

GENERAL STAFF MEETING
UNIVERSITY HOSPITALS
UNIVERSITY OF MINNESOTA

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I. ANNOUNCEMENTS

1. Discontinued:

No Pathological, Tumor Conference, nor Weekly Staff Meeting during summer months. Will be resumed in September (date to be announced.)

2. Henry E. Michelson

leads group from Dermatological Staff to Annual Meeting of American Dermatological Association, 54th Annual Session, Toronto, June 15th, 16th, and 17th, 1931 to read Contribution II. The Superficial Lymph Glands in Early Syphilis with Elmer M. Rusten. Paper on Pemphigus Neonatorum Congenitus or Impetigo Neonatorum Congenita by Charles D. Freeman, M. D., St. Paul. Also, Tuberculide en Plaque by Samuel E. Sweitzer, M.D., Minneapolis. Also, Erythema Annularae Centrifugum by John Butler, Minneapolis. In same direction but with different destination, John Madden, to attend meeting of American Medical Association, Philadelphia, to exhibit in Dermatological Section of Scientific Exhibit, and to read paper on Lupus Erythematosus Acuta, Friday, June 13th. Very active group making way steadily forward and bringing to our organization excellent service and attention, and respect of Dermatologists elsewhere.

3. Attendance Record

	<u>Winter</u>	
	&	<u>Total</u>
	<u>Spring</u>	

(Not including today and one special meeting, Lee) 20 32

Anderson, Arnold	11	19
Anderson, Karl	9	16
Benson, Thomas Q. (new fellow 1/1/31)	16	16
Berglund, Hilding	10	18
Berkwitz, Nathan J.	8	11
Boynton, Ruth	6	6
Campbell, Orwood J.	1	1
Carlson, Herbert	15	25
Chunn, Stanley	6	6
Cranston, Robert	8	8
Creevy, C. Donald	12	22
Diehl, Harold	6	11
Dvorak, Harold	14	23

	<u>Winter</u>	<u>Total</u>
	&	
	<u>Spring</u>	
	(new fellow 1/1/31)	
Engle, Rudolph	17	17
Erickson, Lester	18	28
Evans, Edward	2	5
Exner, Frederick	20	29
Fallon, Madge	10	22
Fellows, M. Fording	14	26
Fowler, Haynes	1	1
Gray, Royal	8	17
Guthrie, Major	4	4
Hamilton, A. S.	1	1
Hansen, Arild	20	30
Hanson, Cyrus	20	31
Henrikson, Earl (new fellow 1/1/31)	19	19
Herbst, William	3	5
Hutchinson, C. J.	17	24
Hymes, Charles	1	3
Johnson, Reuben	8	9
Kasper, Gene	13	23
Kertesz,	13	13
Kvitrud, Gilbert	12	12
Lane, Laura	2	4
Lang, Leonard	12	20
Leggitt, Elizabeth	2	2
Leonard, Bennie	6	6
Leven, N. Logan	16	28
Levine, N. L.	6	6
Litzenberg, Jennings C.	5	9
McKinlay, Chauncey	10	15
McKinley, J. Charnley	6	8
McKinney, F. S.	1	1
McQuarrie, Irvine	13	21
Madden, John	13	23
Manson, Melville	17	24
Mead, Charles (left 1/1/31)	12	12
Michelson, Henry	1	5
Moen, Joe	17	23
Myers, J. A.	1	2
Newhart, Horace	1	2
O'Brien, Wm. A.	19	30
Pearson, Bjorne (new fellow 1/1/31)	19	19
Peyton, Wm. T.	16	24
Radl, Robert	20	32
Randall, Osmer (new fellow 1/1/31)	15	15
Reimann, Hobart	14	23
Rice, Carl (left 1/1/31)	11	11

Attendance Record (Cont.)

	<u>Winter</u> & <u>Spring</u>	<u>Total</u>
Rigler, Leo	17	27
Rufe, Redding	18	20
Rusten, Elmer	18	22
Sagel, Jack	16	26
Scott, Horace	14	14
Shapiro, M. J.	4	10
Stenstrom, Karl	17	26
Stewart, Chester	8	9
Stoesser, A. V.	14	25
Thompson, Willis	19	29
Ulrich, Henry	12	17
Wangensteen, Owen H.	16	27
Wethall, Anton G.	0	2
Wetherby, Macnider	14	26
White, S. Marx	1	1
Wildbush, Frank	3	7

	<u>Winter</u> & <u>Spring</u>	<u>Total</u>
Samuelson, Gordon	8	18
Schwegler, Raymond	13	26
Thompson, Floyd	12	13
Tuohy, Edward	17	27
Weisiger, Ross	10	20
Zackman, Leo	11	22

Interne Records

1st - Alex Blumstein	29	(32)
2nd - Edward Tuohy	27	(32)
3rd - Clyde Cabot	26	(32)
Raymond Schwegler	26	(32)

Record for year

Dr. Robert Radl high man -
32 meetings (32)

Dr. Cyrus Hanson - second -
31 meetings (32)

Dr. Arild Hansen - third -
30 meetings (32)

Several others have maintained
excellent records but started
later in year.

Interne Attendance

	<u>Winter</u> & <u>Spring</u>	<u>Total</u>
Blumsteen, Alex	17	29
Bulinski, Theodore	9	9
Cabot, Clyde	15	26
Fignshaw, Bernice	13	13
Fisher, L. J.	17	23
Frary, Louise	14	25
Halpern, David	11	16
Hedin, Raymond	14	18
Hilleboe, Herman	18	19
Kchoo, Emmet	15	16
Koucky, Rudolph	12	25
Littig, John	11	23
Parsons, Ralph	13	23
Roe, Harold	13	15

4. Autopsies

Ref. Boyd, D. A., and Gordon, B. The Modern Hospital, xxxvi, 87-89, (June) 1931. "Winning Consent for Autopsies by Tact and Consideration" from medical service of Dr. Thomas McRae and the department for the disease of the chest, Jefferson Hospital, Philadelphia. Generally recognized that study of fatal illness is incomplete without postmortem examination. Percentage of necropsies is best single index of professional efficiency of hospital. Most widely effective procedure in obtaining permission is that in which intern, under direction of resident physician, interviews relatives and is responsible to superintendent and chiefs of service. Cooperation of funeral directors is necessary.

Seems fair to assume that an autopsy should be performed on the majority of hospital patients who die before 65. (Note: Why not after 65?). Peter Bent Brigham Hospital, Boston found percentage could be considerably increased if kindly consideration was shown relatives by hospital. Failures are largely due to erroneous impressions and prejudices acquired by relatives through hearsay or previous hospital experiences. Thoughtless acts cause lasting resentment.

Book. - Jefferson Hospital (1926) began use of book called "fatal case book". Intern was to record fully all experiences that might have had bearing on question of autopsy. In addition he was to discuss situations that arose and the results (constructively.)

Present paper is review of book. 14 interns on duty, each with service of three months. Patients remained in hospital from few days to seven months. Total number of deaths (127). Permissions (62.9%). 50 males (62.5%), and 30 females (37.5). Total deaths 86 men, permissions (58%), 41 women, permissions (73%). Permissions granted most readily by male relatives. Negroes more willing than whites. Native whites higher than those of immediate foreign extraction. Specific influence of nationality and religion is difficult to prove, largely because in same individual, prejudice, revulsion, sentiment or lack of familiarity with customs may have existed.

Relationship: -- Number expressing

opinion favorable, percentage, nationality and religion:

Relationship, Nationality and Religion of those granting Permission for Autopsies.

<u>Relationship</u>	<u>No. Expressing Opinion</u>	<u>Favorable</u>	<u>Percent</u>
Husbands	16	12	75
Wives	34	12	35.3
Fathers	16	9	56.2
Mothers	22	11	50
Brothers	21	17	80.8
Sisters	34	20	58.8
Sons	8	5	62.5
Daughters	10	2	20

<u>Nationality</u>	<u>No.</u>	<u>Granted</u>	<u>Pct.</u>
American White	39	25	64
American Negro	27	23	85.1
Foreign born or of immediate foreign extraction:			
Irish	7	5	71.5
Jewish	8*	2	25
Polish	3	0	0
Lithuanian	3	2	66
English	4	4	100
German	4	4	100
Italian	15	5	33
Miscellaneous	7	4	57.2
Undetermined	10	6	60

<u>Religion</u>	<u>No.</u>	<u>Granted</u>	<u>Pct.</u>
Jewish	9*	2	22.2
Catholic	38	20	56.6
Protestant	47	37	78.7
Greek Orthodox	2	0	0.0
Undetermined	31	21	67.6

*Difference in figures due to a change in religious views (1 instance.)

It appears in data, daily experience in hospital and actual situation at time of death are perhaps more important than influences mentioned above. Feeling of gratitude, regardless of race or religion, was responsible for permission in 34 instances (42%). No argument used. Nearest relatives were approached in sympathetic manner as affairs of patient were closed with hospital. With those prejudiced or indifferent, it was emphasized that autopsies were usually performed. This was a gesture rather than an argument and as result 16 permissions

(20%) were obtained. It was pointed out on several occasions that the duty toward hospital was no less as important a duty as burying dead. Although personal feeling was keen, obligations were recognized and permission granted in 9 instances (11.25%). In other cases, if failure to obtain permission was imminent it was suggested that autopsy might restore health to some critically ill patient or might reveal some hidden disease in family. Successful in 14 cases (17.5%). Mention of rare condition or sudden complication brought a response in 5 (6.2%). Obtaining information so as to properly fill out insurance papers, mentioned as last resort, was successful in 9 cases (11.25%).

In further study attitude toward hospital was more important factor than ancestry, religion and worldly associations. Increase in percentage of autopsies was in direct proportion to length of stay except after 100 days when slight reduction occurred. Increase due apparently to feeling that everyone was working to make patient comfortable and well. Decline after 100th day usually due to false impression.

Number interviewed: Number of relatives necessary to interview very important. Permission obtained in 55 cases (74.5%) when only one was interviewed; 17 cases (56.5%) when two; 5 cases (35.7%) when 3; one instance when 4. No permission if contacts were made with more than 4. Except case of undertakers who assisted in 2 instances, help outside of family was wholly unsuccessful. This applied especially to interpreters and lay people with slight medical knowledge. Use of telephone and telegraph were unsuccessful. (Note: not our experience.)

Conclusion: It appears that most important contributing factor is good will created by Hospital. When intern is familiar with racial and religious tendencies and is thoughtful and alert at time of death, the percentage may be increased.

Experience shows that care should be taken in selecting responsible relative for interview, carefully avoiding others especially those with unfavorable views. Apart from its possible contribution to scientific medicine a systematic effort to obtain autopsies may throw light on effectiveness of hospital administration.

As percentage of necropsies is index of professional efficiency of staff, it may also be indicative of hospital's position in community. Stated in another way, high percentage may be obtained only if hospital shows keen consideration for social status of potential and actual hospital population.

5. Editorial

University Hospital Staff Reports

The writer has recently had the loan of an unusual document developed intramurally by the University of Minnesota Hospital staff. In addition to a report of the clinico-pathological weekly conference and some snappy news items, the necropsy reports are interspersed with timely comments and deductions. But the most striking feature consists of the unusual abstracts from the literature, usually inspired by the cases under discussion and study.

Students and practitioners have long wanted some reliable, authoritative, easily available statement of current opinion or expression on outspoken clinical entities or syndromes. Text books rarely meet the need because so all-inclusive; much specific information is widely dispersed. A good text is scarcely written before it is incomplete. Then not all doctors have easily available the library and journal facilities found at our universities.

Therefore a set-up of "abstracts" dealing with a subject like "Jaundice" or "Lung Malignancy" has a mine of fresh, vivid and useful information, quickly orienting the reader to permit him to meet patients who have such disorders with greater decision and accuracy. It is to be hoped that in time these reports will expand into a publication for general use and distribution.

E.L.T.

Minn. Med. XIV, 561 (June) 1931.

Thank you very much!

6. Pacific Northwest Medical Association.

9th Annual Meeting, Seattle, Washington, June 25, 26 and 27, 1931. Open to all

members of medical profession in good standing in their local county medical society: dues--\$15.00. Speakers - Arno B. Luckhardt, Dean Lewis, Charles R. Austrian, Leslie T. Webster, A. Elmer Belt, Samuel R. Cunningham, Frederick L. Reichert, Owen H. Wangensteen, William Dock, Leo G. Rigler, Walter Simpson, Cyrus Sturgis, Robert F. Ridpath. Subjects: Studies on the Knee Jerk with Practical application Arising from These Studies (Illustrated), Infections, some Non-tuberculous Basal Pulmonary Infections, A Review of Experimental Epidemiology, Perineal Prostatectomy; the Closed Method, The Diagnosis and Treatment of Fractures of the Vertebral Column. The Tics of the Cranial Nerves, The Diagnosis and Treatment of Acute Intestinal Obstruction, Clinical Significance of the Electrocardiograph, Roentgen Diagnosis of Pleural Disease, Tularemia, Treatment of Pernicious Anemia, Our Knowledge of the Parathyroid Glands (Illustrated), Tumors of the Breast, Occlusion of the Coronary Artery, Modern Problems in Human Epidemiology, The Transverse Cystotomy; a safe Method of Opening the Bladder, Treatment of Fractures of the Upper Extremities, The Helpful Points in the Diagnosis and Treatment of Brain Tumor, The Surgery of the Undescended Testis, The Estimation of Myocardial Damage, Roentgen Diagnosis of Heart Disease, Undulant Fever, Diagnosis and Treatment of Myxedema, High Lights and Shadows in the Discovery of General Anesthesia (Illustrated), Vascular Lesions of the Extremities, Empyema, Resistance of Infectious Disease, Urinary Afflictions of Childhood, Treatment of Fractures of the Lower Extremities, The Treatment of Peripheral Nerve Injuries, The Surgery of Carcinoma of the Stomach, Cardiac Medication in Theory and Practice, Benign and Malignant Tumors of the Stomach, A Correlation of the Clinical and Pathological Concepts of Hyperthyroidism, Various Methods in Use in the Control of Edema. Consideration of--The Nasal Septum, the Lateral Nasal Wall, Maxillary, Frontal, Ethmoid and Sphenoid Sinuses, the Larynx (Anatomy, Physiology, Pathology, Diagnosis, Treatment). Daily sessions combined in morning, 8:30 to 12:30, split into surgery and medicine in afternoon, 2:00 to 6:00. In addition, Otolaryngology, daily sessions 10:00 to 12:00 and 2:00

to 5:00. Each speaker in general surgical and medical sessions speaks three times, Otolaryngology all of the time. Banquet on second day. Pre-session clinics on Monday, Tuesday and Wednesday. We are honored by selection of staff members Wangensteen and Rigler. The Pacific Northwest Medical Association is to be congratulated for wise selection from our group to take place with celebrities from elsewhere. Note: selection of men rather than subjects, relatively few presentations of malignant subjects, more clinical bacteriology and epidemiology than usual.

II. ABSTRACT :

PEMPHIGUS

Reference: Diseases of the Skin, Stelwagon and Gaskill, 9th edition, W. B. Saunders and Co., 371-384, 1921.

Definition: Pemphigus is acute or chronic bullous disease, characterized by scanty or irregularly scattered, variously sized, rounded or oval blebs, arising from apparently normal or moderately reddened skin with or without mild or severe constitutional disturbance. Numerous varieties are in many respects purely arbitrary. Based chiefly upon duration, age, clinical characters and behavior of eruption. Difficult even for trained dermatologists to know what to include under heading at times: e.g., cases still considered pemphigus by German writers, have been gathered together by others and group called dermatitis herpetiformis of Duhring. Blebs do not make pemphigus. May be seen in urticaria (u. bullosa), erythema multiforme (e. bullosum), dermatitis herpetiformis, pompholyx, dermatitis venenata, leprosy, and others, (blebs may be accidental or unusual manifestation of disease). Pemphigus lesions are primary bleb formation of more or less general distribution without ring or other peculiar formation or tendency to group, appearing irregularly or in successive crops, and, as general rule, running chronic course, with exacerbations. Subjective symptoms usually consist of tenderness, soreness, and burning, and

less frequently itching, which, however, may be intense.

Varieties: *P. acutus*, *p. chronicus*, *p. foliaceus*, and *p. vegetans*. Terms benign, malignant, gangrenous, hemorrhagic, etc. are descriptive. *P. contagiosus*, *P. neonatorum*, *p. epidemicus* represent extensive and grave types of impetigo contagiosa, not true pemphigus.

Symptoms: (A) Acute pemphigus includes all cases in which course is more or less limited, and terminates within several weeks or few months, in recovery or death. No doubt as to its existence although it was at one time denied. Seen in children (of early age) and occasionally in adults. Found in young girls between period of puberty and full sexual maturity, menstrual difficulties (*p. virginum* and *p. hystericus*). Clear types, eruption usually comes out suddenly, with premonitory symptoms of malaise, slight or severe febrile reaction, chilliness or rigors, mild or grave systemic disturbance. Reference: Pernet and Bulloch, "Acute pemphigus: A Contribution to the Etiology of the Bullous Eruptions," Brit. Jour. Derm., 1896, pp. 157 to 205. This is said to be one of the best papers written on the subject. Note - date. Lesions vary from pea to pigeon's egg or larger, abundant, and irregularly distributed; distended or flattened, come out at one time or in crops, arising from skin showing no preliminary changes as rule. Some are surrounded by a narrow red halo. Generally, clear at first, becoming milky and opaque, sometimes hemorrhagic, and exceptionally gangrenous. In others there is no constitutional reaction, in some febrile action and other symptoms continued for first week or two, until cutaneous changes begin to heal usually followed by complete recovery in several weeks to one or two months. In grave cases, throat and mouth show serious involvement, in fact, frequently first symptoms are seen here, death usually follows in from one to several weeks. In some, after one or more acute outbreaks becomes less active, lesions less numerous, and goes into chronic form. The blebs may disappear, with or without previous accidental or spontaneous rupture; when crust falls off, slight temporary redness or staining is noted, but no permanent trace

left usually. See comments under prognosis.

(b) Pemphigus Chronicus: Usual form (*p. vulgaris*). Like other varieties uncommon especially in this country? Blebs continue to appear more or less incessantly, skin being, as rule, never free. Intervals may vary in comparative or complete freedom. Appear irregularly with a tendency to exacerbation, crust over and disappear and so malady continues. Mouth and throat may be involved. Disease may have beginning in these parts, but not so frequently as acute variety. Conjunctivae may be involved, followed by changes in eye. Hemorrhagic tendency is frequently present. Runs course, and crusts over in several days to two weeks. No permanent trace left or slight pigmentation. Constitutional symptoms vary. Subjective symptoms variable. May finally end in recovery or terminate fatally, course usually being long and indeterminate.

(C) Pemphigus Foliaceus; Very rare? may start or develop from acute or chronic form. In others generalized cutaneous edema, scaly greasy surface or dermatitis herpetiformis. Blebs form so rapidly and quickly distended bulla not seen. Flat or but slightly raised, scarcely dried to crust before another flaccid lesion forms beneath. Lesions may become purulent and gradual undermining of surrounding epidermis is seen. Eruption usually abundant and generally distributed and may involve almost entire surface. Large red, raw, oozing surfaces where crusts have been removed or rubbed off. Fissures (Case I) occur about joints and there is a pervading foul odor about patient. Nails and hair brittle and sometimes shed, eyes are sore-looking, mucous membranes share in disease, there is increasing gravity of constitutional symptoms, and, in majority succumbs to exhaustion, pyemia, or intercurrent disease. Exceptionally long intervals of freedom are seen. Malady is rare (?).

(D) Pemphigus Vegetans: (E. Bullousum) vegetans is said to be very rare. Early manifestations are usually seen in mouth, throat and upper lip. Whitish or reddish plaques then seen ordinary blebs appear on skin, but instead of

going through crusting and disappearance, vesicles or blobs form around a crust; base of such a patch becomes inflamed and often edematous, finally exhibiting papillomatous or condyloma-like vegetations. Several such plaques become confluent and form large areas. Seen usually on warm and moist surfaces (genital, anal and axillary regions). Progressive constitutional symptoms usually present from beginning, disease finally ends fatally. In favorable cases process gradually declines. Usually in cases where lesions are scanty and mainly about mouth (may be variable) or combined with other forms, chiefly foliaceous. Body heat at times below normal.

Etiology - Rare in United States, more in Europe? Occurs in both sexes, probably slight preponderance in females, usually in adults between 30 and 70. More frequent in Hebrews, especially rarer varieties. Causes are obscure and doubtless infective. Often beginning in mouth (18 out of 30 cases) in one report. Not due to sypilis although latter may give rise to pemphigoid eruption. Not hereditary. Disease with hereditary characteristic is epidermolysis bullosa. It is not probable that several so-called varieties are due to different causes, but to ingrafting of accidental factors upon same disease process. Acute pemphigus may have origin in septic wound. Animals or products may be source (vaccination). Bowen recites similarity to "foot-and-mouth" disease in cattle. Probable streptococcic infection. Other theory autotoxic fact. Other features nervous influences, such peripheral nerve injuries, diseases of central nervous system, functional nervous disturbance, etc. Association with nervous system (functional or organic) is brought out by many examples. As in other bullous diseases, eosinophilia is noted. Anemia may develop. Sometimes follows rheumatic fever, acute infectious diseases. Country districts seem to show more of vegetans type.

Pathology: Lesions on skin show upper roof wall is horny layer and lower is rete cells, in others the corium. Bleb doubtless due to sudden effusion from vessels of corium, following paralysis and dilatation. Inflammatory signs present. In others hypertrophy

of papillae and pronounced proliferation seen. Contents are serum.

Diagnosis: Must be distinguished from diseases, (previously noted). Diagnosis usually not difficult.

Prognosis: Caution must be exercised in expressing positive opinion as to final outcome. Active constitutional symptoms, behavior of lesions, extent of the eruption, previous and present health of patient are important factors. As general rule, cases in which more or less grave systemic disturbance are present, in which lesions become rapidly purulent, hemorrhagic or gangrenous, are usually fatal. Involvement of mucous membrane is unfavorable. Even slight systemic disturbance has serious import. Vegetating and foliaceous varieties may be of months' or years' duration. Septic types arising from wounds, (grave). Almost all cases unattended by fever or other constitutional reactions get well, although possibility of changing to severe type is to be kept in mind. As general rule, prognosis for milder cases is usually favorable, serious for others.

Treatment: Local and constitutional. Drugs seem to have influence. Arsenic, strychnine, large doses of quinine, iron, cod liver oil and linseed meal, opium, pilocarpin and atropine, Autoserotherapy, autogenous vaccine, change in environment, dietary (generous, plain). External applications are used following opening of blebs. Lotions employed in acute type of exzema with sediments are valuable. Dusting powders may be used. (Boric acid, bran baths, strach baths, gelatin baths and alkaline baths) followed by ointment. Severe types, continuous bath is to be employed, or (preferably interrupted). Carbolic acid for itching types. All treatments are to be carefully evaluated in view of known tendency to remission, Chronicity and recurrence, and delayed fatal outcome.

III. CASE REPORTS

1. ACUTE PEMPHIGUS (PEMPHIGUS VULGARIS MALIGNA ACUTA.

Note: Short duration - 4 months - (acuta) virulent course (malignant), not papillomatous (vegetans) or diffuse edema (foliaceus) but blebs (crusts, purulent hemorrhage) in crops (vulgaris). Unfavorable signs - involvement of mucous membrane, constitutional reaction, also start in month. Difficulty with transfusion to be discussed (see abstract). Development of offensive odor is sign of impending exitus?

This is the case of a white male, 34 years of age, admitted to University Hospitals 5-22-31 and died 6-3-31 (12 days).

Not well.

10--30 - Patient would become faint while driving car.

Winter 1930-1931 - Patient had spells of weakness but never has fainted. Had a cold for a long time this winter. Cough.

Mouth lesions

2-1-31 - Patient had a sore throat then a toothache. Had 3 or 4 teeth pulled. This was followed by a few canker sores which became worse and began to spread.

Arsenic therapy

3-11-31 - Patient consulted a physician who did not know exactly what the mouth condition was. When he consulted, there was more or less ulceration in the tonsillar regions and it was believed the condition was a Vincent's infection although the smear was negative. The condition seemed to be improving under treatment at first but later became exaggerated.

3-26-31 - Still under care of physician. Wassermann, several urine examinations and differential blood count were all negative. Patient was given two treatments of neosalvarsan with apparently no effect. He was also given Fowler's solution, intravenously, three times a day.

Skin lesions (blebs)

4-17-31 - Patient was sent to a local hospital and remained there until sent to Minneapolis. The ulceration of the mucous membrane of the mouth was improved but he has developed many skin lesions which came out in the form of blobs. While in the hospital, he has had daily baths and the skin lesions had

been treated with ammoniated mercury and sulphur ointments with little or no improvement. He was also given ultra violet rays and his diet has been rich in vitamins as the physicians believed, at one time, that he had a deficiency disease. The diagnosis of pemphigus was made by the physician. The first skin lesions were noted on the shaft of the penis but this later spread to the body and then finally in the hair. Patient lost about 20# weight and became quite weak.

Constitutional reaction

5-22-31 - admitted to the University Hospitals. Mouth is quite sore and has difficulty in eating. Patient is very weak and has a great deal of pain.

Physical examination: Patient is a white male, 34 years of age, lying in bed with great sores over the body, and lower lip, and is very emaciated weighing about 120#. Head - eyes negative.

Nose - some inflammation and exudate. Ears - negative. Mouth - foul odor, leukoplakia-like lesions over entire mucous membrane with some areas of injection which are very tender to touch. Tongue -- grayish, thick exudate over teeth and mouth.

Lungs - not adequately examined (to get x-rays.) Heart - blood pressure 122/64 and essentially negative. Reflexes - normal. Skin - patient has lesions of bullous type over entire body, mostly on arms, legs abdomen and back. These are round, coalescing, some lesions ruptured showing reddened, raw injected areas oozing with pus and bleeding.

Yellow crusts are present about the size of a pea to 4 or 5 inches in diameter. The same type of lesions are present on the shaft of the penis and scalp which are very tender and painful.

Diagnosis: Acute pemphigus. Laboratory- Urine - numerous wbc's and occasional rbc's. Blood - Hb. 78%, rbc's 4,030,000, wbc's 12,600, P 85, and L 15. Blood urea 20. Serum calcium 11.6.

Progress: Temperature 100 to 101. Pulse 92 to 120. Respirations 18 to 26. Weight 120#. Liquid diet. Potassium permanganate mouth wash 1 to 4000 q 3 h. Colloidal bath, 15 minutes, b.i.d. Vasoline to body with bandages. Throat filled with mucus. Feels fairly comfortable. P.M. - fairly comfortable. Refuses potassium permanganate mouth

wash. Slept very little. Takes fluids poorly. Says his mouth is too sore to even drink water.

Transfusion (exsanguination?)

5-23-31 - Liquid diet with cream and milk. Temperature 99 to 101.2. Pulse 100 to 140. Considerable drainage from lesions. Slight bleeding. Lesions feel much better after bath. Gets relief from vaseline. Medical transfusion. Pulse strong and regular. No complaints. 150 cc. of blood removed and 750 cc. of citrated blood given intravenously. 7:30 P.M. - Ss enema given with good results.

5-24-31 - Temperature 99.2 to 100.4. Pulse 110 to 140. Lesions seem to dry and there seems to be a slight amount of healing of those on arms. More lesions on back than yesterday. Complains of mouth being very sore. Patient's blood clotted so rapidly so that when a good sized cannula was in the vein, the clot would form right in the cannula. Attempts to bleed were made several times so that about 150 cc. was finally taken out. The fellow giving the transfusion had the opinion that the bleeding could only be done by cutting done on vein and this procedure did not seem advisable because cut area became markedly infected. Consequently 750 cc. of blood was given and well tolerated. Patient seems better today and eats well. Blood culture, Wassermann, blood urea nitrogen and blood calcium were taken. This transfusion done 5/23/31.

Sore mouth

5-25-31 - Equal parts of glycerine and lemon q 4 h. Mouth is very sore. Takes fluids well. Urinalysis - few wbc's and no rbc's. Blood culture - positive for B. subtilis. Clotting time 6 minutes 30 seconds, bleeding time 1 minute 30 seconds, platelet count 130,000, and Hb. 84%.

5-26-31 - Temperature 99.8 to 100.2. Pulse 110 to 130. Respirations 24 to 29. Condition is the same. No complaints, but, however, mouth is very sore.

Restless

5-27-31 - Urinalysis - 8 - 9 wbc's per high power field and no rbc's. Patient is quite nervous and restless. Gets out of bed several times. Has new lesions on ankle of right foot. Very restless and irritable. Mouth wash changed to

hydrogen peroxide and mercury bichloride q other 2 h. This is used in conjunction with potassium permanganate 1 to 4,000 q 2 h. 8:45 P.M. - M.S. gr. 1/4.

Septic

5-28-31 - New vesicles on arms, back and feet. Septic temperature up to 101.4, pulse 130. Mouth is very bad but eats well. Blood transfusion seems to have helped, so will do another one soon. Urinalysis - 76 - 8 wbc's per high power field. Complains of more pain than usual. Feels tired after bath.

Offensive Odor.

5-29-31 - Has increased offensive odor. Numerous new lesions on back, neck and lower abdomen. Complains of great deal of pain this morning. Feels cold, seems a little weaker, appetite is not as good. Temperature 101 to 103.2. Pulse 120 to 130. Respirations 26.

Pain

5-30-31 - Temperature 101 to 103. Pulse 130 to 140. Respirations 24. Patient seems to have a great deal of pain. Lesions are very sore. Patient seems weaker. Coughs a great deal. Some bleeding from mouth. Lesions on arms are not as sore or do not bleed as they did previously.

5-31-31 - Condition unchanged. Is more talkative and does not seem as exhausted. Complains of gas pains sometimes after eating.

Cough

6-1-31 - Slept for long periods. Lips very sore and bleeding this morning. Coughs more than usual. Patient complains of being weak and tired. Lesions seem to be healing. Mouth is quite sore. 9 P.M. - M.S. gr. 1/4.

Very ill.

6-2-31 - Temperature 102.2. Pulse 130. Respirations 24. Complains of pain in back, delirium at night. Complains of being very weak and a poor appetite. 11:45 A.M. - while using his mouth wash he had an emesis of 50 cc. of yellowish white fluid. 12 Noon - patient perspiring profusely and respirations are rapid. Temperature 100.4 to 102.6. Pulse 130 to 140.

Transfusion - exitus.

6-3-31 - Temperature 101 to 102. Pulse 120. Respirations 22 to 34. Patient expectorated a considerable amount of phlegm this morning. Lips bleeding. 1 A.M. - M.S. gr. 1/4. 12:45 P.M. - M.S. gr. 1/4. Lesions do not bleed but are quite sore on buttocks. 1 P.M. - fairly comfortable after hypodermic. 4:45 P.M. - to treatment room for blood transfusion. 5:35 P.M. - transfusion is begun. Medical transfusion of 250 cc. citrated blood, intravenously. 5:50 P.M. - patient began to feel weak and warm. Very pale and cyanotic. Pulse imperceptible. Transfusion discontinued. Artificial respirations for 10 minutes. Medications and stimulants were immediately administered. Artificial respirations. Patient gradually ceased breathing. 5:56 P.M. - patient expired.

Note by Interne: Medical transfusion begun by Internes. 500 cc. of donor's blood in 70 cc. of citrated blood. Blood strained through gauze into intravenous flask. Needle introduced into vein 5:35 P.M. At 5:50 P.M. - patient complained of feeling warm. 5:55 P.M. - complained of being very warm and became short of breath. Transfusion stopped. Caffeine sodium benzoate 7-1/2 grains were given subcutaneously and adrenalin 5 minims intravenously, at 5:55 P.M. Heart and respirations stopped at 5:56 P.M. Artificial respiration given for 10 minutes. He did not respond to any of the stimulation. Blood was checked by the laboratory and was found to be compatible.

Autopsy

The body is that of an emaciated, well-developed, white male, appearing to be about 40 years of age. Rigor is present. Hypostasis is purplish and posterior. There is no cyanosis nor jaundice. Each pupil measures 3 mm. in diameter. There are puncture wounds in both antecubital spaces. Skin: The skin lesions are quite generalized. They appear on the scalp, face, body and both extremities. They are characterized by irregular depressed areas extending plainly down to the cutis and dermis and in these areas are completely drawn. The walls are about an eighth of an inch deep. The bases of these areas are quite clean and there are no bullae present at this time.

The surrounding skin appears filthy. These areas measure from .5 cm. in diameter to 4.0 and 5.0 cm. in length and 1.0 and 2.0 cm. in width, which are irregular but definite. Other areas appear punched out, round and moderately deep. All of these areas extend down to the cutis. It is said that these areas are quite extensive within the mouth but due to the fact that the patient's jaws were set the mouth was not opened. These areas are, also, on the lips.

PERITONEAL CAVITY. The abdominal wall measures 2 cm. in thickness. The peritoneal surfaces are smooth, moist and glistening. There are no abnormal masses. All of the organs are enlarged abnormally but are of normal relationship to one another. The APPENDIX is retrocecal and appears normal.

There is no increase in the PLEURAL CAVITIES. The surfaces are smooth, moist and glistening. All of the organs are in normal relationship to one another. The surfaces of the PERICARDIAL SAC are smooth and there is no increase in fluid.

The HEART weighs 275 Gm. The right side is markedly flabby and the left side is less so. There are numerous petechial hemorrhages beneath the endocardium. The valves are normal. The coronary vessels show early fatty intimitis which is fairly extensive. The ROOT OF THE AORTA shows early athero-sclerosis.

The LEFT LUNG weighs 600 Gm., the RIGHT 550 Gm. In the left lung, there is marked congestion at the base with emphysema present in the upper lobe. This lung floats. On section, the blood can be pressed out of all of the alveoli (profusely). It is mostly a picture of hypostatic congestion with a questionable slight amount of bronchopneumonia present. There is some congestion at the base of the right lung and there is marked emphysema present in the upper lobe.

The SPLEEN weighs 320 Gm. It is moderately firm. On section, congestion is shown. The pulp is purplish-red in color. The malpighian corpuscles are distinct. The pulp scrapes.

The LIVER weighs 2300 gm. It is firm, cuts with no increased resistance

and on section, the lobules and central vessels are distinct and grayish-brown in color.

The GASTRO-INTESTINAL TRACT and GALL-BLADDER are negative.

The PANCREAS weighs 100 Gm. and on section the lobulations are gray and distinct.

The ADRENALS are two in number and normal.

The LEFT KIDNEY weighs 225 Gm., the RIGHT 200 Gm. There is marked congestion in the medullary portion. The glomerulae are distinct and the capsule strips with ease.

The BLADDER and AORTA are normal.

The organs of the NECK are normal.

The HEAD is not examined.

There is a section of the lower dorsal spinal cord removed which appears somewhat soft. (See microscopic sections for final diagnosis.)

Diagnosis:

1. Pemphigus.
2. Anaphylaxis (Clinical - cause of death.)
3. Congestion of spleen, lungs, kidney and heart.
4. Fatty intimitis of coronary vessels.
5. Early hypostatic pneumonia (?).
6. Puncture wounds.

CASE 2. ACUTE PEMPHIGUS

(PEMPHIGUS VULGARIS MALIGNA? ACUTA).

Note: Duration five months (Acute) common type of bullous formation, (vulgaris) slightly less malignant course, later involvement of mouth (exacerbation), unfavorable signs (involvement of mucus membrane and constitutional reaction). Positive blood culture does not necessarily mean etiological relationship.

The case is that of a white male, farmer, 54 years of age, admitted to the University Hospitals 4-28-31 and died 5-13-31 (15 days.)

Scalp lesion (bullous?)

12- -30 - Developed a papulopustular lesion over the right temporal surface of the scalp. These soon began to ooze and spread over the entire scalp, producing

marked crusting and oozing. The lesion burned and itched. This remained stationary until March 1931.

Bullous lesions

3- -31- Noticed a small bleb-like lesion of the skin of the upper anterior shoulder. This broke and spread over the entire anterior surface of the chest. Large blebs would form and break open leaving a raw, oozing, sensitive surface. The lesions, also, appeared in the inguinal and axillary folds and both upper extremities.

Mouth involvement

4-7-31 - Patient noticed soreness and ulceration of mouth and palate, with feeling of sloughing of mucous membrane and much irritation when eating or chewing solid food. No real soreness of the throat was noticed.

Foot lesions

4-14-31 - Blebs began to form over the soles of both feet. Coughing, pain and difficulty in walking.

University Hospitals

4-28-31 - Admitted to University Hospitals. Physical examination: The patient is fairly well developed but poorly nourished, lying in bed with some distress and covered with generalized skin lesions. The scalp is entirely covered with thick, yellow crusts fissured every few mm. and showing a raw, oozing surface beneath. Marked fetor exoris is present. The whole buccal mucosa shows large bullous and raw areas. The skin shows several bullous lesions, averaging 5 or 6 cm. in diameter, over the back and anterior surface of the chest where the greatest part of the skin is involved. The axillary and inguinal folds are, also, involved. Over the sides of the thigh, there are lesions 1.5 to 3 cm. in diameter. Where the bullae had broken, there were present fiery red, oozing surfaces. The dorsum of the right hand and the whole circumference of the left wrist are involved. The soles of both feet have large, cushion-like bullae which are tender to pressure. The patient is given warm tub baths and the blisters are washed with boric acid and vaseline applied and bandaged.

Warm potassium permanganate mouth wash, 1 to 4000 solution given. Pulse 80. Temperature 99.4.

Constitutional reaction

4-29-31 - Patient feels better. Warm potassium permanganate mouth wash, 1 to 4000 solution, was given every 2 hours. Colloidal baths given b.i.d. Borvase-line applied to lesions. Urine negative. Blood - Hb. 76%, rbc's 4,000,000, wbc's 10,950, P 68, L 28, E 2 and M 2. Pulse 92. Temperature 100.4.

Worse, arsenic therapy

4-31-31 - Patient feels uncomfortable. The areas on the chest are bleeding. The mouth is, also, bleeding. New blisters on both arms are being formed. Tryparsamide 1 gm., intravenously. Urine negative. Pulse 80. Temperature 99.8.

5-2-31 - There is very little bleeding from the lesions. Vaseline strips applied to lesions. Mineral oil 1 oz. b.i.d. Quinine sulphate gr. v. b.i.d. Pulse 94. Temperature 100.6.

Bleeding

5-3-31 - There is considerable bleeding from the mouth. The eyes began to smart. A cradle is placed over the body to protect from bed clothing. Pulse 110. Temperature 101.2.

Better - worse (lesions)

5-4-31 - The areas over the chest are healing slightly. Crusts are forming on the scalp. Tryparsamide ii gr., intravenously. Magnesium sulphate i oz. is given. Oil retention enema is given with good results. Pulse 100. Temperature 102.

Chilly

5-7-31 - The scalp and mouth are improving. The lesions on the back are increasing. The patient feels chilly. There is some bleeding from the lesions of the buttocks. Urine is negative. Blood - wbc's 9,200, rbc's 2,800,000, P 85, L 12 and M 3. Pulse 120. Temperature 104.

Streptococci (blood culture)

5-8-31 - Progress note: Temperature is gradually rising. On April 29, 1930 it was 99.4 and has been of a definite septic type. May 7, 1931 temperature was 104 at 3 P.M., pulse 120. Patient has

no complaints and says that his mouth is healing. The bullous lesions are spreading more over the arms, legs and body each day. The blood culture is positive for streptococcus. Patient is gradually failing.

Weaker

5-11-31 - The nostrils are filled with pus and are quite tender. Patient is unable to eat but very little and is weaker. Complains of soreness on the buttock. M.S. gr. 1/4 given. Progress note: Temperature is starting to go down and pulse is going up. There is no pain and the patient is noticeably weaker. He cannot take much fluid, eats poorly and is too weak to take a bath. The lesions are spreading over face, chest, abdomen and upper arms. Pulse 132. Temperature 99.

Temperature down - pulse up.

5-12-31 - Progress note: Temperature is now staying around 99 to 100 and pulse 110 to 130. Pulse is weak and rapid. Respirations are 26 to 30 and are shallow. The patient is semi-conscious, complains of no pain, says mouth feels full mucus and debris, and only takes a sip of water and a teaspoon soft nourishment. The right eye is markedly inflamed and draining pus. Has some retention of urine.

Exitus

5-13-31 - The patient seems somewhat restless. There is an irritation in his throat causing him to cough. M.S. gr. 1/4 given three times daily. Breaths through mouth which is very dry and crusty. Patient chokes when trying to swallow. Great deal of exudate from the lesions and some bleeding from the lower areas on the back. The pulse is now very rapid and irregular. 10:00 A.M. - very drowsy. Responds, however, when spoken to. Pulse 142 and very irregular. 1 P.M. - Patient does not respond when spoken to. Pulse very irregular. Axillary temperature arose to 106.6 before death. 7 P.M. - breathing is labored. Pulse weaker, 138. Respirations 38. 9:15 P.M. - patient expired.

Autopsy

The body is that of a well-developed, poorly nourished, white male, measur-

ing 178 cm. in length and weighing approximately 130#. Rigor is present. There is no edema, cyanosis nor jaundice. The pupils are regular and each measure 5 mm. in diameter. The body is wrapped up in gauze and vaseline strips. The body emits a very marked odor. The lesions are generalized although they are more marked on the anterior surface of the chest, thighs and hands. The lesions of the face and scalp seem to have healed somewhat with crust formation. The anterior surface of the chest is practically covered by raw, oozing surfaces; and similarly, the hands, thighs and part of the back. Here and there, there are few bullae that had not yet ruptured. On the feet, there are also several bullae that have not ruptured.

The PERITONEAL CAVITY is opened and shows a normal glistening peritoneum; no fluid. The contents seem normal on section. The APPENDIX is subcecal and free.

The PLEURAL CAVITIES contain no fluid. The lungs show a moderate amount of anthracosis. The PERICARDIAL SAC contains a minimal amount of fluid.

The HEART weighs 360 Gm. All of the chambers and valves are normal. There is a slight amount of coronary sclerosis present. The ROOT OF THE AORTA shows a minimal amount of sclerosis.

The LEFT LUNG weighs 300 Gm., the RIGHT 425 Gm. There is a slight congestion of both bases but no signs of any beginning pneumonia.

The SPLEEN weighs 150 Gm. The capsule is grayish and slightly wrinkled. The cut surfaces are fairly firm. The trabeculae are prominent. The pulp is reddish-brown in color.

The LIVER weighs 1900 Gm. and shows a moderate amount of cloudy swelling.

The GALL-BLADDER and ducts are normal.

The GASTRO-INTESTINAL TRACT is opened in its entirety and is normal except for a small portion of the upper jejunum and also some of it showed a moderate amount of congestion.

The PANCREAS weighs 100 Gm. and is normal.

The ADRENALS are normal.

EACH KIDNEY weighs 150 Gm. and shows a slight amount of cloudy swelling.

The ureters and BLADDER are normal.

The PROSTATE is not enlarged.

A section of the thoracic cord is taken.

The organs of the HEAD and NECK ARE not

examined.

Diagnosis:

1. Acute septic bullous pemphigus.
2. Septicemia (Clinical)
3. Moderate congestion of lungs.
4. Moderate cloudy swelling of liver and kidneys.
5. Congestion of jejunum.

IV. ABSTRACT:

PEMPHIGUS (CONT.)

Reference: Pels, I. R., and Macht, D. I., Arch. of Derm. and Syph. new series 19,640-650. "Phytopharmacologic examination of blood in Pemphigus and in Some Other Diseases of the Skin," from Department of Dermatology of Johns Hopkins Medical School and Hospital and from Laboratory of Pharmacology of Hynson, Westcott and Dunning.

Introduction: Well known that chemicals produce definite, often characteristic physiologic change in living matter when administered to animals in vivo or applied to surviving organs of same or when applied to parts of living animal tissue and to individual cells (pharmacodynamic change.) (Materials from mineral, animal or vegetable kingdom.) Living animal tissues may be utilized for such responses. Also living plants protoplasm. Especially true of metabolic products elaborated by human body. Such experiments show abnormal products found in blood of pernicious anemia so characteristic as to seem useful in differentiating it from other anemias.

Suggested present investigation of blood in various skin conditions. Toxins - to plant life have been found. In clinical sense, certain dermatoses of both known and unknown origin are thought to be produced by toxins. (Sudden or gradual release of agents associated with general symptoms responsible for changes in skin.) The list is long involving questionable inclusions. Example: acute exanthema, erythema multiforme, erythema nodosum, drug eruptions, burns, pityriasis rosea, lupus erythematosus, tuberculids, lichen planus, psoriasis and other rare dis-

eases including various types of pemphigus.

Experiment: When seedlings of Lupinus albus are germinated and grown under definite physical conditions, quantitative growth studies are made by measuring elongation of root and other changes. (Single straight root of seedling allows accurate measurement.) Technic is described. Controls used. Temperature kept constant and light excluded? "Shive solution" used and difference in growth attributed to admixing unknown bodies. Normal blood serum readings 70-75%. Figures below 70% significant of toxicity. Above 75% generally of little significance.

Material: 230 specimens blood studied. Usually tested within 24 hours but some later, even one week after venipuncture. Many submitted to subsequent tests. Refers to toxin present in blood of menstruating women (menotoxin - flower wilter).

Results: Noted soon after investigations were begun that most dermatologic conditions did not exhibit any influence on plant protoplasm. One condition which repeatedly gave low readings was pemphigus (18 cases). Average 53.8% (definite toxicity.) Also studied in series (two patients). Toxicity of blood serum increased with progress of disease. No relationship to hydrogen ion concentration or any change in coagulation time. Chronic case (over two years) degree of toxicity varied with exacerbations and remissions, serum being more toxic at time of exacerbation and less toxic during remission. Fluid aspirated from bullae also toxic but not as great as blood serum.

Toxicity greater usually (after 48 hour) than after 24 hour. Contrary to pernicious anemia. Attempts to detoxify blood by ultra-violet radiation. Results of few experiments decreased toxicity. Studies not complete and will be carried on further.

Others: Authors list large number of skin diseases which were tested and do not exhibit any toxicity as compared with normal blood serum. In measles, scarlet fever, erysipelas and varicella, blood less toxic. Normal readings in dermatitis herpetiformis (too few to report.) Allied condition?

Comment: Authors speculate value of information in regard to differential diagnosis as no other dermatologic condition? gave phytotoxic index of pemphigus. Value in differentiating borderline conditions (dermatitis herpetiformis.) Example: "If patient survives, has dermatitis herpetiformis; if he dies he had pemphigus". Also value in differentiating "trench mouth and erythema multiforme where lips and mouth are involved and other conditions of tongue and buccal musosae with manifestations of vesicles or blebs".

Theory: Toxic theory (microbic, neurogenic or metabolic). Kartamischew found definite change in sodium content of skin in pemphigus (retention) also showed sodium chloride content of skin, viscera, fat, heart and other parts of body (less than normal.) Urbach found sodium chloride retention with decreased chloride output in urine.

Evident that conceptions of etiology are still vague. Believed present work opens new line of investigation.

V. ABSTRACT: FATAL POST-TRANSFUSION REACTIONS

Ref. Brines, O. A., J.A.M.A. 94, 1114-1116 (April 12) 1930. Department of Pathology, Jefferson Clinic and Receiving Hospitals, Detroit.

Material: 4,000 transfusions, mortality 0.05%. In view of beneficial results of transfusion (frequently life saving in nature) mortality insignificant and compares favorably with other forms of treatment. No intravenous procedure entirely free from danger. Mortality following arsphenamine injection

nearly that of blood transfusion.

Reaction: 1. Incompatibility.
2. Chemical. 3. Allergic.

(a) Incompatible

Incompatible blood in series (6 cases), clerical error (2), and (deteriorated) group III typing serum (4); donors supposedly being group IV, (group of recipient), whereas group IV recipients actually given group II blood. No fatalities (4 cases), moribund state (2) before transfusion. Warning of danger (incompatible donor) when patient is unconscious or semicomatose because larger amount of blood is given before operator realizes situation. If alert recipient symptoms will warn operator early enough to stop flow of blood. Incompatible blood reaction usually occurs before 50 cc. given and consists of lumbar or abdominal pain, dyspnea and cyanosis. Few incompatible reactions because of simple precautions adopted in laboratory, group IV diagnostic serum in addition to group II and III ordinarily used. Detects lack of agglutinating titer in group II or III diagnostic sera.

More than four blood groups possible. Practical application not far reaching (clinical proof) only four groups need be considered. Occasionally slight irregularity in speed and completeness (cells of some group II individuals) agglutinate has led to conclusion both donor and recipient are group II mildly dangerous combination from standpoint of unpleasant sequelae.

Believes when proper technic of blood grouping is followed no indication for cross agglutination. Statements to contrary sometimes made but experience convinces author, "I shall never adopt cross agglutination as routine procedure."

Believes advice against "universal donors" is unsound. Sole interest is that plasma of recipient does not agglutinate cells of donor. Therefore, group IV blood safest and most ideal (theoretically and practically) (group IV cells not agglutinated by any agglutinins. Promptness group IV donor usually can be secured may save life. Individuals remain same blood group throughout life, once donor properly typed no apprehension as to group changing. Exceptions occasionally investigation always reveals

error in grouping.

(b) Chemical reactions:

Anticoagulant or chemical contamination (rubber tubing.) Present series reaction reduced from 25% to 2 to 4% and severity markedly decreased by changing from citrate method to unmodified blood. Other factors increased speed and elimination of cooling.

(c) Anaphylactic reaction: Implies protein sensitization, food allergy, etc. Same reaction obtained with arsphenamine (anaphylactoid phenomena) after colloid, e.g., kaolin, starch, inulin and agar. Other reactions not under three headings usually mild (occur several hours and sometimes day after transfusion). Cannot be satisfactorily explained. No attempts to collect reported cases of fatal post-transfusion reactions (few reported.)

Author's cases: No. 1. Young woman (postoperative infection). Recipient and donor group II. 40 minutes following transfusion severe chill, hyperpyrexia, irrational, twitching of entire body and marked nystagmus, rapid pulse. Eight hours later unconscious, dead two hours later.

No. 2. Young woman. Pernicious vomiting of pregnancy. Aborted (therapeutic). Condition poor. Dextrose and fluid. Both recipient and donor were IV. 500 cc. unmodified blood given. Two minutes after transfusion suddenly gasped, became cyanotic and died. Cross agglutination showed (no incompatibility). No findings at autopsy to explain?

In addition, 3 non-fatal post-transfusion reactions similar to second fatal type. Reaction in five minutes, convulsions, cyanosis, unconsciousness, slow respirations and rapid feeble pulse. Two were moderately severe but condition returned to normal in hour. In other, reaction intensely severe. Completely unconscious for more than hour and delirious for two days. Cross agglutination checked blood grouping.

In 3 other cases believe transfusion was contributory factor. Previously

existing disease (chronic nephritis (?) anemia). Typical reaction -- fever, chill, lumbar and abdominal pain, dyspnea, and either oliguria or anuria. Blood urea elevated, symptoms of uremia? coma and death in 4 to 8 days.

Conclusions:

1. In a series of 4,000 transfusions of unmodified blood, authors' technic, Arch. Surg. 16: 1080 (May) 1928, mortality 0.5%.

2. Incompatibility of blood apparently not a factor in production of reaction.

3. Cross agglutination of blood of donor and recipient is superfluous provided direct typing properly done.

4. Universal use of group IV donor is strongly advocated as means of preventing accidents and reducing

incidence of post-transfusion reactions.

5. The blood group of individual remains constant throughout life.

6. Negligible mortality directly attributable to blood transfusion compared with results obtained argues well for efficiency and safety of treatment.

Comment: In our experience serious (fatal) reactions may occur in moribund individuals (pernicious anemia, sepsis, bleeding ulcer). Non-fatal reactions (as described) in any one (uncommon). Problem being studied at Minnesota. Before changing to Brines method of typing only? results should be compared. Transfusion reaction in pemphigus patient belongs to moribund type.

VI Last year -- Next year: July 1st many staff changes will take place. A fairly large number of those who have made lasting contributions to our organization will not be here. We who remain want them to know our regret at their departure. We trust that they will always count us as their friends and the University Hospitals as their real alma mater.

To all who have helped make the staff meetings possible our sincere thanks. We are a more compact group, with wider interests, more humility, greater respect for our fellow workers than we were at this time last year. Few organizations have the free and open discussions we enjoy. The best meetings were those in which you actively engaged.

Our special appreciation to Drs. Mead, Randall, Pearson and Henrickson, the extent of whose contributions cannot be fully measured. And to Miss Gunn for her unfailing interest and care of all preparation details for the meetings our gratitude. If we succeed in developing the spirit which was fostered by our group the past year, even greater opportunities are in store for us. Our deepest thanks to all until September 17, 1931, when we again solicit your support.

VII We Give Thanks To:

Smooth, sagacious, silvery-tongued, socially-minded Dr. William Austin O'Brien for the excellent staff meetings he has conducted this year. Pre-occupied by the following few occupations; to-wit, Consultation Bureau, Radio Speaker, Medical technician instructor, Pathologist, Program and Advisory Committees State Medical Meeting, Advisory Committee American Medical Association, Booster Extraordinary for the University Hospitals, Propagandist for Health, and Anti-Cancer Publicist, he has found time to present staff meetings that are known everywhere and that rate among the finest.

The Staff
