tyrosinase did vary with the redox potential of its environment. According to this concept, the very presence and relative abundance of pigment in any cell may be used to estimate the oxidation-reduction potential of that cell.

Likewise, any sudden or gradual change in pigmentation of any group of cells, such as hair turning gray or abnormal pigmentation associated with certain diseases, may be regarded as visual evidence of a change in the redox potential of these cells. To control the pigment content of cells and perhaps some of the diseases associated with abnormal pigmentation, it may only be necessary to discover methods to regulate the oxidation-reduction potential of cells.

THE STUDY OF THE LIVING THYROID GLAND*†

GLENN HORNER ALGIRE, B.S.

BALTIMORE, MD.

A method is described for the transillumination of the thyroid gland of the living salamander with the normal blood supply intact, which makes it possible to observe and take photographs with the highest oil immersion systems of the compound microscope. The illuminating system differs from that of the conventional microscope in having the two top condenser lenses replaced by a straight quartz rod, through which rays of light are transmitted to its tapered tip by internal reflection. The rod projects through a hole in the animal dish and is sealed against leaks. The operation isolates the thyroid and its vessels from fascial connection with neighboring structures. The gland is brought directly over the tip of the rod by means of Harne micromanipulators. Artificial respiration is accomplished by passing air through a cannula inserted into the tip of the lung. Specially constructed immersion caps permit the use of the oil immersion objectives for observations of the gland which is immersed in Ringer's solution. The apparatus makes it possible to study, in the living intact animal, the cytological changes which occur in the

* From the Department of Gross Anatomy, School of Medicine, University of Maryland.

† Read at the meeting of the University of Maryland Biological Society, January 17, 1939.

thyroid cells in response to injections of a thyroactivator. In this manner it has been confirmed that the structures observed in fixed and stained sections are not artefacts, but exist in the living cell. These structures, as described by Uhlenhuth, are: the plasma granule, the colloid droplet, intracellular vacuoles, and intercellular spaces.

Observations made during the active colloid releasing phase of thyroid function resulting from one to six thyroactivator injections indicate that there occurs:

1. The gradual enlargement of a granule into a colloid droplet.
2. The formation of new colloid droplets in proximity to the apical end of the nucleus.
3. The movement of colloid droplets from the apical end of the nucleus to the basal position of the cell.

THE NINETY-SEVENTH PROGRAM MEETING

The Ninety-Seventh Program Meeting of the University of Maryland Biological Society was held on Tuesday, February 14, 1939 in Gordon Wilson Memorial Hall. The following papers were read:

I. "Cleavage and Early Development in Species Hybrids" by James C. Lipsett, B.S., Ph.D., Department of Gross Anatomy, School of Medicine, University of Maryland.

II. "The Pharmacology of Octyl Nitrite and Its Application in Angina Pectoris" by John C. Krantz, Jr., Ph.D., Department of Pharmacology, School of Medicine, University of Maryland.

CLEAVAGE AND EARLY DEVELOPMENT IN SPECIES HYBRIDS*†

JAMES C. LIPSETT, B.S., PH.D.

BALTIMORE, MD.

Two species of Amblystoma differ in rate of cleavage beginning at the third division, after which the process proceeds more rapidly in tigrinum than in mexicanum. The reciprocally cross-fertilized eggs of these species develop at a mean intermediate rate, with variation in the maternal direction. Rate differences are most clearly perceived during neurulation; when mexicanum is in Harrison's stage 14 and tigrinum preponderantly in stages 16, 17, and 18, the reciprocal hybrids are in stage 15 with matroclinous variation.

A specific genetic basis for this early developmental character is suggested, in contradiction to older theories which hold that the characters of early embryonic development are determined in the cytoplasm prior to fertilization and cannot be modified by the zygote nucleus. In this case only the matroclinous variation of the reciprocal hybrids points to the operation of prematuration karyotypic factors in the cytoplasm, whereas the blending action of the biparental nuclear factors plays the predominant rôle in the determination of the intermediate hybrid cleavage rate.

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* From the Department of Gross Anatomy, School of Medicine, University of Maryland.

† Read at the meeting of the University of Maryland Biological Society, February 14, 1939.

THE NINETY-EIGHTH PROGRAM MEETING

The Ninety-Eighth Program Meeting of the University of Maryland Biological Society was held on Friday, March 17, 1939 in the Engineering Auditorium, University of Maryland, College Park, Maryland. A dinner in the University dining hall preceded the meeting. The following papers were read:

I. "Protoplasmic Streaming and Translocation in Living Cells in Relation to Vernalization" by Herman G. duBuy, Ph.D., Department of Botany, University of Maryland, College Park, Maryland.

II. "Air and Other Gases in Food Refrigeration" by Lawrence H. James, Department of Bacteriology, University of Maryland, College Park, Maryland.

SEVEN PRINCIPLES OF THE SECRETION PROCESS OF THE THYROID AS REVEALED BY COLLOID MEASUREMENTS*†

EDUARD UHLENHUTH, PH.D.

Data obtained from measurements of the colloid content in 110 normal and about 500 activated thyroids of Triturus torosus, the Californian newt, are presented.

The evidence furnished by these measurements leads to the following conclusions:

1.) In the normal thyroid gland functional activity proceeds in wavelike cycles consisting of periodical alternation between releasing and storage phases, and results in rhythmical changes of the colloid content between maximum and minimum values.

2.) Experimental activation emphasizes the releasing phase resulting in a permanent depression of the colloid value.

3.) Continued administration of thyroactivator does not abolish the storage phase, but on the contrary permits colloid to be stored in the follicles between each two releasing-outbursts. It thus increases markedly the amplitude of the cyclic waves of colloid values.

CEREBELLAR AGENESIS WITH ANATOMICAL STUDY OF AN EXTREME CASE‡

H. S. RUBENSTEIN, PH.D., M.D.,§ AND WALTER FREEMAN, PH.D., M.D.‖

Cerebellar agenesis, which may be complete or incomplete, is usually accompanied by antemortal signs and symptoms of cerebellar defect. A case is herein reported in which in spite of extreme attenuation in cerebellar development, antemortal signs

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* From the Department of Gross Anatomy, School of Medicine, University of Maryland.

† Read at the meeting of the University of Maryland Biological Society, October 18, 1938.

‡ Presented before the University of Maryland Biological Society, December 6, 1938.

§ From the Research Laboratory, Surgical Division, Sinai Hospital, Baltimore, Md.

‖ From the Department of Neurology, George Washington Medical School, Washington, D. C.

did not develop until two years before the patient's death at 71 years of age. The brain when removed was found to show numerous atheromatous infarcts on the cortex cerebri, particularly well marked over the parietal lobes. The pons was small and the cerebellum was limited merely to a rather diminutive flocculo-nodular lobe.

Detailed studies of the brain disclosed in addition marked hypoplasia of the cerebellum and its related structures, such as the fatigial, dentate, inferior olivary, visual reflex, and mesencephalic trigeminal systems.

The question of compensation for cerebellar deficiencies was discussed and it was concluded that the patient herein studied was afflicted with a constitutional inferiority which was so generalized that for the greater part of his life he could function as a fairly well balanced psychobiologic entity on a lower psychosomatic, social, economic and intellectual level.

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The names listed above are officers for the term beginning July 1, 1938 and ending June 30, 1939.

SPRING ACTIVITIES

The Board of Regents, The President and the Board of Directors of the Alumni Association, together with the Dean and Medical Council of the School of Medicine of the University of Maryland, cordially invite you to attend the spring activities.

PROGRAM

JUNE 1, 1939

9:00 A.M.—Registration at the Main University Building.
10:00 A.M.—12 M.—Inspection of University Hospital and Clinics.
1:00 P.M.—Luncheon, University Hospital.
2:00 P.M.—Annual Meeting of the Medical Alumni Association, University Hospital.
3:00 P.M.—6:00 P.M.—5-Year Class Reunions.
7:00 P.M.—Annual Banquet, Lord Baltimore Hotel.

GUESTS OF HONOR

H. C. BYRD

President of the University of Maryland

HIS EXCELLENCY, THE HONORABLE HERBERT R. O'CONOR

Governor of Maryland

THE HONORABLE HOWARD W. JACKSON

Mayor of Baltimore

J. M. H. ROWLAND, M.D.

Dean of the School of Medicine

MEMBERS OF THE BOARD OF REGENTS

GRADUATES OF 1939, SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

The following classes have expressed their intention to hold a reunion this year:

Class of 1934
Class of 1929
Class of 1924
Class of 1919
Class of 1914—U. of Md.
P. & S.
Class of 1909—U. of Md.
P. & S.
B. M. C.
Class of 1904—U. of Md.
P. & S.
B. M. C.
Class of 1899—U. of Md.
P. & S.
B. M. C.
Class of 1894—U. of Md.
P. & S.
B. M. C.

NOTE: The reunions will include the graduates from the College of Physicians and Surgeons, University of Maryland and the Baltimore Medical College. Any other classes desiring to hold reunions will please communicate with the Medical Alumni Office, Lombard and Greene Streets, Baltimore, Maryland, which will be pleased to help in every possible way to make the affair a success.

JUNE 1, 1939

11:00 A.M.—Commencement Exercises, Ritchie Coliseum, College Park, Md.

Secretary of the Medical Alumni Association.

Kindly send ..... ticket .. for the Alumni Banquet of the Medical Alumni Association, University of Maryland, to be held at the Lord Baltimore Hotel on Thursday evening, June 1, 1939, at 7 P.M.

I will / will not *or* be present for the banquet.

Enclosed please find subscription at $2.50 per ticket.

Name.....

Address.....

(*Detach and mail to:* MEDICAL ALUMNI ASSOCIATION
Lombard and Greene Streets, Baltimore, Md.)

Programs may be obtained at the time of registration.

ITEMS

CHARTER DAY CELEBRATION

On January 20, 1939 the Alumni Association held its annual banquet at the Lord Baltimore Hotel in observance of one hundred and thirty-years' service of the University of Maryland. The Honorable William P. Cole, '10, United States Congressman from Maryland, acted as toastmaster for the occasion, and Colonel Frank W. Weed, M.D., '03, was the honorary chairman. Dr. Harry C. Byrd, President of the University, presented the distinguished guests, among whom were His Excellency, Governor Herbert R. O'Conor, '20, Honorable Harry W. Nice, former Governor of Maryland, '98, Senator Radcliffe, '03, Congressmen Goldsborough, '01, D'Alesandro, Byron and Kennedy. Presidents of many of the affiliated organizations were also present. The guest speaker was Mr. Charles P. McCormick, president of McCormick & Company of Baltimore. Mrs. John Paul Troy, '17, past president of the Nurses Alumnae Association, presented a brief history in commemoration of the fiftieth anniversary of the founding of the School of Nursing. The chairman of the committee in charge of the celebration was Dr. Frank L. Black, '04, a graduate of the School of Pharmacy, and Mrs. Page Edmunds, '05, a graduate of the School of Nursing, served as vice-chairman of the committee. Credit is due these two alumni and their assistants for the tremendous success of their undertaking and the enjoyable program provided for those who attended.

Captain Benjamin H. Dorsey, Medical Corps, U. S. N., (U. of M. 1901) was recently promoted to the rank of rear admiral.

Captain Dorsey was born in Ellicott City, Maryland on September 13, 1878. Two years after his graduation from the School of Medicine of the University of Maryland he was commissioned an assistant surgeon, with the rank of lieutenant (junior grade) in the Navy Medical Corps, and attained the rank of captain in 1924. During the World War he was stationed in the Bureau of Medicine and Surgery of the Navy Department in Washington. He subsequently served as senior medical officer on board the hospital ship Mercy and as commanding officer of the naval hospitals at Puget Sound, Washington, Portsmouth, New Hampshire, and Newport, Rhode Island. Since November, 1935 he has been in command of the naval dispensary in Washington.

Governor Herbert R. O'Conor recently announced the appointment of Dr. Maurice C. Pincoffs, Professor of Medicine of the Uni-

versity of Maryland School of Medicine, as a member of the State Board of Health. In announcing this appointment the Governor paid tribute to Dr. Pincoff's career and the numerous activities in which he is engaged. The following excerpts are quoted from the report which accompanied the announcement:

"Dr. Pincoffs has been engaged in most important work as chairman of the committee on medical economics of the Medical and Chirurgical Faculty.

"His report on the subject of medical economics in Maryland contains valuable information to the State and indicates that he is in a position to be of considerable help as a member of the State board.

"He has done a great deal of research work and specializes in internal medicine. He is the author of numerous professional papers and is editor of the *Annals of Internal Medicine.*

"Recently Dr. Pincoffs has been appointed a member of the Committee for the Study and Campaign against Social Diseases and also is a member of the committee appointed by the international health division of the Rockefeller Foundation, which was requested by the Maryland State Planning Commission to study County and State health organizations.

"He has also been a consultant of the Baltimore City Health Department."

TESTIMONIAL DINNER FOR DR. CARL L. DAVIS

The Faculty of Physic, staff members of the Department of Anatomy and former graduate students of the School of Medicine, University of Maryland gave a testimonial dinner for Doctor Carl Lawrence Davis on February 8, 1939 at the University Club, Baltimore, on the occasion of his sixtieth birthday.

Dr. J. M. H. Rowland, Dean of the School of Medicine, was the principal speaker. In his remarks he paid high tribute to Dr. Davis as a teacher, a scholar and as an author of many excellent scientific papers and books.

Dr. John C. Krantz, Jr. was spokesman for the group, which presented Dr. Davis with a handsome watch, appropriately engraved.

In accepting the gift Dr. Davis elected to digress from his main theme enough to point out the great hope he holds for the University. As he saw and predicted twenty years ago the fine institution which now exists, he sees in the future a better if not a much larger institution.

Dr. Davis was born in Vermontville, Michigan. He was educated

at Georgetown and George Washington Universities, and received his degree of doctor from the latter institution. He practiced medicine in Washington, D. C. before re-entering the George Washington University as a teacher of anatomy. Dr. Davis soon gained professorial rating and headed his department before leaving his Alma Mater. In 1919 he came to the University of Maryland to head the Department of Anatomy and has established his department as one of the best in teaching and research.

Dr. Davis is a man easy to approach, tireless of patience and indomitable of spirit. His presence on the faculty of the University will continue to be valued highly and he will be numbered as one whose active life has contributed to the making of a great university.

Those who know him best seek and respect his counsel most.

Admiral Percival S. Rossiter, Surgeon General of the United States Navy (U. of M. 1895), recently was retired from service. After his graduation he went to Colorado to engage in the practice of medicine and entered the Army as a surgeon at the outbreak of the Spanish-American War. In recognition of his skill and bravery under fire the War Department expressed a desire to honor him. At his request he was commissioned in the Navy, where he had a most eventful career until his recent retirement.

Dr. Anthony J. Pepe (U. of M. 1935) announces the opening of an office at 122 Derby Avenue, Derby, Connecticut, devoted to the practice of general surgery and surgical specialties.

Dr. H. Lawrence Sutton (U. of M. 1934) announces the removal of his offices to 777 High Street, Newark, New Jersey.

Dr. Frank H. J. Figge, Associate Professor of Gross Anatomy, addressed the Zoological Section of the American Association for the Advancement of Science at the meeting held in Richmond, Virginia on December 28, 1938. His topic was "Pigment Metabolism Studies".

Dr. Everet Hardenbergh Wood (U. of M. 1935) has recently opened an office at 120 Genesee Street, Auburn, New York. His practice will be limited to ophthalmology.

The following Massachusetts alumni are serving as elective officers of the several constituent district societies of the Massachusetts Medical Society for the fiscal year 1938–1939:

Doctor L. R. Chaput (U. of M. 1916), Haverhill, President, Essex North District.

Doctor A. H. Wright (U. of M. 1906), Northfield, Vice-President, Franklin District.

Doctor J. H. Weller (P. & S. 1909), Bridgewater, Librarian, Plymouth District.

Doctor J. C. Austin (P. & S. 1896), Spencer, Vice-President, Worcester District.

Doctor E. P. Disbrow (P. & S. 1908), Worcester, Treasurer, Worcester District.

Doctor B. P. Sweeney (B.M.C. 1911), Leominster, Vice-President, Worcester North District.

Doctor John R. Agnew (U. of M. 1914) and Doctor Colin Holmes (P. & S. 1915) both of Springfield, Massachusetts, are on the visiting staff of the Springfield Isolation Hospital as chief of staff and eye, ear, nose and throat consultant, respectively.

DEATHS

JOSEPH IRWIN FRANCE, M.D.

In the death of Joseph Irwin France, which occurred January 26, 1939, the University of Maryland lost a renowned alumnus, the State of Maryland a devoted, able and loyal public servant. Dr. France was born October 11, 1873, the son of the Rev. Dr. Joseph Henry and Hannah Fletcher France. In 1895 he received his A. B. degree from Hamilton College, then availed himself of an Elihu Root foreign fellowship at the University of Leipzig, and following this did graduate work at Clark University. He then taught biology at Tome Institute, and in 1899 entered upon the study of medicine at the College of Physicians and Surgeons, from which he graduated in 1903. For two years following his graduation, he practiced medicine in Baltimore, during which time he wrote a paper on typhoid fever. Dr. France then entered the political arena, representing Cecil County as Senator in the State Legislature for two terms. He was a delegate to a number of Republican National Conventions and represented the State of Maryland in the United States Senate from 1917 to 1923. During 1931 and 1932 he was a candidate for the Republican nomination for President against Herbert Hoover. Of late years he was a member

of the State Planning Committee and of the Maryland State Board of Health. He was Secretary of the Medical and Chirurgical Faculty of Maryland, 1916–1917. Although retiring from active practice in 1905, Dr. France always retained a keen interest in medicine and at the time of his death was a valuable member of the State Board of Health. He was Vice-President and for a time acting President of Tome Institute, in the affairs of which he took an active part for a long period of years. On retiring from the practice of medicine he entered the business and financial fields and was engaged in international trade. Dr. France made a special study of Russian economic conditions and urged the recognition of Soviet Russia while in the United States Senate, feeling confident that this would be a great advantage to our foreign trade. In politics he was a liberal, and being a member of the Republican party in Maryland accounted for his failure of re-election. He published a number of articles on political and economic subjects. He was a member of the Theta Delta Chi and the Phi Beta Pi fraternities. Dr. France was married twice. His first wife was Evalyn Nesbitt Tome of Port Deposit, Md.; after her death he married Tatiana Dechtereva of Paris, France.

Those who knew him well recognized in Dr. France the qualities of loyalty, kindliness, and a sense of honor that made him one of God's noblemen. In his death the State loses an able, forward-looking citizen, and his associates a genial and loyal friend.

EDGAR B. FRIEDENWALD.

HARRY ELMER PETERMAN, M.D.

Dr. Harry Elmer Peterman, B.M.C. 1895, last survivor of the founders of South Baltimore General Hospital, died suddenly on February 25, at the age of 68 at his home.

Dr. Peterman was born in Chambersville, Pa. in 1871. After attending the public grammar and high schools, he entered the Indiana State Normal School and taught three years in the schools of Indiana County. He then undertook the study of medicine at Baltimore Medical College and graduated with honors in 1895.

In 1901 Dr. Peterman established a small dispensary in South Baltimore known as the South Baltimore Eye, Ear, Nose and Throat Charity Hospital. He took an active part in the growth of this institution, which later became the South Baltimore General Hospital, and held many official positions at various times. Dr. Peterman also served on the staff of Maryland General Hospital and Frederick City Hospital, Frederick, Md. He was a member of the Baltimore City Medical Society, the American Medical Association, the

American Academy of Ophthalmology and Otolaryngology, and the Southern Medical Association. In addition he was a fellow of the American College of Surgeons.

Dr. Peterman had recently been honored with a bronze in the main hall of the South Baltimore General Hospital, and was awarded a medal by the South Baltimore Improvement Association in recognition of his value to the community.

JAMES PUTNEY, M.D.

Dr. James Putney, U. of Md. 1889, aged 79, died on February 6, 1939 in Charleston, W. Va. after an illness of ten days.

Dr. Putney was dean of Charleston physicians and one of the oldest living graduates of this school. He was born in Malden, W. Va. on September 4, 1859, the son of James and Mary Reed Putney. After receiving his degree of medicine he located in Charleston, where he continued active practice up until the time of his illness. For several years he was a physician for the Chesapeake and Ohio Railroad Company and later was associated with Dr. Fred S. Thomas and Dr. William W. Thompson in the operation of the old Charleston General Hospital. Besides rendering untold services to hundreds of Kanawha Valley residents, Dr. Putney took an active part in the West Virginia Medical Association and the Kanawha County Medical Society.

JAMES A. HARTEN, M.D.

Dr. James A. Harten, B. M. C. 1910, aged 53, died on February 6, 1939 in Montowese, Conn., following an illness of four years. He was on the staff of the New Haven and Grace Hospitals and engaged in the practice of general medicine from 1910 to 1928. In the latter year he became a specialist in ear, eye, nose and throat diseases, after completing a special postgraduate course at the University of Pennsylvania Medical School. Dr. Harten was a member of the New Haven and State medical associations. During the World War he served as a first lieutenant in the evacuation corps, being stationed for 18 months at a base hospital in Nantes, France.

AREY COVINGTON EVERETT, M.D.

Dr. Arey Covington Everett, U. of Md. 1897, aged 65, died on December 26, 1938 in Rockingham, N. C.

Dr. Everett was born in Laurinburg, N. C. He was educated at the famous Quakenbush School and at the age of twenty entered the University of Maryland School of Medicine. During his senior

year he served as an intern in the University Hospital. After receiving his degree he took various postgraduate courses. In October, 1897 Dr. Everett located in Richmond County, N. C. and later moved to Rockingham, where he engaged in active practice until his death. He was a member of the North Carolina State Medical Society, the Tri-State Medical Society and the Richmond County Medical Society, also a fellow of the American Medical Association. During his forty-two years of practice he served at intervals as president, secretary or treasurer of the Richmond County Medical Society. For years he was a member of the County Board of Health and also served as county health officer.

JAMES F. LYNCH, M.D.

Dr. James F. Lynch, P. & S. 1913, aged 47, surgeon and president of the staff at St. Francis Hospital, Hartford, Conn., died on January 7, 1939 at the hospital, where he had been admitted as a patient the previous day.

Dr. Lynch was born on November 16, 1891, in Taunton, Mass., the son of Cornelius Francis and Alice Elizabeth Cosgrove Lynch. He graduated from the College of Physicians and Surgeons in 1913 and in 1915 became assistant superintendent of St. Francis Hospital. In 1922 he was made attending surgeon of the hospital. Dr. Lynch also was consulting supervisor of surgery at the United States Veteran's Hospital, Newington, and consulting surgeon at the Hartford Neuro-Psychiatric Institute. He was elected staff president at St. Francis in 1936 and re-elected in 1937. A member of the Hartford Medical Society, the Hartford County Medical Association, the Connecticut Medical Society and the American Medical Association, he was also a fellow of the American College of Surgeons. In 1918 and 1919 Dr. Lynch served in the United States Naval Reserve Force.

The untimely death of Dr. Lynch removed a brilliant and highly skillful surgeon from the front rank of the Hartford medical profession. St. Francis Hospital particularly suffered a severe loss in the demise of the president of its staff.

Branham, Harris M., Brunswick, Ga.; P. & S., class of 1888; aged 76; died, October 28, 1938, of cerebral hemorrhage and chronic myocarditis.

Couillard, Edward J., Northbridge, Mass.; B. M. C., class of 1909; aged 57; died, October 8, 1938.

Cushing, Wilson R., Dublin, Va.; class of 1881; aged 81; died, October 6, 1938.

Doughty, H. Everett, Oxford, Me.; B. M. C., class of 1909; aged 65; died, January 28, 1939.

Famous, Charles W., Street, Md.; class of 1901; aged 63; died, October 17, 1938, of coronary thrombosis.

File, Norman Walter, Lynchburg, Va.; B. M. C., class of 1908; served during the World War; aged 54; died, November 4, 1938, of cerebral hemorrhage.

Funck, John William, Baltimore, Md.; class of 1888; aged 84; died, October 4, 1938, of chronic myocarditis.

Hobgood, Legan Henry, New Bedford, Mass.; class of 1921; aged 45; died, October 27, 1938, of biliary cirrhosis.

Kaufman, Albert S., New Kensington, Pa.; B. M. C., class of 1893; aged 69; died, October 8, 1938, of arteriosclerosis.

Kearney, William A., Prospect, Va.; class of 1883; aged 83; died, October 17, 1938, in a hospital at Richmond of urinary calculi and bronchopneumonia.

LaRue, Arthur A., Worcester, Mass.; B. M. C., class of 1901; aged 61; died, November 1, 1938, of chronic myocarditis.

Mace, Carville Veis, Rossville, Md.; class of 1897; aged 67; died, March 6, 1939 at the family homestead, known as Maynard's Privilege.

Miller, William Lee, Bemis, W. Va.; class of 1894; aged 73; died, October 12, 1938, of arteriosclerotic heart disease.

Mosier, J. Russell, Hayfield, Pa.; class of 1883; aged 83; died, October 14, 1938.

Neill, John H., Westfield, N. Y.; class of 1889; aged 82; died, November 13, 1938, of cardiorenal vascular sclerosis.

Nesbitt, Charles Torrence, Wilmington, N. C.; B. M. C., class of 1893; aged 68; died, October 10, 1938, of myocarditis.

O'Hara, William J. A., Bridgeport, Conn.; P. & S., class of 1893; aged 74; died, August 4, 1938.

Shea, Michael A., Fall River, Mass.; P. & S., class of 1900; aged 77; died, February 4, 1939.

Smith, Frank Robert, Sr., Baltimore, Md.; class of 1891; aged 82; died, September 26, 1938, of heart disease.

Wegeforth, Arthur, San Diego, Calif.; B. M. C., class of 1890; aged 68; died, February 9, 1939.

INDEX TO VOLUME 23

Law Building

Medical School Buildings

BULLETIN

OF THE

University of Maryland School of Medicine *and* College of Physicians and Surgeons

Successor to The Hospital Bulletin of the University of Maryland, Baltimore Medical College News, and the Journal of the Alumni Association of the College of Physicians and Surgeons

Announcement

for the

One Hundred Thirty-Third Annual Session

1939-1940

VOLUME 23, NO. 5

MAY, 1939

CALENDAR FOR 1939–40

SCHOOL OF MEDICINE

FIRST SEMESTER

1939		
September 19	Tuesday	*Registration for first and second-year students
September 20	Wednesday	*Registration for all other students
September 21	Thursday	Instruction begins with the first scheduled period
November 29	Wednesday	Thanksgiving recess begins after the last scheduled period
December 4	Monday	Instruction resumed with the first scheduled period
December 20	Wednesday	Christmas recess begins after the last scheduled period
1940		
January 3	Wednesday	Instruction resumed with the first scheduled period
January 22	Monday	
to	to	*Registration for the second semester
January 27	Saturday	
January 27	Saturday	First semester ends after the last scheduled period

SECOND SEMESTER

January 29	Monday	Instruction begins with the first scheduled period
February 22	Thursday	Washington's Birthday—Holiday
March 20	Wednesday	Easter recess begins after the last scheduled period
March 27	Wednesday	Instruction resumed with the first scheduled period
June 1	Saturday	Commencement

PARTIAL CALENDAR FOR 1940–1941

1940		
September 17	Tuesday	*Registration for first and second-year students
September 18	Wednesday	*Registration for all other students
September 19	Thursday	Instruction begins with the first scheduled period

* A student who neglects or fails to register prior to or within the day or days specified will be called upon to pay a late registration fee of five dollars ($5.00). The last day of registration with fee added to regular charges is Saturday at noon of the week in which instruction begins following the specified registration period. (This rule may be waived only upon the written recommendation of the dean.)

* The offices of the registrar and comptroller are open daily, not including Saturday, from 9:00 a.m. to 5:00 p.m., and on Saturday from 9:00 a.m. to 12:30 p.m., with the following exceptions: Monday, September 11, 1939, until 8:00 p.m.; Saturday, September 23, 1939, until 5:00 p.m.; and on Saturday, January 27, 1940, until 5:00 p.m.

Early registration is encouraged.

ORGANIZATION

THE UNIVERSITY OF MARYLAND

HARRY CLIFTON BYRD, B.S., LL.D., D.Sc., *President and Executive Officer*

BOARD OF REGENTS

	Term expires
DR. W. W. SKINNER, *Chairman* Kensington, Montgomery County	1945
MRS. JOHN L. WHITEHURST, *Secretary* 4101 Greenway, Baltimore	1947
HON. W. CALVIN CHESNUT United States Postoffice Building, Baltimore	1942
HON. WILLIAM P. COLE, JR. Towson, Baltimore County	1940
HENRY HOLZAPFEL, JR., ESQ. Hagerstown, Washington County	1943
HARRY H. NUTTLE, ESQ. Denton, Caroline County	1941
J. MILTON PATTERSON, ESQ. Cumberland, Allegany County	1944
JOHN E. SEMMES, ESQ. Baltimore Trust Building, Baltimore	1942
HON. ROWLAND K. ADAMS Court House, Baltimore	1948

The control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole, or to co-operative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organizations:

The College of Agriculture.
The College of Commerce.
The College of Engineering.
The College of Arts and Sciences.
The School of Medicine.
The School of Law.
The School of Pharmacy.
The College of Education.
The School of Dentistry.
The College of Home Economics.
The Graduate School.
The School for Nurses.
The Summer School.
The Department of Military Science and Tactics.
The Department of Physical Education and Recreation.

The Schools of Medicine, Law, Dentistry, Pharmacy, and the School for Nurses are located in Baltimore in the vicinity of Lombard and Greene Streets; the others in College Park.

THE UNIVERSITY SENATE
(Baltimore Schools)

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J. M. H. Rowland, M.D., Sc.D., LL.D.....Dean of the School of Medicine
Roger Howell, Ph.D., LL.B.....Dean of the School of Law
Andrew G. DuMez, M.S., Ph.D.....Dean of the School of Pharmacy
J. Ben Robinson, D.D.S., F.A.C.D.....Dean of the School of Dentistry
L. B. Broughton, Ph.D.....Dean of the College of Arts and Sciences
Arthur J. Lomas, M.D., C.M., D.P.H.....Superintendent of the Hospital
Alma H. Preinkert, M.A.....Registrar
W. M. Hillegeist.....Director of Admissions

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J. M. H. Rowland
Hugh R. Spencer
H. Boyd Wylie
Carl L. Davis
Maurice C. Pincoffs
Frank W. Hachtel
Eduard Uhlenhuth
Clyde A. Clapp
John C. Krantz, Jr.
Walter D. Wise
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Louis H. Douglass

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Harry Friedenwald, A.B., M.D., D.H.L., D.Sc..Professor Emeritus of Ophthalmology
William S. Gardner, M.D.....Professor Emeritus of Gynecology
Julius Friedenwald, A.M., M.D.....Professor Emeritus of Gastro-Enterology
Alexius McGlannan, A.M., M.D., LL.D.....Professor Emeritus of Surgery

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HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title of the University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons (1915).

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807, and chartered in 1808, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The beautiful college building at Lombard and Greene Streets, erected in 1812, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837) and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867), and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of thirty-two years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Maternité*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. By the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the City Hospital, now the Mercy Hospital, was obtained.

BUILDINGS

The original medical building at the corner of Lombard and Greene Streets houses the office of the Dean, the Conference Room of the Faculty, and two lecture halls.

The Administration Building, to the east of the original building, contains the Baltimore offices of the Registrar and the Director of Admissions and two lecture halls, one large and one small.

The laboratory building at 31 South Greene Street is occupied by the departments of Pathology, Clinical Pathology, Bacteriology and Biochemistry.

The Frank C. Bressler Research Laboratory provides the departments of Anatomy, Histology and Embryology, Pharmacology and Physiology with facilities for teaching and research. It also houses the research laboratories of the clinical departments, a laboratory for teaching Operative Surgery, a lecture hall, the Bressler Memorial Room—a students' lounge, and animal quarters.

This building has just been erected on Greene Street opposite the University Hospital. It has been built with funds left to the School of Medicine by the late Frank C. Bressler, an alumnus, supplemented with a grant from the Federal government. The building, in the shape of an I, extends east from Greene Street, just north of the original building.

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye patients.

In 1933–1934 the new University Hospital was erected, and patients were admitted to this building in November 1934. The new hospital is situated at the southwest corner of Redwood and Greene Streets, and is consequently opposite the Medical School buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the new building.

The new hospital has a capacity of practically four hundred beds devoted to general medicine, surgery, obstetrics, pediatrics, and the various medical and surgical specialties. On the second, seventh and eighth floors are centered practically all the clinical and laboratory teaching facilities of the institution. The north wing of the second floor is occupied by the entire Department of Roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, bio-chemistry, bacteriology, and an especially well appointed laboratory for students' training. The

south wing has its electro-cardiographic and basal metabolism departments, with new and very attractive air-conditioned or oxygen therapy cubicles. The west wing contains the Departments of Rhinolaryngology and Bronchoscopy, Industrial Surgery, Ophthalmology, and Male and Female Cystoscopy.

The teaching zone extends from this floor to the eighth floor and comprises wards for surgery, medicine, obstetrics, pediatrics, and a large clinical lecture hall.

On the seventh floor is the general operating suite, the delivery suite, and the central supply station. The eighth floor is practically a students' floor and affords a mezzanine over the operating and delivery suites, and a students' entrance to the clinical lecture hall.

There are practically 270 beds available for teaching. In the basement there is a very well appointed Pathological Department with a large teaching autopsy room and its adjunct service of instruction of students in pathological anatomy.

There are now under construction two additional floors. When completed, these will accommodate 38 private patients and 56 ward patients.

Owing to its situation, adjacent to the largest manufacturing district of the city and the shipping district, a large number of accident patients are received.

The obstetrical service is particularly well arranged and provides accommodation for forty ward patients. This service, combined with an extensive home service, assures the student of abundant obstetrical training.

During the year ending December 31, 1938, 1201 cases were delivered in the hospital and 852 cases in the outdoor department. Students in the graduating class observed at least thirty-five cases, each student being required to deliver at least ten cases in their homes.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: Medicine, Surgery, Pediatrics, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopaedics, Proctology, Dermatology, Throat and Nose, Cardiology, Tuberculosis, Psychiatry, Oral Surgery and Oncology. The University Hospital has also a well-organized Dispensary run in connection with its Outdoor Department.

All students in their junior year work each day during one-third of the year in the Departments of Medicine and Surgery of the dispensaries. In their senior year, all students work one hour each day in the special departments.

The new building, with its modern planning, makes a particularly attractive teaching hospital and is a very valuable addition to the clinical facilities of the Medical School.

The old hospital building has been remodeled and is occupied by the Out-patient Department. Thus the students of the future have been provided with a splendidly appointed group of clinics for their training in out-patient work. All departments of clinical training are represented in this remodeled building and all changes have been predicated on the teaching function for which this department is intended.

The Department of Art also occupies quarters in this building.

HOSPITAL COUNCIL

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W. W. SKINNER, *Chairman of the Board of Regents.*
J. M. H. ROWLAND, *Dean of the School of Medicine.*
M. C. PINCOFFS, *Head of the Department of Medicine.*
A. M. SHIPLEY, *Head of the Department of Surgery.*
J. MASON HUNDLEY, JR., *Head of the Department of Gynecology.*
LOUIS H. DOUGLASS, *Head of the Department of Obstetrics.*
CLYDE A. CLAPP, *Head of the Department of Ophthalmology.*
A. J. LOMAS, *Superintendent of the Hospital.*
MISS ANNIE CRIGHTON, R.N., *Superintendent of Nurses.*
MISS FLORENCE SADTLER, *Representing Woman's Auxiliary Board.*
MRS. JOHN L. WHITEHURST, *Member Board of Regents.*
ALLEN FISKE VOSHELL, HARRY M. STEIN } *Representing Hospital Staff.*
G. CARROLL LOCKARD, ALFRED T. GUNDRY } *Representing Medical Alumni.*

UNIVERSITY HOSPITAL STAFF

A. J. LOMAS, *Superintendent of the Hospital*

Physicians

MAURICE C. PINCOFFS

HARRY M. STEIN
WALTER A. BAETJER
THOMAS R. SPRUNT
JOHN E. LEGGE
L. A. M. KRAUSE

G. CARROLL LOCKARD
JOSEPH E. GICHNER
WILLIAM H. SMITH
WILLIAM S. LOVE, JR.
T. NELSON CAREY

RAYMOND HUSSEY

Gastro-Enterologist

ZACHARIAH R. MORGAN

Neurologists

IRVING J. SPEAR

GEORGE M. SETTLE

LEON FREEDOM

Psychiatrists

ROSS MCC. CHAPMAN

RALPH P. TRUITT

HARRY M. MURDOCK

Pediatricians

C. Loring Joslin — Albert Jaffe

Pathologist

Hugh R. Spencer

Surgeons

Arthur M. Shipley — Page Edmunds
Charles Reid Edwards — Robert P. Bay

Neurological Surgeons

Charles Bagley, Jr. — Richard G. Coblentz

Laryngologists

Edward A. Looper — Franklin B. Anderson

Thomas R. O'Rourk

Proctologists

J. Dawson Reeder — Monte Edwards

Orthopaedic Surgeons

Allen Fiske Voshell — Compton Riely
Moses Gellman — Henry F. Ullrich

Genito-Urinary Surgeons

W. H. Toulson — Lyle J. Millan
W. A. H. Council — Harry S. Shelley

Roentgenologists

Henry J. Walton — Eugene L. Flippin

Walter L. Kilby

Dermatologist

Harry M. Robinson

Bronchoscopist

Edward A. Looper

Otologist

J. W. Downey, Jr.

Anaesthetists

S. Griffith Davis — E. Hollister Davis
Mary J. O'Brien, R.N. — Ruth Elliott, R.N.

Obstetricians

L. H. Douglass — Isadore A. Siegel
M. A. Novey — J. G. M. Reese

J. E. Savage

Ophthalmologists

CLYDE A. CLAPP — WILLIAM TARUN

HENRY F. GRAFF

Gynecologists

J. M. HUNDLEY, JR. — R. G. WILLSE

LEO BRADY

Oncologists

J. M. HUNDLEY, JR. — GRANT E. WARD

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF 1939–1940

RESIDENT STAFF

WALTER H. GERWIG, JR., M.D., *Resident Surgeon.*
HARRY C. BOWIE, B.S., M.D., *First Assistant Resident Surgeon.*
STUART G. COUGHLAN, B.S., M.D., *Assistant Resident Surgeon.*
D. FRANK O. KALTREIDER, JR., A.B., M.D., *Assistant Resident Surgeon.*
WILLIAM B. LONG, JR., B.S., M.D., *Assistant Resident Surgeon.*
JAMES R. MARTIN, M.D., *Assistant Resident Surgeon.*
EDWARD A. DUNLAP, M.D., *Assistant Resident Surgeon.*
JAMES G. ARNOLD, JR., A.B., M.D., *Surgical Intern.*
STEPHEN L. MAGNESS, A.B., M.D., *Surgical Intern.*
WILLIAM W. MCKINNEY, M.D., *Senior Surgical Intern.*
EDWARD F. COTTER, M.D., *Resident Physician.*
SAMUEL T. R. REVELL, JR., B.S., M.D., *Assistant Resident Physician.*
JOSEPH E. MUSE, M.D., *Assistant Resident Physician.*
EPHRAIM T. LISANSKY, M.D., *Assistant Resident Physician.*
JAMES UPSHUR THOMPSON, B.A., M.D., *Medical Intern.*
DARIUS M. DIXON, M.D., *Resident Obstetrician.*
JOHN DORMAN, M.D., *Assistant Resident Obstetrician.*
M. M. SCHNEIDER, M.D., *Assistant Resident Obstetrician.*
JOHN K. B. E. SEEGAR, JR., A.B., M.D., *Assistant Resident Obstetrician.*
WILLIAM B. SETTLE, M.D., *Resident Gynecologist.*
EVERETT S. DIGGS, B.S., M.D., *Assistant Resident Gynecologist.*
GIBSON J. WELLS, A.B., M.D., *Resident Pediatrician.*
ROBERT J. GORE, M.D., *Assistant Resident Pediatrician.*
GERALDINE POWELL, M.D., *Assistant Resident Pediatrician.*
FRANK DISTASIO, M.D., *Resident Roentgenologist.*
ALSTON E. MORRISON, M.D., *Resident Roentgenologist.*
CHARLES N. DAVIDSON, M.D., *Assistant Resident Roentgenologist.*

SENIOR INTERNS

STANLEY E. BRADLEY, A.B., M.D.
JOHN Z. BOWERS, B.S., M.D.
JOHN J. BUNTING, M.D.
TIMOTHY A. CALLAHAN, JR., M.D.
LOUIS C. GAREIS, M.D.
JOSEPH M. GEORGE, JR., A.B., M.D.
JOHN H. HAASE, M.D.
SAMUEL NOVEY, M.D.
CONOVER TALBOT, A.B., M.D.
BERNARD O. THOMAS, B.S., M.D.
JOHN A. WAGNER, B.S., M.D.
THEODORE E. WOODWARD, B.S., M.D.

JUNIOR INTERNS

Henry A. Briele, M.D.
Raymond M. Cunningham, A.B., M.D.
Leo J. Gaver, M.D.
Alvin S. Hartz, A.B., M.D.
William H. Leitch, B.S., M.D.
Francis J. McLaughlin, M.D.
William S. Miller, A.B., M.D.
James B. Nuttall, M.D.
Leslie H. Pierce, B.S., M.D.
Edwin R. Ruzicka, B.S., M.D.
Leland B. Stevens, B.S., M.D.
Ramsay B. Thomas, B.S., M.D.

DENTAL INTERN

Dorsey R. Tipton, D.D.S.

UNIVERSITY HOSPITAL DISPENSARY STAFF

Emma Winship, R.N.

Dispensary Director

DISPENSARY COMMITTEE

John E. Legge, *Chairman*
Emma Winship, R.N., *Secretary*

L. H. Douglass
J. Mason Hundley, Jr.
C. Loring Joslin
George H. Yeager
A. J. Lomas
Ralph P. Truitt

MEDICINE

John E. Legge, *Chief of Clinic*

Consultant Physicians

Lewis P. Gundry, *Assistant Chief of Clinic*
M. S. Shiling, *Assistant Chief of Clinic*

Harry G. Jones
Charles H. Reier
M. A. Fine
Herbert Goldstone
Nachman Davidson
George Silverton
Carl P. Roetling
Albert J. Himelfarb
Kurt Levy
George J. Sawyer

George H. Davis

GASTRO-ENTEROLOGY

Zachariah Morgan, *Chief of Clinic*

Z. V. Hooper
Ernest Levi
John A. Myers
M. S. Koppelman
Samuel Morrison
Albert J. Shochat

William Greenfeld

NEUROLOGY

Leon Freedom, *Chief of Clinic*

Benjamin Pushkin
Bernhard Badt
William L. Fearing
Charles E. Balfour

F. J. Warner

PSYCHIATRY

Ralph P. Truitt, *Chief of Clinic*

H. W. Newell
Harry Goldsmith
Harry Murdock
B. Frank Vogel

Alice J. Rockwell

DISEASES OF THE LUNGS

E. H. Tonolla, *Chief of Clinic*

H. V. Langeluttig — Manuel Levin

Meyer W. Jacobson

DISEASES OF METABOLISM

Lewis P. Gundry, *Chief of Clinic*

William G. Helfrich — Walter E. Karfgin

A. Goldman

CARDIOVASCULAR DISEASES

William S. Love, Jr., *Chief of Clinic*

Robert W. Garis, *Assistant Chief of Clinic*

Samuel J. Hankin — Harry M. Robinson, Jr.

Anthony F. Carozza — William G. Helfrich

Robert B. Mitchell

ALLERGY CLINIC

H. M. Bubert, *Chief of Clinic*

Edward S. Kallins, *Assistant Chief of Clinic*

Paul E. Carliner — Samuel Snyder

Nachman Davison — Benjamin S. Rich

Frank V. Manieri

Selma Rosenberg, *Clinic Technician*

PEDIATRICS

C. Loring Joslin, *Director*

John H. Traband, *Chief of Clinic*

Clewell Howell, *Chief of Clinic*

M. Paul Byerly — Thomas A. Christensen

A. H. Finkelstein — Lauriston L. Keown

Samuel S. Glick — Milton Siscovick

F. Strattner Orem — Israel Rosen

Israel P. Meranski — Abraham B. Hurwitz

Robert B. Taylor — Joseph R. Myerowitz

William M. Seabold — Louis R. Maser

Jerome Fineman — Gibson J. Wells

H. Whitney Wheaton — Mabel Wilkin

Albert Jaffe — Robert J. Gore

S. Lilienfeld — Geraldine Powell

SURGERY

George H. Yeager, *Chief of Clinic*

L. T. Chance — Luther E. Little

W. R. Johnson — Samuel McLanahan, Jr.

J. H. Wilkerson — Samuel E. Proctor

J. Frank Hewitt — A. R. Wilkerson

Thurston R. Adams — Samuel H. Culver

ORTHOPAEDIC SURGERY

Allen Fiske Voshell, *Chief of Clinic*

John V. Hopkins — Moses Gellman

Jason H. Gaskel — Henry F. Ullrich

GENITO-URINARY

W. H. Toulson, *Chief of Clinic*

W. A. H. Councill
John F. Hogan
L. J. Millan
Harry S. Shelley

ROENTGENOLOGY

Henry J. Walton, *Chief of Clinic*
Eugene L. Flippin

DERMATOLOGY

Harry M. Robinson, *Chief of Clinic*

Rollin C. Hudson
Joseph C. Bernstein
Thomas E. Roach
Harold M. Goodman
Arthur C. Monninger
Harry M. Robinson, Jr.
Jeannette R. Heghinian

NOSE AND THROAT

Franklin B. Anderson, *Chief of Clinic*

Joseph Nurkin
Cleo D. Stiles
Thomas R. O'Rourk
Benjamin S. Rich

COLON AND RECTUM

Monte Edwards, *Chief of Clinic*
James C. Owings

GYNECOLOGY

J. Mason Hundley, Jr., *Chief of Clinic*
Beverley C. Compton, *Assistant Chief of Clinic*

Thomas S. Bowyer
Joseph V. Castagna
John C. Dumler
John T. Hibbitts
C. Bernard Brack
Kenneth B. Boyd
W. Allen Deckert
Marius P. Johnson
Hugh B. McNally
Charles B. Marek
Helen I. Maginnis

FEMALE CYSTOSCOPY

J. Mason Hundley, Jr.
John T. Hibbitts
W. Allen Deckert
Beverley C. Compton
John C. Dumler

ORAL SURGERY

Brice M. Dorsey, *Chief of Clinic*

Harold Goldstein
Samuel H. Bryant

OBSTETRICS

John E. Savage, *Chief of Clinic*

M. B. Ballard
Maxwell L. Mazer
Jaroslav Hulla
Marius P. Johnson
Dudley P. Bowe
W. Allen Deckert
Joseph M. Blumberg
Hugh B. McNally
Catherine Blumberg
Ferd E. Kadan
Kenneth B. Boyd
Jacob R. Jensen
J. Edward Norris
J. Warren Albrittain

ONCOLOGY

Gynecological Division

J. Mason Hundley, Jr.
Thomas S. Bowyer
Beverley C. Compton
John C. Dumler

Surgical Division

Grant E. Ward
Eugene E. Covington
J. D. Moores
J. W. Nelson
Eldred Roberts
Murray M. Copeland

OPHTHALMOLOGY

H. F. Graff, *Chief of Clinic*

Frank A. Holden
Thomas R. O'Rourk
Milton C. Lang
John G. Runkle
Jerome Snyder

OCCUPATIONAL THERAPY

Miss Sue P. Hurt, *Directress*

SOCIAL SERVICE

Miss Grace Pearson, *Directress*

UNIVERSITY HOSPITAL DISPENSARY

Report from October 1, 1937 to September 30, 1938

Departments	*New Cases*	*Old Cases*	*Total*
Cardiology	242	2,126	2,368
Curative Workshop	15	807	822
Cystoscopy	106	470	576
Dermatology	5,061	14,945	20,006
Diabetic	63	1,218	1,281
Gastro-Intestinal	194	1,126	1,320
Genito-Urinary	690	2,911	3,601
Gynecology	1,701	3,988	5,689
Medicine	2,055	3,594	5,649
Neurology	236	1,034	1,270
Nose, Throat and Ear	1,572	1,268	2,840
Obstetrics	1,503	10,094	11,597
Oncology	285	1,892	2,177
Ophthalmology	1,224	2,631	3,855
Oral Surgery	862	549	1,411
Orthopedic	1,573	3,921	5,494
Pediatrics	2,175	11,310	13,485
Physiotherapy	374	3,624	3,998
Proctology	233	391	624
Protein	152	5,113	5,265
Psychiatry	91	323	414
Surgery	2,708	7,681	10,389
Tuberculosis	265	2,551	2,816
Total	23,380	83,567	106,947

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space have compelled the erection of additions, until now there are accommodations for 310 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

The Hospital adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching.

MERCY HOSPITAL STAFF

BOARD OF GOVERNORS

ALEXIUS MCGLANNAN, *Chairman*

SISTER M. PLACIDE
SISTER M. VERONICA
SISTER M. HILDEGARDE
SISTER M. DE CHANTAL
SISTER M. HILDA

WALTER D. WISE
MAURICE C. PINCOFFS
WAITMAN F. ZINN
THOMAS K. GALVIN
EDWARD P. SMITH

SISTER M. JOSEPH

HOSPITAL STAFF

SURGICAL DIVISION

Consulting Surgeon

ALEXIUS MCGLANNAN

Surgeons

WALTER D. WISE

CHARLES F. BLAKE
F. L. JENNINGS
R. W. LOCHER
THOMAS R. CHAMBERS

ELLIOTT H. HUTCHINS
D. J. PESSAGNO
WILLIAM F. RIENHOFF
N. CLYDE MARVEL

H. F. BONGARDT

Associate Surgeons

I. O. Ridgely
J. W. Nelson
Howard B. McElwain
Simon H. Brager
John A. O'Connor
Thomas B. Aycock
Charles W. Maxson
I. Ridgeway Trimble
R. T. Shackelford
Raymond F. Helfrich

Assistant Surgeons

Julius Goodman
Eugene E. Covington
S. Demarco, Jr.
T. J. Touhey
William N. McFaul, Jr.
Meyer H. Zuravin
Howard L. Zupnik
Daniel R. Robinson

Joseph V. Jerardi

Consulting Ophthalmologist and Otologist

Harry Friedenwald

Ophthalmologists and Otologists

H. K. Fleck
J. W. Downey

M. Raskin

Associates

Joseph I. Kemler .
F. A. Pacienza

Assistant

Joseph V. Jeppi

Consulting Rhinologists and Laryngologists

W. Raymond McKenzie
George W. Mitchell

Rhinologists and Laryngologists

Waitman F. Zinn

Associates

F. A. Pacienza
F. A. Kayser
Benjamin S. Rich
Theodore A. Schwartz

Birkhead Macgowan

Assistant

Joseph V. Jeppi

Bronchoscopist

Waitman F. Zinn

Associate

F. A. Kayser

Assistant

Theodore A. Schwartz

Proctologist

Charles F. Blake

Assistant

Eugene E. Covington

Orthopaedic Surgeon

ALBERTUS COTTON

Associate

H. L. ROGERS

Assistants

I. H. MASERITZ — J. H. GASKEL

Urologist

KENNETH D. LEGGE

Associates

LEON K. FARGO — FRANCIS W. GILLIS

Dentists

J. D. FUSCO

Assistants

J. J. FOLEY — W. INMAN

MEDICAL DIVISION

Physicians

MAURICE C. PINCOFFS

C. B. GAMBLE — H. RAYMOND PETERS
HARVEY G. BECK — GEORGE MCLEAN
THOMAS P. SPRUNT — J. SHELDON EASTLAND

L. A. M. KRAUSE

Associates

HUBERT C. KNAPP — WETHERBEE FORT
BARTUS T. BAGGOTT — JOHN E. LEGGE
THOMAS C. WOLFF — T. NELSON CAREY

Assistants

SOL SMITH — EARL L. CHAMBERS
S. A. TUMMINELLO — K. W. GOLLEY
J. HOWARD BURNS — J. M. MILLER

Gastro-Enterologist

JULIUS FRIEDENWALD

Associates

T. FREDERICK LEITZ — THEODORE H. MORRISON

Assistants

MAURICE FELDMAN — JOSEPH SINDLER

Pediatrician

EDGAR B. FRIEDENWALD

Associates

FREDERICK B. SMITH — THOMAS J. COONAN

Assistants

WILLIAM J. SCHMITZ — G. BOWERS MANSDORFER

WILLIAM M. SEABOLD

Neurologist and Psychiatrist

ANDREW C. GILLIS

Associates

MILFORD LEVY — PHILIP F. LERNER

HARRY GOLDSMITH

OBSTETRICAL DIVISION

Obstetricians

EDWARD P. SMITH

ABRAM S. SAMUELS — WILLIAM S. GARDNER
ERNEST S. EDLOW — THOMAS K. GALVIN

JOHN J. ERWIN

Associate

FRANK K. MORRIS

Assistant

WM. B. SMITH

GYNECOLOGICAL DIVISION

Consulting Gynecologist

WILLIAM S. GARDNER

Gynecologists

ABRAM S. SAMUELS

THOMAS K. GALVIN — EDWARD P. SMITH

GEORGE A. STRAUSS, JR.

Associate Gynecologists

J. J. ERWIN — ERNEST S. EDLOW

FRANK K. MORRIS

Assistant Gynecologist

HARRY L. GRANOFF

PATHOLOGICAL DIVISION

WALTER C. MERKEL — HUGH R. SPENCER

Clinical Pathologists

H. T. COLLENBERG

H. R. PETERS — CHARLES E. BRAMBLE, Ph.D.

Technicians

SISTER MARY CELESTE — ANNA WASSELL
ELEANOR BEHR — AUDREY AUTEN

X-RAY DEPARTMENT

Radiographer

ALBERTUS COTTON

Associate

HARRY L. ROGERS

Assistant

HARRY ARCHER MILLER

Technicians

SISTER M. KEVIN

ELIZABETH CROOK

MERCY HOSPITAL RESIDENT STAFF

Resident Surgeon

RAYMOND J. LIPIN, M.D.

First Assistant Resident Surgeon

W. LYNN GARLICK, A.B., M.D.

Resident Gynecologist

ROBERT W. STEVENS, B.S., M.D.

Assistant Resident Gynecologist

WILLIAM A. DODD, B.S., M.D.

Resident Obstetrician

C. H. DOELLER, A.B., M.D.

Second Assistant Resident Surgeons

WILLIAM C. DUNNIGAN, A.B., M.D.

JOHN F. SCHAEFER, B.S., M.D.

WILLIAM B. CULWELL, B.S., M.D.

Medical Resident

S. EDWIN MULLER, M.D.

Assistant Medical Resident

DONALD D. COOPER, A.B., M.D.

Resident in Pathology and Assistant Medical Resident

FREDERICK J. VOLLMER, B.S., M.D.

Resident Rhinologist

MAYNARD C. SMITH, B.S. M.D.

Internes

Harry McBrine Beck, B.A., M.D.
Richard W. Corbitt, A.B., M.D.
George Smith Grier, B.S, M.D.
William H. Kammer, Jr., A.B., M.D.
Howard F. Kinnamon, Jr., M.D.
Christopher J. Mendelis, B.S., M.D.
Philip J. Morrison, B.S., M.D.
Melvin F. Polek, B.S., M.D.
Thomas S. Sexton, A.B., M.D.
Joseph E. Schenthal, A.B., M.D.

DISPENSARY STAFF

Surgeons

Supervisor, Raymond F. Helfrich

I. O. Ridgely
H. F. Bongardt
J. W. Nelson
I. Ridgeway Trimble
Simon H. Brager
S. Demarco, Jr.
Eugene E. Covington
Richard T. Shackelford
Meyer H. Zuravin
Howard L. Zupnik
Daniel R. Robinson
Joseph V. Jerardi

Genito-Urinary Surgery

Supervisor, Kenneth D. Legge

L. K. Fargo
Francis W. Gillis

Orthopedists

Albertus Cotton
Harry L. Rogers
K. H. Maseritz
Jason H. Gaskel

Physicians

Supervisor, Maurice C. Pincoffs

Earl L. Chambers, Sol Smith } *Chiefs of Clinic*

Milton Stein
William H. Grenzer
Thomas G. Abbott
Louis F. Klimes
John W. Machen
William Helfrich

Cardiovascular Diseases

T. C. Wolff, *Chief of Clinic*
Harry Ashman

Diseases of Metabolism

J. Sheldon Eastland, *Chief of Clinic*
Louis Klimes

Gastroenterology

Supervisor, Julius Friedenwald

Maurice Feldman
Nathaniel Beck

Pediatrics

Edgar Friedenwald, *Chief of Clinic*

G. Bowers Mansdorfer
Jerome Fineman
George Bayley

Neurology and Psychiatry

Supervisor, ANDREW C. GILLIS

MILFORD LEVY — HARRY GOLDSMITH

PHILIP F. LERNER

Child Guidance Clinic

MIRIAM DUNN

Dermatology

Supervisor, FRANK A. ELLIS

WILLIAM D. WOLFE

Oncology

JAMES W. NELSON

Gynecology

ABRAM S. SAMUELS, *Chief of Clinic*

THOMAS K. GALVIN, *Assistant Chief of Clinic*

EDWARD P. SMITH — JOHN J. ERWIN

ERNEST S. EDLOW — FRANK K. MORRIS

H. L. GRANOFF — GEORGE A. STRAUSS, JR.

Obstetrics

EDWARD P. SMITH, *Chief of Clinic*

WILLIAM B. SMITH — ROBERT W. STEVENS

Esophagoscopy

WAITMAN F. ZINN

Diseases of Nose and Throat

WAITMAN F. ZINN

BENJAMIN S. RICH — THEODORE A. SCHWARTZ

Diseases of Eye and Ear

M. RASKIN — F. A. PACIENZA

J. V. JEPPI

Proctology

CHARLES F. BLAKE, *Supervisor*

EUGENE E. COVINGTON — SIMON H. BRAGER

Dentists

J. D. FUSCO — W. INMAN

Physiotherapy

LEON HANNAN, *Supervisor*

ALICE R. HANNAN, *Assistant*

Social Service Department

ELMER LAMBDEN

NORMAN FOXMAN — E. M. SEABOUR

MERCY HOSPITAL DISPENSARY REPORT

Year 1938

Department	*Old*	*New*	*Total*
Surgery	3,666	1,151	4,817
Medicine	2,159	647	2,806
Cardiac	280	43	323
Diabetic	296	21	317
Gynecology	715	305	1,020
Eye and Ear	902	412	1,314
Nose and Throat	905	601	1,506
Neurology	546	110	656
Pediatrics	326	237	563
Gastro-Intestinal	350	68	418
Dental	109	138	247
Rectal	124	55	179
Orthopedics	1,152	256	1,408
Skin	529	260	789
Genito-Urinary	1,605	292	1,897
Psychiatry	64	21	85
Tumor	88	17	105
Pre-Natal	78	114	192
Physio-Therapy	56	1,019	1,075
Total	13,950	5,767	19,717

OTHER CLINICAL FACILITIES

THE BALTIMORE CITY HOSPITALS

The clinical advantages of the University have been largely increased by the liberal decision of the Department of Public Welfare to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness of study, and the use made of it in medical teaching.

The Baltimore City Hospital consists of the following separate divisions:

The General Hospital, 400 beds, 60 bassinets.
The Hospital for Chronic Cases, 545 beds.
The Hospital for Tuberculosis, 280 beds.
The Psychopathic Hospital, 85 beds.
Infirmary (Home for Aged) 1053 beds.

STAFF OF BALTIMORE CITY HOSPITALS

PARKER J. MCMILLIN, *Superintendent*

Physician-in-Chief.....JOHN T. KING, JR., A.B., M.D.
Chief Consulting Surgeon.....ARTHUR M. SHIPLEY, M.D., Sc.D.

Surgeon-in-Chief.....Thomas B. Aycock, B.S., M.D.
Physician-in-Chief, Tuberculosis Hospital.....Harry M. Stein, M.D.
Physician-in-Chief, Psychopathic Hospital.....Esther L. Richards, M.D.
Obstetrician-in-Chief.....Louis H. Douglass, M.D.
Pediatrician-in-Chief.....T. Campbell Goodwin, A.B., M.D.
Pathologist-in-Chief.....Frank B. Kindell, A.B., M.D.
Dental Surgeon-in-Chief.....Lowell P. Henneberger, D.D.S.
Assistant Surgeon-in-Chief.....Otto C. Brantigan, M.D.
Visiting Surgeon.....James C. Owings, M.D.
Consultant in Traumatic Surgery.....Charles A. Reifschneider, M.D.
Consultant in General Surgery.....I. Ridgeway Trimble, M.D.
Consultant in Peripheral Vascular Diseases.....George H. Yeager, B.S., M.D.
Assistant Visiting Surgeons.....Samuel McLanahan, Jr., A.B., M.D.; Harry C. Hull, M.D.; Luther E. Little, M.D.
Visiting Physician in Tuberculosis.....Lawrence M. Serra, M.D.
Assistant Visiting Physician in Tuberculosis.....Harry V. Langeluttig, A.B., M.D.
Assistant Visiting Psychiatrist.....Thomas A. C. Rennie, M.D.
Visiting Obstetrician.....J. G. Morris Reese, M.D.
Assistant Visiting Obstetricians.....John M. Haws, M.D.; Marius P. Johnson, A.B., M.D.; John E. Savage, B.S., M.D.; H. B. McNally, B.S., M.D.
Visiting Pediatrician.....B. Matthew Debuskey, M.D.
Assistant Visiting Pediatrician.....William M. Seabold, A.B., M.D.
Visiting Gynecologist.....J. Mason Hundley, Jr., M.A., M.D.
Assistant Visiting Gynecologists.....John T. Hibbitts, M.D.; John C. Dumler, B.S., M.D.; Beverly Compton, M.D.; Bernard C. Brack, M.D.
Assistant Chief Physician.....C. Holmes Boyd, M.D
Visiting Physicians.....Richard France, M.D.; John W. Parsons, M.D.; Louis M. Krause, M.D.
Visiting Cardiologist.....Raymond Hussey, M.A., M.D.
Assistant Visiting Ophthalmologist.....Frank B. Walsh, M.D.
Visiting Orthopedic Surgeon.....Allen F. Voshell, A.B., M.D.
Assistant Visiting Orthopedic Surgeons.....Henry F. Ullrich, M.D., Sc.D.; H. Alvan Jones, M.D.
Assistant Visiting Laryngologists.....Thomas R. O'Rourk, M.D.; John Bordley, M.D.
Visiting Urologist.....W. Houston Toulson, A.B., M.Sc., M.D.
Assistant Visiting Urologists.....Hugh Jewett, M.D.; Harry S. Shelley, B.S., M.D.
Chief Radiologist.....John W. Pierson, M.D.
Visiting Neurological Surgeon.....Charles Bagley, Jr., M.A., M.D.
Assistant Visiting Neurological Surgeon.....Richard G. Coblentz, M.A., M.D.
Visiting Neurologists.....Frank R. Ford, M.D.; O. R. Langworthy, M.D.

Visiting Proctologist.....Monte Edwards, M.D.
Visiting Oncologist.....Grant E. Ward, A.B., M.D.
Assistant Visiting Oncologist.....Murray M. Copeland, M.D.
Assistant Visiting Otologist.....J. J. Belemer, M.D.
Visiting Dermatologist.....Isaac R. Pels, M.D.
Visiting Dental Surgeon.....H. Glenn Waring, D.D.S.
Assistant Visiting Dental Surgeons.....Lawrence W. Bimestefer, D.D.S.; Joseph B. Berke, D.D.S.; B. W. Miksinski, D.D.S.; Henry H. Hall, D.D.S.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Dickeyville. The site is just within the northwestern city limits and of easy access from the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A hospital unit, complete in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 100 beds—endowed, and city and state supported.

The Orthopaedic Dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The Physical Therapy Department is very well equipped with modern apparatus and trained personnel. Occupational therapy has been fully established and developed under trained technicians.

STAFF

Surgeon-in-Chief and Medical Director.....Allen Fiske Voshell, A.B., M.D.
Attending Orthopaedic Surgeon.....Albertus Cotton, A.M., M.D.
Associate Orthopaedic Surgeons.....Moses Gellman, B.S., M.D.; Harry L. Rogers, M.D.
Resident Orthopaedic Surgeon.....F. W. Jones, M.D.
Consulting Surgeons.....J. M. T. Finney, A.B., M.D., D.S.M., F.R.C.S., (Eng., Ire.) Hon.; Arthur M. Shipley, M.D., Sc.D.
Consulting Plastic Surgeons.....John Staige Davis, B.Sc., M.D.; Edward H. Kitlowski, M.D.
Consulting Neurological Surgeon.....Charles Bagley, Jr., M.A., M.D.
Consulting Oculist.....Harry Friedenwald, A.B., M.D., D.H.L., D.Sc.
Oculist.....F. A. Pacienza, M.D.
Consulting Aurist and Laryngologist.....Edward A. Looper, M.D., D.Oph.
Aurist and Laryngologist.....Franklin B. Anderson, M.D.
Consulting Dentist.....Harry B. McCarthy, D.D.S.
Dentist.....M. E. Coberth, D.D.S.
Consulting Physicians.....Thomas R. Brown, A.B., M.D.; Lewellys F. Barker, A.B., M.D.

Pediatrist.....Benjamin Tappan, A.B., M.D.
Dermatologists.....Harry M. Robinson, M.D.; Leon Ginsberg, M.D.
Consulting Pathologists.....Sydney M. Cone, A.B., M.D.; Hugh R. Spencer, M.D.
Consulting Neurologist.....Irving J. Spear, M.D.
Neurologist.....R. V. Seliger, M.D.
Anaesthetist.....Miss Marie Bareford, R.N.
Roentgenologist.....Albertus Cotton, A.M., M.D.
Acting Superintendent.....Miss Maude M. Gardner, R.N.
Dispensary and Social Service Nurse.....Miss Mabel S. Brown, R.N.
Technicians: Physical Therapy and X-Ray.....Miss Jane Ewing, P. T., Reg.; Mrs. Georgiana Wisong; Miss Jane Anderson, R.N.
Occupational Therapist.....Miss Alice M. Clement, O. T., Reg.
Instructor in Grammar School.....Mrs. Laura Siemon

MEDICAL LIBRARIES

The Medical Library of the University of Maryland, founded in 1813 by the purchase of the collection of Dr. John Crawford, now numbers 19,000 volumes and several thousand pamphlets and reprints. Three hundred of the leading medical journals, both foreign and domestic, are regularly received. The library is housed in Davidge Hall, a comfortable and commodious building in close proximity to classrooms and laboratories, and is open daily for the use of members of the faculty, the student body and the profession generally. Libraries pertaining to particular phases of medicine are maintained by several departments in the Medical School.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library are open to students of the Medical School without charge. Other libraries of Baltimore are the Peabody Library and the Enoch Pratt Free Library.

ORGANIZATION OF THE CURRICULUM

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments.

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.

5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF GROSS ANATOMY

Eduard Uhlenhuth.....Professor of Anatomy
Frank H. J. Figge.....Associate Professor of Gross Anatomy
James C. Lipsett.....Assistant Professor of Gross Anatomy
Eugene E. Covington.....Instructor in Gross Anatomy
Otto C. Brantigan.....Instructor in Gross Anatomy
Harry S. Shelley.....Instructor in Gross Anatomy

Course 101 f. Freshman Gross Anatomy. Total number of hours 350. Four hours lectures and conferences and eighteen hours laboratory (dissection of the human subject) per week during the first semester. E. Uhlenhuth, Frank H. Figge and James C. Lipsett.

Course 201 f. Advanced Anatomy (elective course). Total number of hours 64. Selected problems in gross anatomy. This course is intended primarily to offer to the sophomore student an opportunity of extending the knowledge secured in the freshman course. E. Uhlenhuth, Frank H. J. Figge, James C. Lipsett and O. C. Brantigan.

In addition to the above courses, facilities for special anatomical problems are offered to the more advanced student and physician.

DEPARTMENT OF HISTOLOGY AND EMBRYOLOGY

CARL L. DAVIS.....Professor of Anatomy
O. G. HARNE.....Associate Professor of Histology
JOHN F. LUTZ.....Assistant Professor of Histology
JOSEPH POKORNY.....Instructor in Histology
MARTIN J. HANNA.....Instructor in Histology

First Year—150 hours. The course in histology is divided equally between the study of the fundamental tissues and that of organs. Throughout the entire course the embryology of the part being studied precedes the study of the fully developed tissue. Thus embryology becomes a correlated part of the whole subject of microscopic anatomy and not an independent subject.

Each student is furnished a set of histological slides, previously prepared in our own laboratory, thus insuring a uniform and satisfactory quality of material for study and permitting the time of the student to be expended in the study of material rather than in the technic of its preparation. The object of the course is to present the evidence of function as shown by the structure of tissues and organs. Drs. Davis, Lutz and Harne.

An optional laboratory course is offered. This supplements the required course giving laboratory experience which can not be incorporated in the former. No added charge is made for the course.

NEURO-ANATOMY

First Year—100 hours. Neuro-anatomy embraces a study of the fundamental structure of the central nervous system as applied to its function. An abundance of material permits of individual dissection of the human brain. A series of appropriately stained sections of the human brain stem is furnished each student for the microscopic study of the internal structure of the nervous system. Dr. Davis and Dr. Lutz.

For a description of the graduate courses offered by the members of the staff, consult the catalog of the Graduate School.

DEPARTMENT OF PHYSIOLOGY

WILLIAM R. AMBERSON.....Professor of Physiology
DIETRICH CONRAD SMITH.....Associate Professor of Physiology
ROBERT H. OSTER.....Assistant Professor of Physiology
EDWIN P. HIATT.....Instructor in Physiology
J. VICTOR MONKE.....Weaver Fellow in Physiology

Four lectures, two conferences and two laboratory periods a week September to January inclusive. The fundamental concepts of physiology are presented with special reference to mammalian problems. Total number of hours 240.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL.....Professor of Bacteriology
JAMES G. MCALPINE.....Associate Professor of Bacteriology
J. A. F. PFEIFFER.....Instructor in Bacteriology
HENRY F. BUETTNER.....Instructor in Bacteriology
H. EDMUND LEVIN.....Instructor in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of of the second year during the first semester. This includes the methods of preparation and sterilization of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second-year class throughout the second semester, and practical experiments are carried out by the class in laboratory sessions.

Total number of hours: Bacteriology 120.
Immunology 72.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

H. BOYD WYLIE.....Professor of Biological Chemistry
EMIL G. SCHMIDT.....Associate Professor of Biological Chemistry
FRANK N. OGDEN.....Associate in Biological Chemistry
DOROTHY E. SCHMALZER.....Assistant in Biological Chemistry

This course is designed to present the fundamental principles of biological chemistry and to indicate their applications to the clinical aspects of medicine. The phenomena of living matter and its chief ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is given in routine biochemical methods of investigation. Total number of hours 212.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PHARMACOLOGY

JOHN C. KRANTZ, JR.....Professor of Pharmacology
C. JELLEFF CARR.....Associate Professor of Pharmacology

WILLIAM ELLSWORTH EVANS.....Assistant Professor of Pharmacology
RUTH MUSSER.....Instructor in Pharmacology
MARIUS P. JOHNSON.....Assistant in Pharmacology
WILLIAM G. HARNE.....Demonstrator in Pharmacology
FREDERICK K. BELL.....U. S. Pharmacopoeia Fellow
FRANCES F. BECK.....International Cancer Foundation Fellow
SYLVAN FORMAN.....Isaac E. Emerson Fellow in Pharmacology
FRED W. ELLIS.....Fellow in Pharmacology
NORMAN W. PINSCHMIDT.....Fellow National Formulary Committee

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Total number of hours 176.

For a description of the graduate courses offered by the members of the staff, consult the catalog of the Graduate School.

DEPARTMENT OF PATHOLOGY

HUGH R. SPENCER.....Professor of Pathology
ROBERT B. WRIGHT.....Assistant Professor of Pathology
C. GARDNER WARNER.....Assistant Professor of Pathology
WALTER C. MERKEL.....Assistant Professor of Pathology
HOWARD J. MALDEIS.....Associate in Pathology
ALBERT E. GOLDSTEIN.....Associate in Pathology
FRANK B. KINDELL.....Associate in Pathology
WM. S. LOVE, JR.....Instructor in Pathology
LEON FREEDOM.....Instructor in Pathology
BENJAMIN ABESHOUSE.....Instructor in Pathology
WILLIAM R. GERAGHTY.....Instructor in Pathology
MILTON S. SACKS.....Instructor in Pathology
D. JAMES GREINER.....Instructor in Pathology
CONRAD B. ACTON.....Assistant in Pathology
JOHN E. SAVAGE.....Assistant in Pathology
HARRY C. HULL.....Assistant in Pathology
ROLAND E. BIEREN.....Assistant in Pathology
JOHN L. ATKINS.....Weaver Fellow in Pathology

Courses of instruction in pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible so that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

GENERAL PATHOLOGY. (*Second Year.*) This course includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate

and protein metabolism, disturbances in pigment metabolism, inflammation and tumors.

Applied Pathology, Including Gross Morbid Anatomy and Morbid Physiology. (*Third Year.*) In this course the special relation of lesions to clinical symptoms and signs is emphasized.

In the laboratory the class is divided into groups for the study of classified autopsy material.

Autopsies. (*Third Year.*) Students in small groups attend autopsies at the morgues of the University Hospital and Baltimore City Hospitals. They are required to assist at autopsies and prepare protocols.

Clinical Pathological Conference. (*Fourth Year.*) In collaboration with the Department of Medicine, material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

Advanced Work in Pathology. Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

Second Year—Total number of hours	168
Third Year—Total number of hours	160
Fourth Year—Clinical Pathological Conference	30

DEPARTMENT OF MEDICINE

Maurice C. Pincoffs	Professor of Medicine
Jos. E. Gichner	Professor of Clinical Medicine and Physical Therapeutics
G. Carroll Lockard	Professor of Clinical Medicine
Harvey G. Beck	Professor of Clinical Medicine
Harry M. Stein	Professor of Clinical Medicine
Thomas R. Sprunt	Professor of Clinical Medicine
Paul W. Clough	Associate Professor of Medicine
Sydney R. Miller	Associate Professor of Medicine
Walter A. Baetjer	Associate Professor of Medicine
Wm. S. Love, Jr.	Associate Professor of Medicine
Raymond Hussey	Associate Professor of Medicine
L. A. M. Krause	Associate Professor of Medicine
H. R. Peters	Associate Professor of Medicine
T. Nelson Carey	Associate Professor of Medicine
William H. Smith	Associate Professor of Clinical Medicine
H. J. Maldeis	Associate Professor of Medical Jurisprudence
George McLean	Assistant Professor of Medicine
John E. Legge	Assistant Professor of Medicine
Thomas C. Wolff	Assistant Professor of Medicine
H. M. Bubert	Assistant Professor of Medicine
J. S. Eastland	Associate in Medicine
Wetherbee Fort	Associate in Medicine
Frank J. Geraghty	Associate in Medicine
L. P. Gundry	Associate in Medicine
E. H. Tonolla	Associate in Medicine
Samuel T. Helms	Instructor in Medicine

Earl L. Chambers ..... Instructor in Medicine
David Tenner ..... Instructor in Medicine
R. B. Mitchell, Jr. ..... Instructor in Medicine
Samuel Legum ..... Instructor in Medicine
Harry V. Langeluttig ..... Instructor in Medicine
Robert W. Garis ..... Instructor in Medicine
M. S. Shiling ..... Instructor in Medicine
Sol Smith ..... Instructor in Medicine
H. Edmund Levin ..... Instructor in Medicine
Robert A. Reiter ..... Instructor in Medicine
W. Grafton Hersperger ..... Instructor in Medicine
Meyer W. Jacobson ..... Instructor in Medicine
Conrad Acton ..... Instructor in Medicine
Hugh G. Whitehead ..... Instructor in Medicine
Philip D. Flynn ..... Instructor in Medicine
W. H. Triplett ..... Assistant in Medicine
Morris Fine ..... Assistant in Medicine
William H. Grenzer ..... Assistant in Medicine
George Silverton ..... Assistant in Medicine
Lawrence Katzenstein ..... Assistant in Medicine
Leon Ashman ..... Assistant in Medicine
Harry M. Robinson, Jr. ..... Assistant in Medicine
Nathaniel Beck ..... Assistant in Medicine
Joseph M. Blumberg ..... Assistant in Medicine
John A. Myers ..... Assistant in Medicine
Kurt Levy ..... Assistant in Medicine
Paul E. Carliner ..... Assistant in Medicine
Edward S. Kallins ..... Assistant in Medicine
Samuel Snyder ..... Assistant in Medicine
Edward F. Cotter ..... Assistant in Medicine
S. Edwin Muller ..... Assistant in Medicine
Milton S. Sacks ..... Hitchcock Fellow in Medicine
William K. Waller ..... Clinical Fellow in Medicine

Lecturers

E. B. Freeman ..... Lecturer in Medicine
Charles R. Goldsborough ..... Lecturer in Medicine
W. N. Bispham, Col., M. C., U. S. A. (ret.) ..... Lecturer in Medicine

GENERAL OUTLINE

Second Year

Introduction to clinical medicine.

(a) Introductory physical diagnosis.
(1 hour a week, first semester; 2 hours a week, second semester.)

(b) Medical clinics.
(1 hour a week, second semester.)

Third Year

I. The methods of examination (13 hours a week).
   (a) History taking.
   (b) Physical diagnosis.
   (c) Clinical pathology.

These subjects are taught and practiced in the hospital out-patient department and in the clinical laboratory.

II. The principles of medicine (200 hours).

(a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics, psychiatry and preventive medicine.

III. The principles of therapeutics (15 hours).

Lectures and demonstrations.

FOURTH YEAR

The practice of medicine.

I. Clinical clerkship on the medical wards.

(26 hours a week for ten weeks.)

(a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.

(b) Ward classes in general medicine, the medical specialties, and therapeutics.

II. Clinics in general medicine and the medical specialties.

(6 hours a week.)

III. Dispensary work in the medical specialties.

IV. Clinical pathological conferences (1 hour a week).

MEDICAL DISPENSARY WORK

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two hours daily for ten weeks in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

PHYSICAL DIAGNOSIS

Second Year. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

Third Year. The class is divided into small groups, and each section receives instruction for two hours daily for ten weeks. This course is given at the City Hospitals. The large clinical material there is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

A course of lectures (1 hour a week) on physical diagnosis supplements the practical work in this subject.

THERAPEUTICS

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. One hour a week. Dr. Lockard.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Students attend therapeutic ward rounds once a week throughout their medical trimester.

Tuberculosis

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

Cardiology

During the fourth year an elective course in cardiology is offered at the Mercy Hospital. The course occupies one and one-half hours weekly. Physical diagnosis, electrocardiography and the therapeutic management of cardiac cases are stressed.

Syphilis

Third Year. During the third year the subject of syphilis is dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis is offered in the dispensary.

CLINICAL PATHOLOGY

Raymond Hussey
Associate Professor of Medicine and Head of Department of Clinical Pathology
H. R. Peters.....Associate Professor of Medicine
Samuel T. Helms.....Instructor in Medicine
Hugh G. Whitehead.....Assistant in Medicine
Joseph M. Blumberg.....Assistant in Medicine
John A. Myers.....Assistant in Medicine
Milton S. Sacks.....Hitchcock Fellow in Medicine
William K. Waller.....Clinical Fellow in Medicine

During the third year the student is thoroughly drilled in the technic of the usual clinical laboratory work, so that he is able to perform all routine examinations which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student has his own microscope and is provided with blood counters and hemoglobinometer for his exclusive use, and every two students are equipped with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

GASTRO-ENTEROLOGY

THEODORE H. MORRISON.....Clinical Professor of Gastro-Enterology
MAURICE FELDMAN.....Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN.....Assistant Professor of Gastro-Enterology
SAMUEL MORRISON.....Assistant Professor of Gastro-Enterology
JOSEPH SINDLER.....Associate in Gastro-Enterology
Z. VANCE HOOPER.....Associate in Gastro-Enterology
M. S. KOPPELMAN.....Instructor in Gastro-Enterology
ERNEST LEVI.....Instructor in Gastro-Enterology
ALBERT J. SHOCHAT.....Instructor in Gastro-Enterology
JOHN A. MYERS.....Assistant in Gastro-Enterology
WILLIAM GREENFELD.....Assistant in Gastro-Enterology
NATHANIEL M. BECK.....Assistant in Gastro-Enterology

Third Year. A series of six lectures is given on the diseases of the digestive tract.

Fourth Year. Clinics and demonstrations to the class for one hour a week. Dispensary instruction to small groups throughout the entire session. Practical instruction is given in the use of modern methods of study of the diseases of the gastro-intestinal tract.

PSYCHIATRY

ROSS MCC. CHAPMAN..... Professor of Psychiatry
RALPH P. TRUITT.....Associate Professor of Psychiatry
LAWRENCE F. WOOLLEY.....Associate Professor of Psychiatry
HARRY GOLDSMITH.....Assistant Professor of Psychiatry
H. W. NEWELL.....Assistant Professor of Psychiatry
HARRY M. MURDOCK.....Assistant Professor of Psychiatry
A. RUSSELL ANDERSON.....Instructor in Psychiatry
B. FRANK VOGEL.....Fellow in Psychiatry

First Year. The student attends six lectures dealing with the development and function of the normal personality.

Second Year. The student attends fourteen lectures dealing with psychopathology.

Third Year. Psychopathology continued, six lectures; reaction types, twelve hours, lectures and demonstrations; the psychoses, six hours, lectures and demonstrations; history-taking and actual study of cases, outpatient clinic, thirty hours.

Fourth Year. The neuroses, psychoneuroses, psychoses, lectures and demonstrations, ten hours. In this year the class is divided into sections for clinical conferences on selected cases.

PEDIATRICS

C. Loring Joslin ..... Professor of Pediatrics
Edgar B. Friedenwald ..... Professor of Clinical Pediatrics
T. Campbell Goodwin ..... Associate Professor of Pediatrics
John H. Traband ..... Assistant Professor of Pediatrics
Albert Jaffe ..... Assistant Professor of Pediatrics
A. H. Finkelstein ..... Assistant Professor of Pediatrics
Frederick B. Smith ..... Assistant Professor of Pediatrics
J. Edmund Bradley ..... Assistant Professor of Pediatrics
William J. Todd ..... Associate in Pediatrics
Clewell Howell ..... Associate in Pediatrics
Samuel S. Glick ..... Associate in Pediatrics
F. Stratner Orem ..... Associate in Pediatrics
William M. Seabold ..... Associate in Pediatrics
M. Paul Byerly ..... Instructor in Pediatrics
G. Bowers Mansdorfer ..... Instructor in Pediatrics
Thomas J. Coonan ..... Instructor in Pediatrics
Jerome Fineman ..... Instructor in Pediatrics
Thomas A. Christensen ..... Instructor in Pediatrics
B. Matthew Sebuskey ..... Instructor in Pediatrics
W. J. Schmitz ..... Assistant in Pediatrics
Israel P. Meranski ..... Assistant in Pediatrics
H. Whitney Wheaton ..... Assistant in Pediatrics
Lauriston L. Keown ..... Assistant in Pediatrics
Abraham Hurwitz ..... Assistant in Pediatrics
Israel Rosen ..... Assistant in Pediatrics
Mabel G. Wilkin ..... Clinical Fellow in Pediatrics

Third Year. A. Lectures on infant feeding and the fundamentals of diseases of infants and children. (15 hours.)

B. Lectures on contagious diseases in conjunction with the Department of Hygiene and Preventive Medicine. (14 hours.)

C. A special course in physical diagnosis is given at City Hospitals. (20 hours.)

D. Clinical conferences demonstrating diseases of the newly-born. (6 hours.)

Fourth Year. A. Amphitheatre Clinic at which patients are shown to demonstrate the chief features of diseases discussed. (30 hours.)

B. Conferences and demonstrations are given in problems concerning diagnosis, care, treatment and clinical pathology of diseases of infants and children; also in the preparation of theses on assigned pediatric subjects. (30 hours.)

C. Clinical clerkship on the pediatric wards. This includes experience in the taking of histories, making physical examinations and doing routine laboratory work, and in following up of the patient's progress, all under the supervision of members of the visiting staff of the Department of Pediatrics. (140 hours.)

D. Instruction in the pediatric clinic of the out-patient department of the University Hospital. This consists of 1½ hours daily for five weeks—30 minutes each day being devoted to clinical demonstration of some interesting case by a member of the staff; one hour daily to the taking of histories and the making of a physical examination under supervision of one of the staff instructors. (45 hours.)

Total hours devoted to the teaching of pediatrics: 300.

NEUROLOGY

Irving J. Spear ..... Professor of Neurology
Andrew C. Gillis ..... Professor of Neurology
G. M. Settle ..... Associate Professor of Neurology and Clinical Medicine
Milford Levy ..... Associate Professor of Neurology
Leon Freedom ..... Associate Professor of Neurology
Benjamin Pushkin ..... Assistant Professor of Neurology
Philip F. Lerner ..... Instructor in Neurology
Bernhard Badt ..... Instructor in Neurology
William L. Fearing ..... Instructor in Neurology
Charles E. Balfour ..... Assistant in Neurology
F. J. Warner ..... Assistant in Neurology

Second Year. Fifteen lectures correlating the anatomy and physiology of the nervous system with clinical neurology.

Third Year. Ten lecture-demonstrations are given in which the major types of diseases of the nervous system are presented. A short course is also given at the Baltimore City Hospitals, consisting of six periods of two hours each, in which the students in small groups carry out complete neurologic examinations of selected cases which illustrate the chief neurologic syndromes.

Fourth Year. Clinical conference one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All patients presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the patients before the class. The patients are usually assigned one or two weeks before they are pre-

sented, and each student in the class must prepare one or more cases during the year.

Ward Class Instruction. In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the patients in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their early and late manifestations.

HYGIENE AND PREVENTIVE MEDICINE

HUNTINGTON WILLIAMS.....Professor of Hygiene and Public Health
WILLIAM H. F. WARTHEN.....Associate in Hygiene and Public Health
MYRON G. TULL.....Instructor in Hygiene and Public Health

Third Year. One hour lecture to the whole class each Monday from September to May. Basic instruction is given in the clinical and public health aspects of the communicable diseases. The lectures are under the auspices of the Department of Medicine and are given by staff members in that department, including physicians representing Pediatrics, and Hygiene and Preventive Medicine.

Fourth Year. Two hour instruction periods for the entire class, in groups of ten to fifteen students on six Wednesday afternoons. These sessions enable the students themselves to prepare birth and death certificates, to vaccinate against smallpox and to conduct other practical public health procedures. In addition there are four Wednesday afternoon field inspection trips for each third of the class. These trips, under guidance of full time public health workers, include visits to (1) city water filtration plant, (2) rural dairy farm, (3) milk pasteurization plant, ice cream plant and bakery and (4) industrial plant which has an active program of hygiene. Elective case work in association with the Western Health District.

The course deals with the fundamentals of public health and supplements the work in the third year. The major emphasis in both years is on the practice of preventive medicine and the relation of prevention to diagnosis and treatment. The entire class, in small groups, receives practical instruction at Sydenham Hospital, the one-hundred bed communicable disease hospital of the Baltimore City Health Department.

MEDICAL JURISPRUDENCE

HOWARD J. MALDEIS.....Associate Professor of Medical Jurisprudence
Baltimore City Post Mortem Physician

Third Year. One hour each week for three weeks.

This course embraces a summary of some of the following: Proceedings in criminal and civil prosecution, medical evidence and testimony, identity and its general relations, sexual abnormalities, personal identity, impotence and sterility, rape, criminal abortions, signs of death, wounds in their medico-legal relations, death—natural and homocidal, malpractice, insanity, and medico-legal autopsies.

DEPARTMENT OF SURGERY

ARTHUR M. SHIPLEY ..... Professor of Surgery
WALTER D. WISE ..... Professor of Surgery
PAGE EDMUNDS ..... Professor of Traumatic Surgery
CHARLES BAGLEY, JR. ..... Professor of Neurological Surgery
ELLIOTT H. HUTCHINS ..... Professor of Clinical Surgery
CHARLES REID EDWARDS ..... Professor of Clinical Surgery
F. L. JENNINGS ..... Professor of Clinical Surgery
ROBERT P. BAY ..... Professor of Oral Surgery
THOMAS B. AYCOCK ..... Clinical Professor of Surgery
THOMAS R. CHAMBERS ..... Associate Professor of Surgery
R. W. LOCHER ..... Associate Professor of Clinical Surgery
EDWARD S. JOHNSON ..... Associate Professor of Surgery
D. J. PESSAGNO ..... Associate Professor of Surgery
CHARLES A. REIFSCHNEIDER ..... Associate Professor of Traumatic Surgery
MONTE EDWARDS ..... Associate Professor of Surgery
N. CLYDE MARVEL ..... Associate Professor of Surgery
RICHARD G. COBLENTZ ..... Associate Professor of Neurological Surgery
GRANT E. WARD ..... Associate Professor of Surgery
CYRUS F. HORINE ..... Associate Professor of Surgery
GEORGE H. YEAGER ..... Assistant Professor of Surgery
H. F. BONGARDT ..... Assistant Professor of Surgery
I. O. RIDGLEY ..... Associate in Surgery
C. W. PEAKE ..... Associate in Surgery
HENRY F. ULLRICH ..... Associate in Surgery
H. ALVAN JONES ..... Associate in Surgery
WILLIAM R. JOHNSON ..... Instructor in Surgery
E. M. HANRAHAN ..... Instructor in Surgery
S. DEMARCO ..... Instructor in Surgery
KARL J. STEINMUELLER ..... Instructor in Surgery
LUTHER E. LITTLE ..... Instructor in Surgery
J. FRANK HEWITT ..... Instructor in Surgery
SIMON H. BRAGER ..... Instructor in Surgery
J. W. NELSON ..... Instructor in Surgery
I. RIDGEWAY TRIMBLE ..... Instructor in Surgery
RICHARD T. SHACKELFORD ..... Instructor in Surgery
RAYMOND F. HELFRICH ..... Instructor in Surgery
HARRY C. HULL ..... Instructor in Surgery
WILLIAM R. GERAGHTY ..... Assistant in Surgery
HOWARD B. MCELWAIN ..... Assistant in Surgery
A. V. BUCHNESS ..... Assistant in Surgery
T. J. TOUHEY ..... Assistant in Surgery
CLYDE F. KARNS ..... Assistant in Surgery

Samuel H. Culver ..... Assistant in Surgery
Albert R. Wilkerson ..... Assistant in Surgery
J. H. Wilkerson ..... Assistant in Surgery
L. T. Chance ..... Assistant in Surgery
Samuel McLanahan, Jr. ..... Assistant in Surgery
W. Allen Deckert, Jr. ..... Assistant in Surgery
Samuel E. Proctor ..... Assistant in Surgery
George Govatos ..... Assistant in Surgery
Dwight Currie ..... Assistant in Surgery
Robert F. Healy ..... Assistant in Surgery
Herbert M. Foster ..... Assistant in Surgery
Otto C. Brantigan ..... Assistant in Surgery
Daniel R. Robinson ..... Assistant in Surgery
Robert F. Chenowith ..... Assistant in Surgery
Joseph V. Jerardi ..... Assistant in Surgery
Thurston R. Adams ..... Assistant in Surgery

The teaching is done in the anatomical laboratory, operative surgery laboratory, the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

Instruction is given by means of lectures, laboratory work, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year

Topographic and Surgical Anatomy. The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Didactic Lectures. Two hours a week for one semester, augmented by demonstrations with specimens, charts and cross sections. Dr. Monte Edwards.

Laboratory. Five hours a week for 16 weeks. Dr. Monte Edwards assisted by Drs. Hull, Jones, Brantigan and Adams.

Principles of Surgery. This course includes history-taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressing, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage, shock and tumors. Lectures and conferences, two hours per week for one semester, to the entire class. Dr. Aycock.

Third Year

General and Regional Surgery. Lectures, recitations and clinics on the principles of surgery and general surgery are given three hours a week to the entire class. Dr. C. R. Edwards.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the dead-house of the Baltimore City Hospitals. Drs. Aycock, Reifschneider, Toulson and Hull.

Operative Surgery. Two courses are given in Operative Surgery under the supervision of Dr. Yeager assisted by Drs. Peake, Karns, Govatos, Ullrich, Brager, Culver, Deckert, Foster, Currie, Healy, Brantigan, Robinson, Chenowith and Jerardi. The class is divided into sections and each section is given practical and individual work under the supervision of the instructors.

Fractures and Dislocations. This course consists of instruction in the various forms of fractures, dislocations and their treatment. There is a regular schedule of didactic lectures, which is supplemented by practical demonstrations in diagnosis and treatment.

Surgical Dispensary. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical patients in the University and in the Mercy Hospitals. Mercy Hospital—Dr. Helfrich assisted by the entire dispensary staff. University Hospital—Dr. Yeager assisted by the entire dispensary staff.

Fourth Year

Clinics. A weekly clinic is given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. Wise. University Hospital—Dr. Shipley.

Surgical Pathology. A weekly exercise of one hour at Mercy Hospital for one semester at which specimens from the operating room and museum are studied in the gross and microscopically in relation to the case history. Dr. Pessagno.

Traumatic Surgery. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

Clinical Clerkship. The personal study of assigned hospital patients, under supervision of the staffs of the University and Mercy Hospitals, history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

Ward Classes. Ward class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Wise, Hutchins, Jennings, Pessagno and Marvel. University Hospital—Drs. Shipley, Edmunds, Edwards and Aycock.

ANAESTHESIA

S. Griffith Davis.....Professor of Anaesthesia
E. Hollister Davis.....Assistant in Anaesthesia
Mary J. O'Brien.....Anaesthetist
Ruth Elliott.....Anaesthetist

Third Year

Lectures on the general physiology of anaesthesia, with consideration of special physiology of each anaesthetic agent. Methods of induction and administration of anaesthesia. Factors influencing the selection of the anaesthetic and types of anaesthetic agents. Preparation and care of the anaesthetized patient.

The lectures are correlated with practical demonstrations during operative clinics at the City Hospitals.

Fourth Year

During operative clinics in both surgery and gynecology each student will be given practical instruction in the administration of anaesthetics and will be required to record such changes as take place in blood pressure, pulse and respiration.

DERMATOLOGY

Harry M. Robinson.....Professor of Dermatology
John R. Abercrombie.....Associate in Dermatology
Francis Ellis.....Associate in Dermatology
Harold M. Goodman.....Associate in Dermatology
Arthur C. Monninger.....Instructor in Dermatology
Harry M. Robinson, Jr.....Instructor in Dermatology
Joseph C. Bernstein.....Instructor in Dermatology
Rollin C. Hudson.....Assistant in Dermatology
Thomas E. Roach.....Assistant in Dermatology
Jeannette R. Heghinian.....Assistant in Dermatology

A weekly clinic is given at University and Mercy Hospitals throughout the year. This course consists of demonstrations of the common diseases of the skin in addition to a number of lectures on the general principles of dermatology. Drs. Robinson and Ellis.

Dispensary instruction in the diagnosis and treatment of skin diseases is given at the University Hospital by Dr. Robinson and dispensary staff; at Mercy Hospital by Dr. Ellis and dispensary staff.

ORTHOPAEDIC SURGERY

ALLEN FISKE VOSHELL.....Professor of Orthopaedic Surgery
ALBERTUS COTTON.....Professor of Orthopaedic Surgery
COMPTON RIELY.....Clinical Professor of Orthopaedic Surgery
MOSES GELLMAN.....Associate Professor of Orthopaedic Surgery
HARRY L. ROGERS.....Associate Professor of Orthopaedic Surgery
H. ALVAN JONES.....Associate in Orthopaedic Surgery
HENRY F. ULLRICH.....Associate in Orthopaedic Surgery

In this course didactic, clinical, bedside and out-patient instruction is given. This instruction is provided in the University Hospital Amphitheatre, Mercy Hospital and Dispensary, Kernan Hospital and Industrial School for Crippled Children at Dickeyville and in the Dispensary and wards of the University Hospital and Baltimore City Hospitals.

Lectures or clinics are held once a week at each of the hospitals named. In addition, a weekly bedside clinic is held for small sections of the class at Dickeyville and Mercy Hospital. Daily teaching in the Dispensary is stressed.

The course covers instruction in the special methods of examination, pathology, diagnosis and treatment in this specialty.

Brief outlines and demonstrations are also given of the apparatus employed in physiotherapy, muscle training and corrective gymnastics.

ROENTGENOLOGY

HENRY J. WALTON.....Professor of Roentgenology
ALBERTUS COTTON.....Professor of Roentgenology
WALTER L. KILBY.....Assistant Professor of Roentgenology
EUGENE L. FLIPPIN.....Associate in Roentgenology

During the academic year small groups of the fourth year class are given weekly instruction in the diagnostic and therapeutic uses of the Roentgen rays. An effort is made to familiarize the student with the indications for and limitations of Roentgen ray examinations. The history, physics and practical application of Roentgen rays are alluded to but not stressed. Conferences are held with the various departments during the school year which are also open to members of the fourth year class.

DISEASES OF THE NOSE AND THROAT

EDWARD A. LOOPER.....Professor of Diseases of the Nose and Throat
WAITMAN F. ZINN.....Clinical Professor of Diseases of the Nose and Throat
FRANKLIN B. ANDERSON.....Associate Professor of Diseases of the Nose and Throat
W. RAYMOND MCKENZIE.....Associate in Diseases of the Nose and Throat
THOMAS R. O'ROURK.....Associate in Diseases of the Nose and Throat
CLEO D. STILES.....Assistant in Diseases of the Nose and Throat

Third Year. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly for seven weeks by Dr. Looper.

Fourth Year. Dispensary instruction one and one-half hours daily, to small sections at the University and the Mercy Hospitals. The student is given opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

The Looper Clinic, recently established in the University Hospital for bronchoscopy and esophagoscopy, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M., under direction of Dr. Looper.

The Mercy Hospital Clinic for bronchoscopy and esophagoscopy is under the direction of Dr. Zinn. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students, as an aid in the diagnosis and treatment of diseases of the lungs.

GENITO-URINARY SURGERY

W. H. Toulson ..... Professor of Genito-Urinary Surgery
Austin H. Wood ..... Associate in Genito-Urinary Surgery
L. J. Millan ..... Associate in Genito-Urinary Surgery
K. D. Legge ..... Associate in Genito-Urinary Surgery
L. K. Fargo ..... Associate in Genito-Urinary Surgery
John F. Hogan ..... Associate in Genito-Urinary Surgery
W. A. H. Councill ..... Associate in Genito-Urinary Surgery
Samuel T. Helms ..... Instructor in Genito-Urinary Surgery
Harry S. Shelley ..... Instructor in Genito-Urinary Surgery
Francis W. Gillis ..... Instructor in Genito-Urinary Surgery

Third Year. This course is given for seven hours to the entire class. It consists of lectures and demonstrations including the use of lantern slides and motion pictures. Dr. Toulson.

Fourth Year. The course in this year includes explanations and demonstrations of urethroscopy, cystoscopy, ureteral catheterization, renal function tests, urography, urine cultures and the various laboratory procedures. The teaching consists of clinics and ward rounds to small groups, and attendance by members of the senior class upon the out-patients in the dispensary. The student here is placed much on his own responsibility in arriving at a diagnosis. Members of the Staff are in constant attendance for consultations. These dispensary classes are conducted at both the

Mercy and University Hospitals where practically every variety of venereal disease is here encountered and used for teaching purposes.

DISEASES OF THE RECTUM AND COLON

CHARLES F. BLAKE.....Professor of Diseases of Rectum and Colon
J. DAWSON REEDER.....Professor of Diseases of Rectum and Colon
MONTE EDWARDS.....Associate Professor of Diseases of Rectum and Colon
JAMES C. OWINGS.....Instructor in Diseases of the Rectum and Colon
EUGENE E. COVINGTON.....Assistant in Diseases of the Rectum and Colon

Third Year. Seven hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Reeder and Dr. Edwards.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Dr. Blake. University Hospital—Drs. Reeder and Monte Edwards.

OTOLOGY

J. W. DOWNEY.....Professor of Otology
FRANKLIN B. ANDERSON.....Associate Professor of Otology
BENJAMIN S. RICH.....Associate in Otology
THOMAS R. O'ROURK.....Associate in Otology
WILLIAM A. PARR.....Assistant in Otology

The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The entire class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

NEUROLOGICAL SURGERY

CHARLES BAGLEY, JR.....Professor of Neurological Surgery
RICHARD G. COBLENTZ.....Associate Professor of Neurological Surgery
WILLIAM R. GERAGHTY.....Instructor in Neurological Surgery

Third Year. The course covers instruction in diagnosis and treatment of surgical conditions of the brain, spinal cord, and the peripheral nerves. Ten lectures are given to the entire class. Dr. Bagley.

Fourth Year. Weekly ward rounds and conferences are given at the University Hospital. Drs. Bagley and Coblentz.

ONCOLOGY

J. Mason Hundley, Jr. ..... Professor of Gynecology
Grant E. Ward ..... Associate Professor of Surgery

Every facility for the diagnosis and treatment of neoplastic diseases is available; this includes electro-surgery, radium therapy and deep X-ray therapy.

An out-patient clinic is held twice weekly which affords an opportunity for instruction to a limited number of students. The gynecological problems are under the supervision of Dr. Hundley, and the general surgical conditions are under the direction of Dr. Ward.

Instruction, other than dispensary teaching, is given to small groups of students, for one hour a week, in the history, physics and practical application of radium. Drs. Ward and Hundley.

ORAL SURGERY

Robert P. Bay ..... Professor of Oral Surgery
Brice M. Dorsey ..... Professor of Exodontia
Charles A. Reifschneider
Associate Professor of Traumatic Surgery and Oral Surgery
William E. Hahn ..... Instructor in Exodontia

This section in the Department of Surgery is established for the teaching of both medical and dental students. A new subdivision in the Dispensary has also been established, and beds will be provided in the University Hospital for the care of patients, who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching in dispensary. Instruction includes diagnosis and treatment of diseases of the face, mouth and jaws.

INDUSTRIAL MEDICINE AND SURGERY

Page Edmunds ..... Professor of Traumatic Surgery
G. Carroll Lockard ..... Professor of Clinical Medicine
Charles A. Reifschneider
Associate Professor of Traumatic Surgery and Oral Surgery

This section is under the combined supervision of the Medical and Surgical Departments and is a cooperative effort by members of the Medical School and Hospital Staff to afford means for study, both clinical and laboratory, of the patient who has been subjected to industrial hazard, either traumatic or medical, so that adequate care may be instituted to promote his physical well-being. The entire resources of the Laboratories of the Medical School and Hospital are available as needed.

Under direction of this department limited undergraduate instruction will be given, especially in the methods of examination and of keeping records; and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There will also be instruction upon methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and City Hospitals will supply suitable material for bed-side instruction.

DEPARTMENT OF OBSTETRICS

L. H. Douglass ..... Professor of Obstetrics
J. McFarland Bergland ..... Associate Professor of Obstetrics
Emil Novak ..... Associate Professor of Obstetrics
J. G. M. Reese ..... Assistant Professor of Obstetrics
M. Alexander Novey ..... Assistant Professor of Obstetrics
Isadore A. Siegel ..... Associate in Obstetrics
E. P. H. Harrison ..... Associate in Obstetrics
John E. Savage ..... Associate in Obstetrics
Frank K. Morris ..... Instructor in Obstetrics
Margaret B. Ballard ..... Assistant in Obstetrics
Kenneth B. Boyd ..... Assistant in Obstetrics
Dudley P. Bowe ..... Assistant in Obstetrics
W. Allen Deckert ..... Assistant in Obstetrics
Jaroslav Hulla ..... Assistant in Obstetrics
Marius P. Johnson ..... Assistant in Obstetrics
Maxwell L. Mazer ..... Assistant in Obstetrics
Joseph M. Blumberg ..... Assistant in Obstetrics
Hugh B. McNally ..... Assistant in Obstetrics
Ferd. E. Kadan ..... Assistant in Obstetrics
Catherine Blumberg ..... Assistant in Obstetrics
J. Edward Norris ..... Assistant in Obstetrics
Jacob R. Jensen ..... Assistant in Obstetrics
J. Warren Albrittain ..... Assistant in Obstetrics

Third Year. Two lectures and recitations are given each week to the entire class. Drs. Douglass, Novak, Bergland, Novey and Savage.

Clinics, recitations and lectures are given to one-half of the class each week at the Baltimore City Hospitals and the University Hospital. Drs. Reese and Seigel.

Demonstrations at the University Hospital Dispensary are given to sections of the class. Drs. Siegel and Harrison.

Students observe and assist in deliveries at the University and Baltimore City Hospitals throughout the year.

Fourth Year. A clinical conference is given each week. Dr. Douglass.

Ward classes are given six hours per week, for five weeks, to sections of the class at the University Hospital. Drs. Douglass, Reese and Novey. Manikin work is given to sections of the class at the University Hospital. Drs. Morris, Bowe and Deckert.

Each member of the senior class is required to conduct the delivery of at least ten women in their homes under the supervision of the teaching and resident staff. Students observe, assist in and conduct, under supervision, deliveries at the University Hospital.

DEPARTMENT OF GYNECOLOGY

J. Mason Hundley, Jr. ..... Professor of Gynecology
Abram S. Samuels ..... Clinical Professor of Gynecology
George A. Strauss, Jr. ..... Assistant Professor of Gynecology
R. G. Willse ..... Assistant Professor of Gynecology
Thomas K. Galvin ..... Assistant Professor of Gynecology
Leo Brady ..... Assistant Professor of Gynecology
John T. Hibbitts ..... Associate in Gynecology
Edward P. Smith ..... Associate in Gynecology
Kenneth B. Boyd ..... Associate in Gynecology
Thomas S. Bowyer ..... Instructor in Gynecology
Joseph V. Castagna ..... Instructor in Gynecology
Ernest S. Edlow ..... Instructor in Gynecology
Beverley C. Compton ..... Assistant in Gynecology
W. Allen Deckert ..... Assistant in Gynecology
Frank K. Morris ..... Assistant in Gynecology
John C. Dumler ..... Assistant in Gynecology
H. L. Granoff ..... Assistant in Gynecology
J. J. Erwin ..... Assistant in Gynecology

Third Year. A course of thirty lectures and recitations is given to the whole class. In addition, a short course of lecture-demonstrations is given at the Baltimore City Hospitals, consisting of eight periods of one hour each, in which small groups of students are instructed in the fundamentals of gynecological diagnosis and examination.

Fourth Year. Operative clinics—lectures and demonstrations—are given six hours per week, for five weeks, to sections of the class.

Instruction in Female Urology is given, and a small number of students may attend the cystoscopic dispensary which is held twice weekly.

The course in Gynecology also includes instruction in the diagnosis and treatment of cancer of the generative organs, small groups of students attending the Oncological dispensary for additional work.

DEPARTMENT OF OPHTHALMOLOGY

CLYDE A. CLAPP.....Professor of Ophthalmology
M. RANDOLPH KAHN.....Clinical Professor of Ophthalmology
H. K. FLECK.....Clinical Professor of Ophthalmology
R. D. WEST.....Associate in Ophthalmology
HENRY F. GRAFF.....Associate in Ophthalmology
JONAS FRIEDENWALD.....Lecturer in Ophthalmic Pathology
JOSEPH I. KEMLER.....Associate in Ophthalmology
F. A. HOLDEN.....Instructor in Ophthalmology
F. EDWIN KNOWLES, JR.....Instructor in Ophthalmology
JOHN G. RUNKLE.....Assistant in Ophthalmology
THOMAS R. O'ROURK.....Assistant in Ophthalmology
JEROME SNYDER.....Assistant in Ophthalmology
MILTON C. LANG.....Assistant in Ophthalmology

Third Year. Second semester. Dr. Kahn will give a course reviewing the anatomy and physiology of the eye and the methods used in making the various examinations. Errors of refraction and their effect upon the general system will be explained. Weekly section work, demonstrating the use of the ophthalmoscope, will be carried on during the entire session.

Fourth Year. Clinics and demonstrations in diseases of the eye, weekly, for one year. Dr. Clapp.

This course consists of lectures upon the diseases of the eye, with particular reference to their diagnosis and relation to general medicine. Special lectures will be given upon vascular changes in the eye and upon the pathology of the eye. Some operations will be demonstrated by motion pictures.

Weekly ward classes at the University, The Baltimore Eye, Ear and Throat and Mercy Hospitals during which the eye grounds in the various medical and surgical conditions are demonstrated. Drs. Fleck, West, Kemler, Graff and Knowles.

Also daily demonstrations are given in the taking of histories and the diagnosis and treatment of the various conditions as seen in the dispensary.

Owing to the necessity of making a large number of examinations of the fundus, both in the third and fourth year, students are required to furnish their own ophthalmoscopes.

Third Year—Total number of hours 30.

Fourth Year—Total number of hours 46.

DEPARTMENT OF ART AS APPLIED TO MEDICINE

CARL DAME CLARKE.....Associate Professor of Art as Applied to Medicine

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the University and for publication in scientific periodicals.

Special courses of instruction are given to qualified students.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 21, 1939 TO JANUARY 27, 1940

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 1.00	Gross Anatomy—Lectures and Laboratories					(9–12)
1.00 to 2.00	Lunch					
2.00 to 5.00	*Histology and Embryology *32–34*			Histology and Embryology *32–34*		

* Course begins October 5, 1939.

SECOND SEMESTER, JANUARY 29 TO MAY 25, 1940

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory — Biological Chemistry *Sect. A*	Laboratory — Biological Chemistry *Sect. B*	Laboratory — Biological Chemistry *Sect. A*	Laboratory — Biological Chemistry *Sect. B*	10.30 to 11.30 Psychiatry *Adm. 1*	
12.00 to 12.50	Lunch	Lunch	Lunch	Lunch	Lunch	
12.50 to 1.50	Biological Chemistry *Adm. 1*	Biological Chemistry *Adm. 1*	Biological Chemistry *Adm. 1*	Biological Chemistry *Adm. 1*	Biological Chemistry *Adm. 1*	
2.00 to 5.00	*Neuro-anatomy *Bressler*	Neuro-anatomy *Bressler*	Biological Chemistry Conference *Adm. 1*	Neuro-anatomy *Bressler*	Biological Chemistry Conference *Adm. 1*	

* Neuro-anatomy begins February 26, 1940.

Locations of Lecture Halls and Laboratories:
Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
32-34 — 32-34 South Paca Street, Sixth Floor.
Anatomy Laboratory—Third Floor, Gray Laboratory, Lombard and Greene Streets.
Biological Chemistry Laboratory—Third Floor, 31 South Greene Street.
Histology and Embryology Laboratory—32–34 South Paca Street, Sixth Floor.
Bressler-Bressler Research Laboratory.

Mid-Year Examinations—January 22-27, 1940
Final Examinations—May 20-25, 1940

SECOND YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 21, 1939 TO JANUARY 27, 1940

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Physiology *Adm. 1*	Physiology *Adm. 1*	Physiology Conference *Adm. 1*	Physiology *Adm. 1*	Physiology *Adm. 1*	
9.30 to 10.30	Physiology Conference *Adm. 1*	Bacteriology *Adm. 1*	Medicine *Adm. 1*	Pharmacology *Adm. 1*	Pharmacology *Adm. 1*	
10.30 to 12.30	†Bacteriology Laboratory				10.30 to 11.30 Psychiatry *Adm. 1* 11.30 to 12.30 Neurological Diagnosis *C.H.*	
12.30 to 1.00	Lunch					
1.00 to 5.00	Physiology Laboratory *A*	Physiology Laboratory *B*	Elective	Pharmacology Laboratory (1 to 4) *B* | *A* Physiology Laboratory *A* | *B*		

† Bacteriology Laboratory—Section work during the last month.

SECOND SEMESTER, JANUARY 29 TO MAY 25, 1940

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Surgery *Adm. 1*	Surgery *Adm. 1*	Surgical Anatomy *Adm. 1*			
9.30 to 10.30	Pharmacology *Adm. 1*	Pharmacology *Adm. 1*	Surgical Anatomy Laboratory	Medical Clinic *Amp.*	Pharmacology *Adm. 1*	
10.30 to 11.30	Pathology *C. H.*	Pathology *C. H.*		Pathology *C. H*	Pathology *C. H.*	
11.30 to 12.00	LUNCH					
12.00 to 2.00	Pathology Laboratory	Pathology Laboratory	Optional period Pathology Immunology	Pathology Laboratory	Pathology Laboratory	
2.00 to 3.00	Surgical Anatomy *Adm. 1*	‖Immunology Laboratory	Immunology Laboratory	Pharmacology Laboratory *Sect. A* — Physical Diagnosis *Sect. B* (3.00–5.00)	Pharmacology Laboratory *Sect. B* — Physical Diagnosis *Sect. A* (3.00–5.00)	
3.00 to 5.00	Surgical Anatomy Laboratory					

‖ Immunology Laboratory—Section work during last two months.

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Greene and Redwood Streets, Eighth Floor.
Laboratories:
Physiology—First Floor, Gray Laboratory, Lombard and Greene Streets.
Bacteriology—Second Floor, 31 South Greene Street.
Immunology—Second Floor, 31 South Greene Street.
Pathology—Second Floor, 31 South Greene Street.
Pharmacology—Second Floor, Gray Laboratory, Lombard and Greene Streets.
Surgical Anatomy—Third Floor, Gray Laboratory, Lombard and Greene Streets.

Mid-Year Examinations—January 22–27, 1940
Final Examinations—May 20–25, 1940

THIRD YEAR SCHEDULE

SEPTEMBER 21, 1939 TO MAY 25, 1940

SCHEDULE 1

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	(Whole Class) Obstetrics *C. H.* †Gynecology Apr. 15 to May 6	(Whole Class) Surgery *C. H.*	(Whole Class) Obstetrics *C. H.* †Gynecology Apr. 17 to May 8	(Whole Class) Surgery *C. H.*	(Whole Class) Pathology *C. H.*	(Whole Class) Surgery *C. H.* †Gynecology Feb. 3 to Mar. 16 inc.
9.30 to 10.00	Transfer to Baltimore City Hospitals					
10.00 to 12.00	Physical Diagnosis, Pathology, Neurology and Pediatrics at B. C. H.					
12.00 to 1.00	Transfer and Lunch	Transfer and Lunch	Lunch	Transfer and Lunch	Lunch	
1.00 to 2.00	(Whole Class) Otology, Proctology, Urology Nose & Throat, *C. H.*	(Whole Class) *Gynecology †Eye—10 wks. (Jan. 30 to April 2) †Oncology —5 wks. (April 9 to May 7) *C. H.*	Medical Clinic *B. C. H.*	(Whole Class) Clinical Pathology *C. H.*	Obstetrical Clinic *B. C. H.*	
2.00 to 4.00	(Whole Class) Pathology Laboratory *31*		Surgery (2.00 to 4.00) — Pediatrics (2.00 to 4.30) — Gynecology Orthopaedics Psychiatry (Subgroups of Surgery Group) (4.00 to 5.00)	(Whole Class) Clinical Pathology — Laboratory *31*	Surgery (2.00 to 4.00) — Pediatrics (2.00 to 4.30) — Gynecology Orthopaedics Psychiatry (Subgroups of Surgery Group) (4.00 to 5.00)	
4.00 to 5.00	(Whole Class) Public Health *C. H.*	(Whole Class) Physical Diagnosis, Psychiatry, Legal Medicine *C. H.*				

* First Semester. † Second Semester.

SCHEDULE 2

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Same as Schedule 1					
9.30 to 10.20	Pediatrics *C. H.*	Medicine *C. H.*	Medicine *C. H.*	Therapeutics *C. H.*	Medicine *C. H.*	Neurology *C. H.*
10.30 to 12.30	Operative Surgery—U. H. Disp. Medical and Surgical Dispensaries—(Univ. and Mercy Sections)					
12.30 to 1.00	LUNCH					
1.00 to 2.00			Medical Clinic *Amp.*		Psychiatry (9 weeks) Dermatology (6 weeks)	
2.00 to 4.00	Same as Schedule 1		Ophthalmoscopy (5 weeks) *B. E. H.* — Obstetrics (5 weeks) Univ. Hosp. — Otology (5 wks.) *C. H.*	Same as Schedule 1	N.B.—The whole section reports to psychiatry for first three weeks, then subdivides. *C. H.* for first 3 wks. U. H. Disp.	
4.00 to 5.00					Obstetrics *C. H.*	

The Junior Class will be divided into two sections—A and B. Each section reports to classes in keeping with the following schedule assignment, in which the letters represent the class sections and the numerals indicate the schedules to be followed for the 15-week periods shown.

Schedule Assignment

Periods	*Sections and Schedules*
September 21 to January 20	A-1, B-2
January 29 to May 11	B-1, A-2

Locations of Lecture Halls, etc.

Adm. 1—Administration Bldg., Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Eighth Floor.
B. C. H.—Baltimore City Hosps., 4940 Eastern Ave.
B. E. H.—Baltimore Eye, Ear and Throat Hospital, 1214 Eutaw Place.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
Univ. Hosp.—New University Hospital, Greene and Redwood Streets.
U. H. Disp.—Old Hospital Building, S. W. Cor. Lombard and Greene Streets.
31—31 South Greene Street.
Clinical Pathology Laboratory—31 South Greene St., Second Floor.
Pathology Laboratory—31 South Greene Street, Special Rooms, Basement.

Mid-Year Examinations—January 22-27, 1940
Final Examinations—May 13-25, 1940

FOURTH YEAR SCHEDULE

SEPTEMBER 21, 1939 TO MAY 25, 1940

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 11.00	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (c) Gynecology	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (c) Gynecology	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (d) Pediatrics
11.00 to 12.00	Orthopaedic Surgery *Univ. Sec. Amp. P. & S. Sec. 51*	Medical Clinic *Univ. Sec. Amp.* Surgical Pathology *P. & S. Sec. 40*	Clinical Pathological Conference *Univ. Sec. C. H. P. & S. Sec. 34*	Surgical Clinic *Univ. Sec. Amp P. & S. Sec. 51*	Medical Clinic *Univ. Sec. Amp. P. & S. Sec. 34*	Pediatric Clinic *Univ. Sec. Amp. P. & S. Sec. 34*
12.00 to 2.00	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic *Univ. Sec. Amp. P. & S. Sec. 34*	Neurology Clinic *Univ. Sec. Amp. P. & S. Sec. 34*	Eye and Ear Clinic (Full Class at Univ. Hosp.) *Amp.*	Obstetrical Clinic (Full Class at Univ. Hosp.) *Amp.*	Public Health Sept. 22 to Oct. 27 Gastro-Enterology Clinic Nov. 3 (Full Class at Univ. Hosp.) *Amp.*	
3.30 to 5.00	*P. & S. Sect.* and *Univ. Sect.* Ward Classes	*P. & S. Sect.* Ward Classes Medicine Orthopaedics Pediatrics	*P. & S. Sect.* Ward Classes Public Health Nose and Throat	*P. & S. Sect.* Ward Classes Medicine Proctology Pediatrics	*P. & S. Sect.* Ward Classes Neurology Roentgenology Psychiatry *Amp.*	
3.30 to 5.00	See special schedule Medical School bulletin board	*Univ. Sect.* Ward Classes Medicine Proctology Oncology (3.30–4.30) *Amp.*	*Univ. Sect.* Ward Classes Public Health Urology Eye and Ear	*Univ. Sect.* Ward Classes Therapeutics Nose and Throat	*Univ. Sect.* Ward Classes Neurology Orthopaedic Surgery (*Kernan Hospital*) Psychiatry	

(a)—Univ. and P. & S. Sections.
(b)—Univ. Section.
(c)—Whole P. & S. special group.
(d)—P. & S. special group, divided attendance at Univ. and P. & S.

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

First Semester	*Second Semester*
1st period.....Sept. 21–Oct. 28	1st period.....Jan. 29–Mar. 2
2nd period.....Oct. 30–Dec. 2	2nd period.....Mar. 4–Apr. 6
3rd period.....Dec. 4–Jan. 20	3rd period.....Apr. 8–May 11

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre—New University Hospital.
Disp. Amp.—Old Hospital Building, fourth floor S. W. cor. Lombard and Greene Streets.
P. & S., 34—Second Floor, Calvert and Saratoga Streets.
P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

Univ. Section-Dispensary schedule posted in Old Hospital Bldg.
P. & S. Section—obtain special schedule at Mercy Hospital

Mid-Year Examinations—January 22–27, 1940
Final Examinations—May 13–18, 1940

REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the School of Medicine are:

(a) Graduation from an approved secondary school, or the equivalent in entrance examinations, and

(b) Three years of acceptable premedical credit earned in an approved college of arts and sciences. The quantity and quality of this preprofessional course of study shall be not less than that required for recommendation by the institution where the premedical courses are being, or have been, studied.

The premedical curriculum shall include basic courses in

English
Biology (Invertebrate and Vertebrate Zoology are preferred to General Biology)
Inorganic Chemistry
Organic Chemistry
Physics
French or German,

and such elective courses as will complete a balanced three-year schedule of study.

The elective courses should be taken from the following three groups:

Humanities	*Natural Sciences*	*Social Sciences*
English	Comparative Vertebrate Anatomy	Economics
Scientific German, or French (A reading knowledge of either language is desirable, although German is preferred)	Embryology	History
Philosophy	Physical Chemistry or Quantitative Analysis (Physical Chemistry Preferred)	Political Science
	Mathematics	Psychology
	Histological Technique*	Sociology, etc.

* Should not be taken in a three-year premedical curriculum.

Not less than 36 semester hours (or the equivalent in quarter or session hours, or courses) should be taken in the humanities and social sciences.

Wherever possible, a premedical student should complete a four-year curriculum and earn the baccalaureate degree.

In accepting candidates for admission, preference will be given to those applicants who have high scholastic records in secondary school and college; satisfactory scores in the Moss Aptitude Test (which is given each fall by the Association of American Medical Colleges in the institutions that are preparing students for medicine); the most favorable letters of recommendation from their respective premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics;

and who in all other respects give every promise of becoming successful students and physicians of high standing.

Application blanks may be secured by addressing the Committee on Admissions, School of Medicine, University of Maryland, Baltimore. Applications for admission will be received beginning October 1, 1939, for the incoming 1940 classes.

Those candidates for admission who are accepted will receive certificates of entrance from the Director of Admissions of the University.

COMBINED COURSE IN ARTS AND SCIENCES, AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative premedical course requirements.)

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the Dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences, at the Commencement following the second year of residence.

RULES

1. All students are required to take the spring examinations unless excused by the Dean.

2. No student will be permitted to advance from a lower to a higher class with conditions.

3. Should a student be required to repeat any year in the course, he must pay regular fees.

4. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examinations in such other branches as may be required, should he again be permitted to enter the school as a candidate for graduation.

5. The general fitness of a candidate for graduation, as well as the results of his examinations, will be taken into consideration by the Faculty.

6. At the beginning of the first year, all students must be prepared to purchase microscopes of a satisfactory type equipped with a mechanical stage and a sub-stage lamp.

A standard microscope of either Bausch & Lomb, Leitz, Spencer, or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece: 10 x and 5 x Oculars
Wide aperture stage: 16 mm. and 4 mm. Objectives
Quick Screw condenser (Abbe): 1.9 mm. 125 N.A. Oil Immersion Lens

All used microscopes are subject to inspection and approval before their use in the laboratory is permitted. The student is cautioned against the purchase of such an instrument before its official approval by the school.

7. Students in the third and fourth year classes are required to furnish their own ophthalmoscopes.

All the above rules, as well as the fees stated below, relate to the year ending June 1, 1940 only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the University authorities deem it expedient.

FEES

Matriculation fee (paid once)	$10.00
Tuition fee (each year) for residents of Maryland	450.00
Tuition fee (each year) for non-residents	600.00
Laboratory fee (each year)	25.00
Special and re-examination fee	5.00
Graduation fee	15.00

No fees are returnable.

The above fees apply to all students who matriculate in the School of Medicine in any class for the session beginning September 21, 1939.

All students, after proper certification, are required to register at the Office of the Registrar. (See calendar in front part of this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

The matriculation fee is payable at the time the applicant is offered acceptance as a student.

The laboratory fee and one-half of the tuition fee for the year shall be paid at the time of the first semester registration, and the remainder of the tuition fee shall be paid at the second semester registration date.

Failure to meet these conditions will debar automatically the student from attendance on classes and other privileges of the University.

When offering checks in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted only for collection.

DEFINITION OF RESIDENCE STATUS OF STUDENTS*

Students who are minors are considered to be resident students if, at the time of their registration, the parents* have been residents of this State for at least one year.

* The term "parents" includes persons who, by reason of death or other unusual circumstances, have been legally constituted the guardians of or stand in loco parentis to such minor students.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year, provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this State by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted must file their state certificates in the office of the Committee on Admissions, School of Medicine, before registration.

MEDICAL CARE OF STUDENTS

The Medical Council has made provision for the systematic care of students in the Medical School, according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the School Physician, Dr. T. N. Carey, in his office at the Medical School, between 4 and 5 P.M., daily, except Saturday and Sunday. In cases of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the Medical Council has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the School Physician's Office.

4. Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur. As minor visual defects are frequently unrecognized until detected by an ophthalmologist, it is especially urged that all new students have their eyes examined and any error of refraction corrected before beginning the course.

PRIZES AND SCHOLARSHIPS

FACULTY PRIZE

The Faculty each year awards a Gold Medal to the Graduate who during the four years of his course has shown the greatest proficiency in preparing for the practice of medicine. The five candidates standing next in order will be awarded Certificates of Honor.

DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of $25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in Genito-Urinary Surgery.

SAMUEL M. SHOEMAKER PRIZE

An annual prize of $25.00 has been established by Mrs. Samuel M. Shoemaker and Mrs. Bartlett F. Johnston as a memorial to Samuel M. Shoemaker for the best essay on "Milk in Relation to Public Health" written by a student in the senior class.

SCHOLARSHIPS*

The Dr. Samuel Leon Frank Scholarship

(Value $100.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold such scholarship for more than two years.

*** Note: Scholarships, unless specifically renewed on consideration of application, are for one year only.**

The Charles M. Hitchcock Scholarships

(Value $100.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Council satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship

(Value $100.00)

This scholarship was established by the late Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

Dr. Leo Karlinsky Memorial Scholarship

(Value $125.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the University.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Medical Council, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance.

The University Scholarship

A scholarship which entitles the holder to exemption from payment of tuition fee for the year, is awarded annually by the Medical Council

to a student of the senior class in need of assistance who presents to the Medical Council satisfactory evidence of good character and scholarship.

Frederica Gehrmann Scholarship

(Value $200.00)

(Not open to holders of Warfield and Cohen Scholarships)

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and is awarded to a third-year student who at the end of the second year has passed the best practical examinations in Physiology, Pharmacology, Pathology, Bacteriology, Immunology, Serology, Surgical Anatomy and Neuro-Anatomy.

The Clarence and Genevra Warfield Scholarships

(Value $300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's interneship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded by the student.

Israel and Cecilia E. Cohen Scholarship

(Value $150.00)

This scholarship was established by the late Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in Medicine; preference is given to students of the counties in the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's interneship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council. In the event that a student is not able to comply with the con-

dition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded.

Dr. Horace Bruce Hetrick Scholarship

(Value $125.00)

This scholarship was established by Dr. Horace Bruce Hetrick as a memorial to his sons, Bruce Hayward Hetrick and Augustus Christian Hetrick. It is to be awarded by the Medical Council to a student of the senior class.

ANNUAL HOSPITAL APPOINTMENTS

Each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Six Residents in Surgery
Three Residents in Medicine
Three Residents in Obstetrics
Two Residents in Gynecology
Resident in Pediatrics
Resident in Nose and Throat
Resident in Roentgenology
Twelve Senior Internes rotating in Medicine and Surgery
Twelve Junior Internes rotating in the Specialties

TO THE MERCY HOSPITAL

Five Residents in Surgery
Two Residents in Medicine
Resident in Gynecology
Nine Internes on Rotating Service

NOTICE TO STUDENTS

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience. *In addition to these the student must bear in mind the expenditure for a microscope.*

Items	*Low*	*Average*	*Liberal*
Books	$50	$75	$100
College Incidentals	20	20	20
Board, eight months	200	250	275
Room rent	64	80	100
Clothing and laundry	50	80	150
All other expenses	25	50	75
Total	$409	$556	$720

Students will save time and expense upon their arrival in the city by going directly to the School of Medicine on the University grounds, N. E. Corner Lombard and Greene Streets. Here may be found a list of comfortable and convenient boarding houses suitable to their means and wishes.

For further information, apply to Dean, School of Medicine.

GRADUATES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, JUNE 3, 1939

Baylus, Herman Herbert.....Maryland
Beck, Harry McBrine, A.B.....Maryland
Berman, Edgar Frank.....Maryland
Bernstein, Aaron, B.S.....Maryland
Bernstein, Albion Older, B.S....New York
Bess, Elizabeth Grant, A.B..West Virginia
Bloom, Max Ralph, B.S.....Pennsylvania
Brezinski, Edward Joseph, A.B.
New Jersey
Briele, Henry Alison.....Maryland
Brodsky, Bernard, A.B.....New York
Cannon, Lawrence Saville, A.B.....Utah
Cianos, James Nicholas, B.S.....Maryland
Coffman, Robert Thornhill..West Virginia
Cohen, Frank Samuel.....Maryland
Corbitt, Richard Wylie, A.B.
West Virginia
Cunningham, Raymond Murray, A.B.
Maryland
Filtzer, David Leonard, A.B....Maryland
Freed, Arnold Ulysses, B.S.....Maryland
Gaver, Leo Junior, B.S.....Maryland
Goldberg, Sylvan David, B.S....Maryland
Grier, George Smith, III, B.S....Delaware
Grott, Harold Allan, B.S.....Maryland
Haimowitz, Samuel Isaac, A.B.
Pennsylvania
Harris, Charles Isaac, Jr., B.S.....Georgia
Harrison, Charles Samuel, B.S.
West Virginia
Hartman, Oscar, B.S.....Maryland
Hartz, Alvin Sidney, A.B.....Maryland
Heimoff, Leonard Lincoln, A.B..New York
Hooker, Charles Bullard, B.S....Maryland
Hutchins, Thomas Manning.....Maryland
Isaacson, Benjamin.....Maryland
Jandorf, R. Donald, A.B.....Maryland
Jannarone, Lewis Henry, B.S..New Jersey
Jones, Charles Wilson, A.B.....Maryland
Kairys, David, A.B.....Maryland
Kammer, William Henry, Jr., A.B.
Maryland
Kappelman, Melvin Daniel, B.S.
Maryland
Keister, Philip Weyforth, A.B...Maryland
Kerr, James Patterson, Jr.....Maryland
Kiely, James Arthur, A.B.....New York
Kinnamon, Howard Franklin, Jr.
Maryland
Kleiman, Bernard Stanley.....Maryland
Lapinsky, Herbert, M.S.....New York
Lavenstein, Arnold Fabian, A.B.
Maryland
Layman, William Templeton....Maryland
Leitch, William Harvey, B.S....Maryland
Magness, Stephen Lee, A.B.....Maryland
Magruder, John Robinson, A.B.
Maryland
Marks, Irving Lowell.....Maryland
McClafferty, William James, Jr., A.B.
Rhode Island
McLaughlin, Francis Joseph....Maryland
Meyer, Alvin Francis, B.S.....New York
Miller, Irving, B.S.....New York
Miller, William Shepherd, A.B...Maryland
Moran, John Anthony.....Massachusetts
Moricle, Charles Hunter, B.S.
North Carolina
Nuttall, James Baker, B.S.....Maryland
Palmer, David Waugh.....West Virginia
Parks, Seigle Wilson, A.B....West Virginia
Pijanowski, Walter Joseph, B.S.
New York
Pillar, Samuel, B.S.....Maryland
Polek, Melvin Frank, B.S.....Maryland
Reimann, Dexter LeRoy, B.S....Maryland
Rochberg, Samuel, B.S.....New Jersey
Ruzicka, Edwin Russell, B.S....Maryland
Sadove, Max Samuel, B.S.....Maryland
Schenthal, Joseph Edwin, A.B..Maryland
Scher, Isadore.....Maryland
Sexton, Thomas Scott, A.B..West Virginia
Sherman, Claude Porter, B.S.
North Carolina
Siegel, Maurice Bert, A.B.....New York
Smoak, Philip Laurens.....Florida
Solarz, Sylvan Daniel, A.B.....Maryland
Spiegel, Herbert, B.S.....Pennsylvania
Steger, William Joseph, A.B.
West Virginia
Stevens, Leland Bates, B.S.....Maryland
Tartikoff, George, B.S.....New York
Thomas, Ramsay Berry, B.S....Maryland
Thomas, Wilbur Clyde, B.S.....Maryland
Urlock, John Peter, Jr., B.S.....Maryland
Wallenstein, Leonard, A.B.....Maryland
Wanner, Jesse Rosenberger, Jr..Maryland
Whitworth, Fuller Barnard.....Maryland
Wilder, Milton Jay.....Maryland
Wilner, Sol, M.S.....New York
Worsley, Thomas Luther, Jr., B.S.
North Carolina
Zalis, Daniel Leonard, B.S.....Maryland

Honors

University Prize Gold Medal.....James Baker Nuttall

Certificates of Honor

Francis Joseph McLaughlin
William Harvey Leitch
Leland Bates Stevens
Raymond Murray Cunningham
Thomas Scott Sexton
Ramsay Berry Thomas

The Dr. A. Bradley Gaither Memorial Prize of $25.00 for the best work in genito-urinary surgery during the senior year.....Leonard Wallenstein

Degree Conferred September 15, 1938

Sarajian, Aram Martyr, A.B.....New Jersey

INTERNESHIPS—CLASS OF 1938

Abarbanel, Milton G.....Uniontown Hospital, Uniontown, Pennsylvania
Abramson, Daniel Jerome.....York Hospital, York, Pennsylvania
Applefeld, Willard.....Sinai Hospital, Baltimore, Maryland
Baum, Max.....Wilmington General Hospital, Wilmington, Delaware
Bonner, Robert Alexander, Jr.....St. Mary's Hospital, Waterbury, Connecticut
Borden, Melvin Nachlas.....York Hospital, York, Pennsylvania
Bowers, John Zimmerman.....University Hospital, Baltimore, Maryland
Bradley, Stanley Edward.....University Hospital, Baltimore, Maryland
Brooks, Wilbur Starr.....Mercy Hospital, Baltimore, Maryland
Brown, Manuel.....Washington Hospital, Washington, Pennsylvania
Bunting, John James.....University Hospital, Baltimore, Maryland
Callahan, Timothy Andrew, Jr.....University Hospital, Baltimore, Maryland
Chance, Burton, Jr.....Pennsylvania Hospital, Philadelphia, Pennsylvania
Cohen, Hilliard.....Sinai Hospital, Baltimore, Maryland
Colleran, Harold Leo.....Mercy Hospital, Wilkes-Barre, Pennsylvania
Coolahan, John Francis.....St. Agnes Hospital, Baltimore, Maryland
Cooper, Donald Dwight.....Mercy Hospital, Baltimore, Maryland
Costas, Jaime Luis.....Hotel Dieu Hospital, New Orleans, Louisiana
Crawford, Robert Clifford.....Union Memorial Hospital, Baltimore, Maryland
Dausch, Michael Joseph.....St. Joseph's Hospital, Baltimore, Maryland
Dodd, William Anthony.....Mercy Hospital, Baltimore, Maryland
Dolfman, Victor.....Wilmington General Hospital, Wilmington, Delaware
Eichert, Arnold Herman.....South Baltimore General Hospital, Baltimore, Maryland
Feder, Aaron.....Hospital for Joint Diseases, New York City
Fox, Lester Irving.....Quincy City Hospital, Quincy, Massachusetts
Fox, Samuel Louis.....South Baltimore General Hospital, Baltimore, Maryland
Gareis, Louis Calvin.....University Hospital, Baltimore, Maryland
George, Joseph Mathias, Jr.....University Hospital, Baltimore, Maryland
Gertman, Samuel.....York Hospital, York, Pennsylvania
Gibel, Harry.....Columbia Hospital, Pittsburgh, Pennsylvania
Ginsberg, Milton.....Columbia Hospital, Wilkinsburg, Pennsylvania
Glassman, Edward Lewin.....Maryland General Hospital, Baltimore, Maryland
Goodman, Louis E., Jr.....Sinai Hospital, Baltimore, Maryland
Goodman, Sylvan Chauncey.....Washington Hospital, Washington, Pennsylvania
Gottdiener, Florence Harris.....Beth-Israel Hospital, New York City

Govons, Sidney Robert.....St. Peter's Hospital, Albany, New York
Graff, Frederick Lewis.....Maryland General Hospital, Baltimore, Maryland
Guyton, William Lehman, Jr.....Church Home & Infirmary, Baltimore, Maryland
Haase, John Henry.....University Hospital, Baltimore, Maryland
Harris, Sidney.....St. Joseph's Hospital, Paterson, New Jersey
Hayleck, Mary Lodema.....Englewood Hospital, Englewood, New Jersey
Horky, John Ralph.....St. Agnes Hospital, Baltimore, Maryland
Januszeski, Francis Joseph.....Maryland General Hospital, Baltimore, Maryland
Katz, Milton Aaron.....St. Joseph's Hospital, Lancaster, Pennsylvania
Kelmenson, Harry.....St. Joseph's Hospital, Baltimore, Maryland
Knox, John Joseph.....St. Joseph's Hospital, Philadelphia, Pennsylvania
Kotleroff, Jerome.....City Hospital, New York City
Kump, Albert Barker.....Cooper Hospital, Camden, New Jersey
Kurtz, Gerald Independence.....St. Joseph's Hospital, Paterson, New Jersey
Lauve, Celeste Constance.....City Hospital, Baltimore, Maryland
Layden, Milton.....James M. Jackson Memorial Hospital, Miami, Florida
Lenker, Luther Albert.....Lankenau Hospital, Philadelphia, Pennsylvania
Lipsitz, Morton Hirsch.....City Hospital, Baltimore, Maryland
Lopez, Hilton Luis.....St. Mary's Hospital, Mayaguez, Puerto Rico
Lumpkin, William Randolph.....Maryland General Hospital, Baltimore, Maryland
Michaelson, Ernest.....Columbia Hospital, Pittsburgh, Pennsylvania
Milholland, Arthur Vincent.....City Hospital, Baltimore, Maryland
Miller, Clarence Lee.....City Hospital, Baltimore, Maryland
Miller, Royston.....James M. Jackson Memorial Hospital, Miami, Florida
Miniszek, James Haight.....Maryland General Hospital, Baltimore, Maryland
Molofsky, Leonard Carl.....Sinai Hospital, Baltimore, Maryland
Novey, Samuel.....University Hospital, Baltimore, Maryland
Post, Laurence Caldwell.....Maryland General Hospital, Baltimore, Maryland
Powell, Geraldine Kennedy...Hospital for Women of Maryland, Baltimore, Maryland
Rizzolo, John.....Hotel Dieu Hospital, New Orleans, Louisiana
Roman, Paul.....St. John's Hospital, Cleveland, Ohio
Rossello, Juan Antonio.....Presbyterian Hospital, San Juan, Puerto Rico
Rothkopf, Henry.....Mt. Sinai Hospital, Cleveland, Ohio
Sabatino, Bernard Joseph.....St. Joseph's Hospital, Baltimore, Maryland
Schaefer, John Ferdinand.....Mercy Hospital, Baltimore, Maryland
Scherlis, Sidney.....Sinai Hospital, Baltimore, Maryland
Schmulovitz, Maurice Jacob.....Montefiore Hospital, New York City
Schlesinger, Robert Abraham....Jersey City Medical Center, Jersey City, New Jersey
Scott, John Matthai.....Maryland General Hospital, Baltimore, Maryland
Sevcik, Charles Vincent.....St. Agnes Hospital, Baltimore, Maryland
Sheppard, Robert Clay.....St. Agnes Hospital, Baltimore, Maryland
Siegel, Edward.....Jersey City Medical Center, Jersey City, New Jersey
Silberman, Donald Jared.....Illinois Masonic Hospital, Chicago, Illinois
Smith, John P.....South Baltimore General Hospital, Baltimore, Maryland
Sprei, Emanuel.....Hospital for Joint Diseases, New York City
Stein, Aaron.....York Hospital, York, Pennsylvania
Steinberg, Morris William.....St. Joseph's Hospital, Lancaster, Pennsylvania
Swiss, Adam George.....Mercy Hospital, Baltimore, Maryland
Thomas, Bernard Oscar, Jr.....University Hospital, Baltimore, Maryland
Thompson, James Upshur.....Mercy Hospital, Baltimore, Maryland
Thompson, Winfield Lynn.....City Hospital, Baltimore, Maryland

Vollmer, Frederick Joseph.....Mercy Hospital, Baltimore, Maryland
Wagner, John Alfred.....University Hospital, Baltimore, Maryland
Warres, Herbert Leonard.....Lincoln Hospital, New York City
Way, John Edward.....St. Agnes Hospital, Baltimore, Maryland
Welfeld, Alvan Abram.....Sinai Hospital, Baltimore, Maryland
White, Harry Fletcher, Jr.....Lankenau Hospital, Philadelphia, Pennsylvania
White, Samuel Cottrell.....U. S. Marine Hospital, Norfolk, Virginia
Winer, Albert Sidney.....City Hospital, Baltimore, Maryland
Woodward, Theodore Englar.....University Hospital, Baltimore, Maryland
Worthington, Richard Walker, Jr...Union Memorial Hospital, Baltimore, Maryland
Wulwick, Michael.....Caledonia Hospital, Brooklyn, New York
Yaffe, Kennard Levinson.....Sinai Hospital, Baltimore, Maryland

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Beck, Harry McBrine, A.B.....Maryland
Berman, Edgar Frank.....Maryland
Bernstein, Aaron, B.S.....Maryland
Bernstein, Albion Older, B.S....New York
Bess, Elizabeth Grant, A.B..West Virginia
Bloom, Max Ralph, B.S.....Pennsylvania
Brezinski, Edward Joseph, A.B.
New Jersey
Briele, Henry Alison.....Maryland
Brodsky, Bernard, A.B.....New York
Cannon, Lawrence Saville, A.B.....Utah
Cianos, James Nicholas, B.S....Maryland
Coffman, Robert Thornhill..West Virginia
Cohen, Frank Samuel.....Maryland
Corbitt, Richard Wylie, A.B.
West Virginia
Cunningham, Raymond Murray, A.B.
Maryland
Filtzer, David Leonard, A.B....Maryland
Freed, Arnold Ulysses, B.S.....Maryland
Gaver, Leo Junior, B.S.....Maryland
Goldberg, Sylvan David, B.S....Maryland
Grier, George Smith, III, B.S....Delaware
Grott, Harold Allan, B.S.....Maryland
Haimowitz, Samuel Isaac, A.B.
Pennsylvania
Harris, Charles Isaac, Jr., B.S.....Georgia
Harrison, Charles Samuel, B.S.
West Virginia
Hartman, Oscar, B.S.....Maryland
Hartz, Alvin Sidney, A.B.....Maryland
Heimoff, Leonard Lincoln, A.B.
New York
Hooker, Charles Bullard, B.S....Maryland
Hutchins, Thomas Manning.....Maryland
Isaacson, Benjamin.....Maryland
Jandorf, R. Donald, A.B.....Maryland
Jannarone, Lewis Henry, B.S..New Jersey
Jones, Charles Wilson, A.B.....Maryland
Kairys, David, A.B.....Maryland
Kammer, William Henry, Jr., A.B.
Maryland
Kappelman, Melvin Daniel, B.S.
Maryland
Keister, Philip Weyforth, A.B...Maryland
Kerr, James Patterson, Jr.....Maryland
Kiely, James Arthur, A.B.....New York
Kinnamon, Howard Franklin, Jr.
Maryland
Kleiman, Bernard Stanley.....Maryland
Lapinsky, Herbert, M.S.....New York
Lavenstein, Arnold Fabian, A.B.
Maryland
Layman, William Templeton....Maryland
Leitch, William Harvey, B.S....Maryland
Magness, Stephen Lee, A.B.....Maryland
Magruder, John Robinson, A.B.
Maryland
Marks, Irving Lowell.....Maryland
McClafferty, William James, Jr., A.B.
Rhode Island
McLaughlin, Francis Joseph....Maryland
Meyer, Alvin Francis, B.S.....New York
Miller, Irving, B.S.....New York
Miller, William Shepherd, A.B..Maryland
Moran, John Anthony.....Massachusetts
Moricle, Charles Hunter, B.S.
North Carolina
Nuttall, James Baker, B.S.....Maryland
Palmer, David Waugh.....West Virginia
Parks, Seigle Wilson, A.B...West Virginia
Pijanowski, Walter Joseph, B.S.
New York
Pillar, Samuel, B.S.....Maryland
Polek, Melvin Frank, B.S.....Maryland
Reimann, Dexter LeRoy, B.S....Maryland
Rochberg, Samuel, B.S.....New Jersey
Ruzicka, Edwin Russell, B.S....Maryland
Sadove, Max Samuel, B.S.....Maryland
Schenthal, Joseph Edwin, A.B...Maryland
Scher, Isadore.....Maryland

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Sherman, Claude Porter, B.S.
North Carolina
Siegel, Maurice Bert, A.B.....New York
Smoak, Philip Laurens.....Florida
Solarz, Sylvan Daniel, A.B.....Maryland
Spiegel, Herbert, B.S.....Pennsylvania
Steger, William Joseph, A.B.
West Virginia
Stevens, Leland Bates, B.S.....Maryland
Tartikoff, George, B.S.....New York
Thomas, Ramsay Berry, B.S....Maryland
Thomas, Wilbur Clyde, B.S.....Maryland
Urlock, John Peter, Jr., B.S.....Maryland
Wallenstein, Leonard, A.B.....Maryland
Wanner, Jesse Rosenberger, Jr...Maryland
Whitworth, Fuller Barnard.....Maryland
Wilder, Milton Jay.....Maryland
Wilner, Sol, M.S.....New York
Worsley, Thomas Luther, Jr., B.S.
North Carolina
Zalis, Daniel Leonard, B.S.....Maryland

THIRD YEAR CLASS 1938–39

Algire, Glenn Horner, B.S.....Maryland
Andrews, S. Ralph, Jr., A.B.....Maryland
Arney, William Charles, B.S.
North Carolina
Baier, John Cletus.....Maryland
Bailey, Walter Levi, A.B.....Pennsylvania
Barker, Daniel Cleveland, A.B.
Connecticut
Beacham, Edmund George, B.S.
Maryland
Biehl, Harold Paul, A.B.....Maryland
Bonner, Allan Baker.....North Carolina
Borden, Jesse Nachlas, A.B.....Maryland
Brinsfield, Irving Carlton, A.B..Maryland
Caplan, Lester Harold, A.B.....Maryland
Chandler, Weldon Porter, B.S.
North Carolina
Clifford, Robert Henry, Jr., B.S.
New Jersey
Cole, John Totterdale.....Ohio
Correll, Paul Harvey, A.B.....Maryland
Daniel, Louie Samuel, B.S.
North Carolina
Daue, Edwin Oliver, Jr., B.S....Maryland
De Luca, Joseph, B.S.....Rhode Island
Dent, Charles Frederic.....West Virginia
Don Diego, Leonard Vincent, B.S.
New York
Duffy, William Carroll, A.B.....Maryland
Dwyer, James Richard, B.S..Pennsylvania
Freeman, James Albert, Jr...West Virginia
Fusting, William Hammond, B.S.
Maryland
Gassaway, William Farrow.....Maryland
Gibbs, Robert Louis, A.B..North Carolina
Glick, Irving Van der Veere, A.B.
New York
Graham, Walter Raleigh, A.B.
North Carolina
Guzman-Lopez, Luis Roberto.Puerto Rico
Hecht, Morton, Jr., B.S.....Maryland
Henning, Emil Heller, Jr., A.B.
Maryland
Heyman, Albert.....Maryland
Hooton, Elizabeth Louise, B.S.. Maryland
Hope, Daniel, Jr.....Maryland
Igartua-Cardona, Susana.....Puerto Rico
Inloes, Benjamin Harrison, Jr....Maryland
Jamison, William Parks, B.S.
West Virginia
Jorgensen, Louis Cecil, A.B.....Utah
Karns, James Roscoe.....Maryland
Kirchick, Julian Gilbert, A.B....New York
Kohn, Schuyler George, B.S.....Maryland
Krieg, Edward Franz.....Maryland
Kurland, Albert Alexander.....Maryland
Lartz, Robert Eshelman, B.S.
Pennsylvania
Ling, William Soy Ming, A.B.....China
Livingood, William Cook, B.S.
Pennsylvania
Loker, Frank Ford, B.S.....Maryland
Maccubbin, Harry Pearce, B.S..Maryland
Markline, Simeon Van Trump, A.B.
Maryland
Martin, Clarence Wilbur.....Maryland
Maryanov, Alfred Richard.....New York
Mathers, Daniel Hutchinson, A.B.
Maryland
McCann, Harold Francis, A.B.
West Virginia
McClung, James Edward, A.B.
West Virginia
McClung, William Dennis...West Virginia
McDaniel, George Croxton, A.B.
Maryland
McKinnon, William James, A.B.
North Carolina
Meade, Forest Chauncey.....Maryland
Miceli, Joseph, A.B.....Maryland
Molz, Edward Louis, B.S.....Maryland
Murphy, Frederick Elbert, Jr., A.B.
Georgia
Muse, William Travers, B.S.....Maryland
Myers, George Roger, Jr., A.B..Maryland
O'Hara, James Francis, B.S.....Ohio
Pico, Guillermo.....Puerto Rico
Pierpont, Ross Zimmerman.....Maryland
Pigford, Robert Toms.....North Carolina
Platt, William.....Maryland
Pollock, Arthur Edgar, B.S. .Pennsylvania
Posner, Leonard, B.S.....New York
Pound, John Costello, A.B.....Maryland
Rhode, Charles Martin, A.B....Maryland
Richter, Conrad Louis.....Maryland

Robinson, Raymond Clarence Vail
Maryland
Roop, Donald James, A.B.....Maryland
Rothschild, Carl Eliot, B.S.....China
Russell, Thomas Edgie, Jr., B.S.
Maryland
Russillo, Philip Joseph, A.B...Connecticut
Schlesinger, George Gerard, B.S.
New York
Sims, Thomas Courtland, A.B., B.S.
West Virginia
Sloan, Joseph Wright, B.S.....New Jersey
Smith, James Brady, B.S.....Maryland
Smith, Ruby Arden.....West Virginia
Squillante, Orlando John, B.S.
Rhode Island
Stayton, Howard Nehemiah, Jr., A.B.
Delaware
Supik, William Joseph.....Maryland
Tankin, Louis Haberer, A.B.....Maryland
Thompson, Alexander Frank, A.B.
North Carolina
Tompakov, Samuel, A.B.....Maryland
Townshend, Wilfred Henry, Jr., A.B.
Maryland
Trevor, William, A.B.....Maryland
Triplett, William Carryl.....West Virginia
Waite, Merton Theodore.....Maryland
Weeks, William Earl, B.S..North Carolina
Wilkins, Jesse Lee, B.S.....Maryland
Williams, Herman Joseph, B.S.
Pennsylvania
Williams, Richard Talbot, A.B.
Maryland
Wilson, Harry Thomas, Jr.....Maryland
Wolff, William Irwin, B.S.....New York
Wright, James Rhodes, A.B.
North Carolina
Zinkin, Solomon Bernard, A.B.
New Jersey

SECOND YEAR CLASS 1938–39

Alberti, Aurora Frances, A.B...New York
Alexander, Fred, A.B.....New Jersey
Barnett, Charles Phelps, A.B....Maryland
Baxley, Joshua Warfield, III, B.S.
Maryland
Bowen, Joseph John, B.S.....Connecticut
Brooks, Julius Culpepper, Jr., B.S.
Tennessee
Bundick, William Ross.....Maryland
Checket, Pierson Melvin, A.B...Maryland
Chiqués, Carlos Miguel.....Puerto Rico
Conlen, Richard Alexis, B.S...New Jersey
Cooper, LeRoy Gerald, A.B.
Pennsylvania
Crecca, Joseph Vincent, B.S...New Jersey
Croce, Gene Albert, B.S.....Rhode Island
Cruikshank, Dwight Phelph, Jr., A.B.
West Virginia
Culler, John McCleary, A.B.....Maryland
deVincentis, Michael Louis, B.S.
Maryland
Diez-Gutierrez, Emilio.....Puerto Rico
DiPaula, Anthony Francis, A.B.
Maryland
Esnard, John Edward.....California
Evola, Camille Mary, A.B.....New York
Frey, Edward Leonard, Jr., A.B.
Maryland
Garcia-Blanco, José.....Puerto Rico
Gelber, Julius, A.B.....New York
Goodman, William, A.B.....Maryland
Graziano, Theodore Joseph, A.B.
Maryland
Hedrick, Thomas Ardis.....West Virginia
Hershner, Newton Webster, Jr., B.S.
Pennsylvania
Hollander, Asher, A.B.....Maryland
Hunter, James Stanley, Jr.....Maryland
Jaffe, Vita Rebecca, B.S.....New York
Kemp, Norval Foard, A.B.....Maryland
Krulevitz, Keaciel Kenneth, B.S.
Maryland
Lach, Frank Edward, B.S.....New Jersey
Leslie, Franklin Earl, A.B.....Maryland
Levinson, Lorman Leon, A.B....Maryland
Licha, José Salomon.....Puerto Rico
Lowe, William Cook, B.S.....Maryland
Lusby, Thomas Frank, A.B.....Maryland
Mandel, Jacob Barry, M.S....New Jersey
Matthews, Henry Steadman, A.B.
North Carolina
Mitchell, William Arthur.....Maryland
Molinari, José Gilberto.....Puerto Rico
Morris, Felix Raymond, B.S.
Connecticut
Morrison, William Herbert.....Maryland
Nolan, James Joseph, B.S.....Maryland
Novoa-Caballero, Miguel.....Puerto Rico
Ortiz, Idalia Ortiz, B.S.....Puerto Rico
Palmer, Margaret Virginia, M.A.
Maryland
Pasamanick, Benjamin, A.B....New York
Pearcy, Thompson, A.B.....West Virginia
Perman, Joshua Melvin, A.B....Maryland
Pruitt, Charles Eugene, A.B.....Maryland
Renna, Francis Stanley, A.B...New Jersey
Revell, Walter Jones, B.S.....Georgia
Richardson, Charles, Jr.....Maryland
Richmond, Marion Ballard, B.S.
Maryland
Richter, Christian Frederick, Jr., B.S.
Maryland
Rosenberg, Jonas Samuel, A.B.
New York
Rossberg, Clyde Arthur, A.B....Maryland
Sasscer, Robert Bowie, A.B.....Maryland
Sawyer, William Hamilton, A.B.
North Carolina

Schwartz, Stanley Eugene, B.S.
New York
Seigman, Edwin Lincoln, Jr., A.B.
Maryland
Shannon, Edward Patrick, Jr., B.S.
New York
Sheehan, Joseph Chester, B.S....Maryland
Sherrill, Elizabeth Brown.....Maryland
Spencer, Tracy Neil, Jr., A.B.
North Carolina
Spinnler, Henry Robert, B.S...New Jersey
Stevens, John Sutehall, A.B...Connecticut
Strayer, Webster Mills, Jr., A.B.
Maryland
Traynor, Francis Willoughby, B.S.
Maryland
Trevaskis, Richard White, A.B.
Maryland
Ulrich, George John, A.B.....Maryland
Virusky, Edmund Joseph, B.S.
Pennsylvania
Walker, James Haward, A.B.
West Virginia
Wall, Lester Aubrey, Jr., A.B...Maryland
*Ward, Charles Monroe, B.S.
West Virginia
Watkins, Dayton O'Lander, B.S.
Maryland
Wells, John Bernard, Jr., B.S....Maryland
Wilder, Thomas Carroll.....Minnesota
Wilson, Edwin Forrest, A.B.....New York
Yanagisawa, Kazuo, A.B.....California
Young, John David, Jr.....Maryland
Zierler, Kenneth Levie, A.B.....Maryland

FIRST YEAR CLASS 1938–39

Adam, Alberto Lotfalla.....Puerto Rico
Ahroon, William Alstrom, A.B...Maryland
Bacharach, David Nathan, Jr., A.B.
Maryland
Barthel, Robert Amthor, Jr.....Maryland
Bassan, Morton Edward, A.B....Maryland
Bennett, Van Boring, A.B.
North Carolina
Bird, Joseph Gordon, B.S.....Maryland
Bowen, Francis Dorsey Thomas, B.S.
Maryland
Brodsky, Alexander Emmanuil, B.S.
Maryland
Byerly, William Luther, Jr., B.S.
South Carolina
Carey, Richard Alexius, B.S.....Maryland
Carper, John Dalton, A.B.....Maryland
Coffman, Harry Franklin, II, A.B.
West Virginia
Concilus, Frank, A.B.....Pennsylvania
Courtney, Donald Lawrence.....Oregon
Cox, Matthew Mordica.....Maryland
Crane, Warren Eugene, B.S....New Jersey
Davies, Thomas Eugene.....Pennsylvania
Davila-Lopez, José G., B.S....Puerto Rico
Davis, John Russell, Jr., A.B.
West Virginia
Day, Newland Edward.....Maryland
Dillinger, Karl Anthony....West Virginia
Dougherty, Patrick Francis, B.S.
Maryland
Eaton, William Robert, A.B.....Maryland
Eckles, Eleanor Natalie, A.B.
Pennsylvania
Fallin, Herbert Kirk, A.B.....Maryland
Ferrer, Olga Maria, B.S.....Cuba
File, Richard Cushing, B.S.....Illinois
Franz, John Howard, A.B.....Maryland
Friedman, Marion, B.S.....Maryland
Fuertes, José Rodriguez, B.S.
Puerto Rico
Furnari, Joseph Charles, B.S.
Pennsylvania
Gillis, Andrew Colin, Jr.....Maryland
Goldsmith, Jewett, A.B.....Maryland
Gramse, Arthur Edward, A.B.
Massachusetts
Greaves, Lyman Bowen, B.S.
Connecticut
Greer, Margaret Alta, B.S.....Maryland
Gregory, Exie Mildred.....West Virginia
Hamburger, Morton Leonard, B.S.
Maryland
Howard, Samuel Clinton, Jr., B.S.
Georgia
Hubbard, Prevost, Jr., B.S.....New York
Ingram, Albert Lester, Jr., B.S.
Delaware
Irwin, Robert Clark.....New Jersey
Jones, Everett Davis, A.B.....Maryland
Kardash, Theodore, B.S.....Maryland
Keeley, Joseph Francis, Jr., A.B.
Connecticut
Kenyon, Harold Arthur, A.B.
Massachusetts
Kiefer, Robert Allan, A.B.....Maryland
Klijanowicz, Stanley Benedict, Ph.B.
Maryland
*Knight, Julian Holt.....North Carolina
Kolb, Edwin Paul, Jr., A.B.....New York
Koleshko, Lawrence Jacob, B.S.
Connecticut
Krepp, Martin William, Jr.....Maryland
Kroll, John Gregory, A.B....Pennsylvania
Kundahl, Paul Charles.....Maryland
Langfitt, Frank Valentine, Jr., A.B.
West Virginia
Link, Etta Carolyn.....Maryland

* Did not complete the year.

Longwell, Robert Hamilton, B.S.
Pennsylvania
Lowitz, Irving Robert, B.S.....Maryland
Manganiello, Louis Otto, A.B.
Connecticut
Mansfield, Thomas Bonaventure, B.S.
Maryland
Marino, Frank Sebastian, A.B.
Connecticut
Mazer, Robert, B.S.....Maryland
McCosh, James Nathaniel, Jr., A.B.
Maryland
McGoogan, Malcolm Thomas, Jr...Georgia
Meli, John James.....Pennsylvania
Miller, Edgar Allen, Jr., A.B.
Pennsylvania
Moses, Robert Abram, A.B.....Maryland
Mullins, George Roy, Jr.....West Virginia
Orofino, Caesar Francis.....New York
Osborne, John Carlton, B.S.....Maryland
Phelan, Patrick Carey, Jr., A.B.
Maryland
Phillips, Otto Charles, A.B.....Maryland
Posey, Dale Morton, B.S....Pennsylvania
Ritchings, Edward Peyton, A.B.
Maryland
Roman-Artiguez, José R.....Puerto Rico
Rosin, John David, A.B.....Maryland
Rousos, Anthony Peter, A.B....New York
Sadler, Henry Harrison, Jr., A.B.
Maryland
Sadowsky, Wallace Hyman.....Maryland
Sborofsky, Isadore, B.S.....Maryland
Scott, Joseph Whiddon, A.B.....Florida
Sharp, James Henderson, A.B.
Pennsylvania
*Shea, Lawrence Joseph, B.S.
Connecticut
Shepherd, Frederick Parker, A.B.
New Jersey
Shipley, Edgar Roderick, A.B...Maryland
Shub, Maurice Isaac, A.B.....Maryland
Shuman, Louis Harry, A.B.....Maryland
Stegmaier, James George.....Maryland
Summa, Andrew Anthony James, A.B.
New York
Townsend, Francis James, A.B.
Maryland
Vagnina, Livio Louis, B.S.....New Jersey
Van Lill, Stephen Joseph, III, A.B.
Maryland
Wallace, Joseph, Jr., A.B....Pennsylvania
Williams, Charles Herman, A.B.
Maryland
Williamson, Edgar Percival, Jr., A.B.
Maryland
Zimmerman, Loy Miller.....Maryland

* Did not complete the year.

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(Here state amount or describe property)

To Endowment Fund

I give, devise and bequeath to the Trustees of the Endowment Fund of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic.....

(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING

The University of Maryland School for Nurses was established in the year 1889. Since that time it has been an integral part of the University of Maryland, coming under the same government. It is a non-sectarian school, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 400 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing.

Programs Offered: The programs of study of the school are planned for two groups of students: (a) the five-year group, (b) the three-year group.

The requirements for admission to the five-year program of the School of Nursing are the same as for other colleges of the University. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland and to the diploma of the University Hospital School of Nursing.

The requirements for admission to the three year program are the satisfactory completion of an academic course in an approved high school. The completion of this course entitles the student to the diploma of the University of Maryland School of Nursing. Blank certificates will be furnished upon application to the Director of the School of Nursing.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established in 1899 and incorporated on December 23, 1901. It has developed the art of the profession according to the high standard necessary to qualify as a Registered Nurse.

The rapid growth of the institution, attested by the increasing number of its graduates, is evidence of the active part it takes in the health of the community. Through its connection with the Mercy Hospital its opportunities are unlimited. By its affiliation with the University of Maryland it has the advantage of the best professors for the instruction of the nurses.

The University of Maryland, in affiliation with the Mercy Hospital School of Nursing, offers a five year combined Academic and Nursing program. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland, and to the diploma of the Mercy Hospital School of Nursing. Graduate nurses who hold college degrees are greatly in demand, especially for positions in administration and teaching institutions. This program consequently offers a distinct advantage.

INDEX

University Hospital