

**Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota**

The Undescended Testis

STAFF MEETING BULLETIN
HOSPITALS OF THE . . .
UNIVERSITY OF MINNESOTA

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Published for the General Staff Meeting each week
during the school year, October to May, inclusive.

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William A. O'Brien, M.D.

I. LAST WEEK

Date: January 5, 1940
Place: Recreation Room
 Powell Hall
Time: 12:15 to 1:15 p.m.
Program: Movie: "Donald's Penguin"
 Preoperative Skin Sterilization
 Milan Novak
 Discussion
 Arthur D. Hirschfelder
 Raymond N. Bieter
 Harold S. Diehl
 Milan Novak

Present: 129

Gertrude Gunn
 Record Librarian

II. MOVIE

Title: "How to Watch a
 Football Game"

A Benchley Short

Released by: M-G-M

III. ANNOUNCEMENTS1. THE MINNESOTA PATHOLOGICAL SOCIETY

The University of Minnesota
 Medical School

Institute of Anatomy
 Tuesday, January 16, 1940, 8:00 p.m.

Some phases of equine encephalomyelitis.

Dr. Reuel Fenstermacher

Equine encephalomyelitis in man.

Dr. Alex Blumstein

2. SIGMA XI LECTURE SERIES

SIGMA XI
 (Honorary Scientific Society)

Announces the

Thirteenth Annual Series of
 Four Lectures
 By Minnesota Faculty Members
 for 1940

"RECENT DEVELOPMENTS IN
 MEDICAL SCIENCE"

Cyrus Northrop Memorial Auditorium
 8:15 p.m.

 Friday, February 2

"Sulfanilamide and Related Chemicals
 in the Treatment of Infectious
 Diseases" Dr. Wesley W. Spink

Friday, February 9

"The Problem of Poliomyelitis
 (Infantile Paralysis)"
 . . . Dr. J. Charnley McKinley

Friday, February 16

"Viruses--the Microscopically Invisible
 Agents of Disease"
Dr. Robert G. Green

Friday, February 23

"X-rays in the Diagnosis and Treatment
 of Disease" Dr. Leo G. Rigler

 There will be orchestral music for a
 half hour preceding each lecture.

The public is cordially invited.
 There will be no admission charge.

IV. TREATMENT OF THE UNDESCENDED TESTIS: WITH REFERENCE TO END RESULTS

Charles E. Rea

Introduction

Pain, torsion, hernia, and malignancy are the most common complications of undescended testis. However, except for hernia, most patients with undescended testis do not present themselves for treatment because of complications. Some are conscious of the aberrant position of the ectopic gland. Others are concerned about the fertility of the retained gonad. Not a few, wishing to avoid a surgical operation, ask about the chance of spontaneous descent or the results of "injection" (endocrine) therapy.

The surgeon is confronted with the problem of selecting the best treatment for these patients. If the treatment is to be surgical, should the retained testis be removed, because of the danger of malignancy or because of its questionable function, or should it be scrotally fixed? If the testis is anchored in the scrotum, is the result to be considered purely cosmetic or will the function of the organ be improved? Although orchiopepy has been performed for more than a century, it is surprising how few investigators have inquired if the undescended gonad had any function, or, if such a function existed, whether it could be maintained or improved by scrotal fixation. From a review of the literature, it seems established that in most cases the undescended testis may have an internal secretion and occasionally may possess an external secretion sufficient for potential, if not absolute, fertility. It is estimated that 10 per cent of untreated human cryptorchids remain fertile (Uffreduzzi). It has been proved clinically that as high as 82 per cent of patients treated by orchiopepy have active spermatozoa in the semen (MacCollum). Placing the slightly atrophic or immature retained testis of man and the pig in the scrotum has been shown experimentally to allow a mature germinal epithelium to be produced (Wangensteen). The degree of

maturity after scrotal fixation is never as great as that seen in the case of the experimentally produced cryptorchid so treated. However, clinically and experimentally the value of scrotal fixation for testicular development has been proved beyond doubt.

There is a diversity of opinion among surgeons as to the best treatment for the undescended testis. Some believe that the ectopic gland is potentially malignant and should be removed. Others believe that, if left alone, most of these retained gonads will descend spontaneously. Recently the reports of some investigators indicated that the results from hormonal therapy are equally as good as, if not superior to, those obtained by surgical treatment (orchiopepy). In formulating a rational plan of treatment of the undescended testis, one is influenced by the number and type of cases he has seen, his surgical experience and that of his associates, and the type of case that receives hormonal therapy.

The questions of malignancy of the testis, spontaneous testicular descent, and surgical technique are beyond the scope of this paper and are discussed in detail elsewhere. In review, however, it may be said that the undescended testis should not be considered a precancerous lesion, as only about 2 per cent of such organs develop tumors (Hinman). Spontaneous descent is a rare occurrence in our experience; the policy of "watchful expectancy" after puberty is not justified, knowing from experimental studies how atrophic the ectopic testis becomes when deprived of its scrotal environment. Wangenstein has described a modification of the Keetley-Torek operation which has given uniformly good results in the surgical treatment of this condition at this hospital. The only change in technique of the operation since its initial description has been the substitution of silk for catgut sutures in performing the scrotal-crural anastomosis and the hernial repair.

Surgical Treatment

The surgical treatment of the unde-

scended testis is removal, abdominal reposition or scrotal fixation (orchiopexy). Castration is justified only in certain cases of unilateral undescended testis: (1) if the patient is old and has a very atrophic testis or a large inguinal hernia, (2) if the testis is painful, or (3) if the presence of a malignant tumor is suspected. Too often castration is performed because it is an easier procedure than scrotal fixation. However, it is surprising how much the cord can be lengthened by patiently separating the testis from the vaginal process, freeing the vessels and vas deferens in the retroperitoneal space even as far as the renal pedicle and separating the fascial coverings of the cord. Cutting the blood vessels of the cord to give length is to be condemned, as Mixter and MacCollum found that every patient so treated showed complete atrophy of the testes when observed from ten to twenty years later. If an inguinal testis cannot be made to reach the scrotum, abdominal reposition is preferable to castration and may be the only elective procedure for the young male with bilateral cryptorchidism.

In orchiopexy one combines the freeing of the cord with fixation of the testicle in the scrotum. Since Rosenmerkel's orchiopexy of more than one hundred years ago, numerous procedures to anchor the testis in the scrotum have been devised. Over 40 operations have been described (Wolfson and Turkeltaub). The most recent ones are of the Keetley-Torek type. From many reports (Burdick and Coley; McKenna and Ewert; Ada; Gobell; Cabot and Nesbit; Tyrrell; Meyer; Eisenstaedt; Wangenstein; Newell; Wolfson and Turkeltaub and others) it is to be inferred that good anatomic results (in size, position and cosmetic effect) are obtained in most cases, even with various technics. For the past few years at the University Hospitals Wangenstein's modification of the Keetley-Torek operation has been used with uniformly good results.

In the Keetley-Torek operation the spermatic cord is freed until it is of sufficient length to allow the testicle to reach the bottom of the scrotum. The

skin of the thigh is sutured to the skin of the scrotum; the testicle itself is sutured to the fascia lata of the thigh, and the wound in the scrotum is closed over the testicle. The testicle is thus kept at enough stretch so that it will remain low in the scrotum after the second stage is performed. It is important that there be no undue tension. At the second stage the scrotum is separated from the thigh and the testicle from the fascia lata, and the scrotum is closed again over the gonad. In Wangenstein's operation a cutaneous juncture between the thigh and the scrotum is made, and the testis is anchored by means of sutures which are placed in the tunica albuginea, brought down through the tunica vaginalis communis and fastened to the fascia lata of the thigh. The important difference in this operation is that while fastened to the thigh the testicle is still in the scrotum. The first stage is not only more physiologic than in the original Keetley-Torek procedure but at the second stage, the scrotal-crural detachment is performed more easily and simply.

From an anatomic and from a physiologic point of view, orchiopexy is the procedure of choice in the surgical treatment of the undescended testis. It is important that the testis after orchiopexy lie free in the bottom of the scrotum and be movable. If one cannot get the testicle to the lowest portion of the scrotum, a high scrotal position is better than an inguinal one. If necessary, the testicle may be brought from its ectopic position to the scrotum in stages. Whether inguinal or abdominal reposition is the better is questionable, except that one can observe a testis better in the inguinal region. If the inguinally retained testis is painful and if conservative measures give no relief, orchidectomy may be indicated, as such a testis will probably be just as painful if placed in the abdomen. For older men, orchiopexy may be performed more for the cosmetic result than for the functional potentialities.

From the years 1933-1938 inclusive,

49 patients with undescended testes were treated by means of orchiopexy. Of these 41 have been followed. In 8 patients, the testes were bilaterally retained. Thus, of 49 instances of retained testes, the anatomic and cosmetic result was considered good in 40 cases, fair in 7, and poor in 2 cases. The results were considered good when the retained testis after orchiopexy remained well down in the scrotum and was about the same size and shape as its scrotal fellow. The result was classified as fair when the testis attained a high scrotal position or remained in the scrotum after fixation but was found to be atrophic. Of the poor results, one testis slipped back into the abdomen and another became very atrophic. It will be noted that the poor and fair results were obtained in patients beyond puberty.

Endocrine Therapy

The treatment of undescended testes by gonadotropic substances is generally recognized, but the results of treatment are so varied that a critical review of this form of therapy is indicated.

Bigler, Hardy and Scott in a review of the literature (1938) report the results of 19 investigators who found that descent occurred in over 75% of 262 patients with undescended testes treated with pituitary or pituitary-like extracts. In their own series of 71 boys with 91 ectopic testes treated with antuitrin-S descent of the gonad into the scrotum was permanent in 45% of cases. They found that descent occurs in most cases when about 4000 units have been injected. Also Nixon in an excellent review of the literature collected reports of 388 boys with 574 retained testes who were treated with intramuscular injections of various gonadotropic substances. In most instances extracts of pregnancy urine were used. As much as 40,000 units and as little as 100 rat units have been reported to produce testicular descent. Injections have been given daily for a limited period, or two or three times a week for an indefinite period. The percentage of successful results varied from 100% to 19%. In the entire group of re-

ported cases, 59% of the gonads were said to have descended after treatment. Approximately one-third more of the patients with bilateral retention responded to therapy than those with a unilateral condition. Nixon treated 59 boys with 76 undescended testes; of these 25, or 33%, descended. A course of treatment consisted of intramuscular administration of 250 rat units of gonadotropic substance, 3 times each week until 30 injections had been given, a total of 7500 rat units. If after 10 weeks of treatment the testes had not descended to the normal low scrotal position, the patient was given a rest for at least 3 months before a second course of gonadotropic substance was instituted.

Thompson and Heckel analyzed the reports of 27 observers. Of 860 undescended testes in 579 patients, the condition was bilateral in 281 and unilateral in 298. Of all the undescended testes treated by hormonal therapy 524 or 61% descended. The successful results may be divided according to the original position as follows: Intraabdominal, descent reported in 83 of 150 cases, or 55%; inguinal, descent reported in 172 of 298 cases or 58%; in the upper part of the scrotum, descent reported in 15 of 17 cases or 88%, and location unstated, descent reported in 254 of 395 cases, or 64%. In Thompson and Heckel's own series of 50 retained gonads in 38 patients, only 20% descended following endocrine therapy. Of the patients under 16 years of age, descent occurred in only 27%.

Mimpriss has reported descent in only 29% of cryptorchids treated by gonadotropic substance. Zelson found that of 26 boys with 34 undescended testes, complete descent occurred in 8 cases or 31%. In a previous report the results of treatment of ectopic testes by gonadotropic substance at the University of Minnesota Hospitals were reviewed: in a series of 36 patients with ectopy treated with anterior pituitary-like substances degrees of descent were noted in 6 (16%). In 4, descent was complete.

One of the purposes of this paper is to report another series of 32 patients with 36 undescended testes treated at the University of Minnesota Hospitals. The ages ranged from 6 to 20 years. In 4 instances, the ectopy was bilateral. The substances used were APL (Ayerst), special strength, (500 rat units per c.c.) and Antuitrin-S (Parke-Davis), 100 rat units per c.c. The following methods were used in giving the anterior pituitary-like substance:

1. APL (Ayerst) - 500 units intramuscularly every day for ten injections - 8 patients.
2. APL (Ayerst) - 500 units intramuscularly every other day for 10 injections - 8 patients.
3. APL (Ayerst) - 250 units every other day for 15 injections - 8 patients.
4. Antuitrin-S (Parke-Davis) - 250 units intramuscularly every other day for 20 injections - 8 patients.

It will be noted that the dosages are much higher than those reported in the previous communication.

If no results were obtained following the first course of treatment, the patient was given a rest for 1 month and a subsequent course suggested. If no results were obtained after the second course of treatment, the patient was allowed to wait 3 to 6 months to see if descent of the testis would occur; if there had been no descent at the end of this time, an orchiopexy was advised.

Results: Of the 32 patients with 36 undescended testes treated by anterior pituitary-like substances, descent occurred in 6 patients and in 7 ectopic testes (1 bilateral case). This makes an incidence of descent in 18.7% of patients and 19.4% of cases. There was no uniformity in dosage or length of treatment in the successful cases. In the successfully treated cases, the gonad was inguinally retained three times and abdominal in position twice in the unilateral cases; in the one bilateral case, the original

position of both gonads was inguinal. In one instance the testis attained a high scrotal position after treatment. In another, the testis descended to a low scrotal position but later ascended, remaining high in the scrotum. Complete descent was obtained in 4 patients and 5 cases of undescended testes. Similar to the previous series, all the cases had been followed six months or longer. Of the 26 patients in which there was failure of descent following endocrine therapy, the position of the gonad was inguinal 18 times and abdominal in 8 instances. All the patients have received at least 3750 units of anterior pituitary-like substance during the course of treatment. Five patients with inguinally retained testes, all under 12 years of age except one boy who was 17 years, received two courses of hormonal therapy consisting of 500 units of APL (Ayerst) intramuscularly every day for 10 injections (total 10,000 units over a period of 3 months). Six patients, 5 with unilaterally retained testes and one with an abdominally ectopic gonad, were treated with 2 courses of APL (Ayerst), 250 units every other day for 15 injections (total, 7500 units). No descent occurred on observing the patient over a period of 6 months. Another boy, 9 years old with inguinal maldescent, received a total of 15,000 units of antuitrin-S over a 4½ month period without descent of the testis. No untoward reactions have resulted from the use of the hormone in the doses mentioned; certainly excessive genital growth has not been observed.

Spontaneous Descent of the Undescended Testis

It is still an important question: What percentage of undescended testes descend spontaneously? If the majority of ectopic testes will eventually descend of their own accord, as some investigators claim, the value of any kind of therapy is questionable.

There are several reports of spontaneous descent of the retained testes in the literature. Some investigators

maintain that all retained testes will eventually descend, while others believe that spontaneous descent is a rare occurrence. The statistics are colored by the type and location of the retained gonad and age of the patient, as well as the experience of the investigator in examining such patients. It is our opinion that those claiming that the undescended testes rarely descends of its own accord are usually dealing with cases of testes retained because of mechanical obstruction to descent, while those that say that most cases of ectopic gonads will descend spontaneously if left alone undoubtedly are including cases of physiologic ectopy (to be discussed later).

Drake has maintained for some time that most cryptorchid glands will descend spontaneously at puberty. Williams and Johnson also seem to be of this opinion. Williams examined the records of 2,104 boys. Of these, 38 had 1 testicle undescended (1.8%) and 21 had both testicles retained (1.0%). The ages ranged from 8 to 16 years. Of 27 boys in whom only 1 testicle was ectopic and no complicating factor was present, there was natural descent in 24 (87%). Of 16 boys in whom both testicles were undescended and no complicating factor was present there was natural descent of both in 14 (87%). The patients were observed up to the age of 16 years and a few up to 18 years.

The study by Johnson comprised 544 cases of undescended testes observed from 1931 to 1937 inclusive. These cases were found during the routine examination of 31,609 boys, an incidence of 1.72%. In at least 313 of these 544 cases of ectopy, spontaneous descent of the gonad occurred. The boys' ages ranged from 7 to 17 years.

The incidence of undescended testes in adults according to the Draft Statistics of the War Department for the first World War was 3.1 per 1000 men examined or 0.3%. The finding of cryptorchidism in adult men seems irrefutable evidence that all undescended testes do not descend spontaneously. According to Johnson, Williams and Drake, the incidence of cryptorchidism in younger boys is 1.7 to 4.2%. Apparently the incidence of ectopy is much less after puberty than before that period. This may mean that

the hormonal changes incident to puberty produce descent in a large percentage of cases.

However, another explanation of this difference in the incidence of cryptorchidism in the prepubertal and postpubertal periods may be the inclusion in the former group of a large number of testes of the migratory or retractile type (physiologic ectopy, pseudocryptorchidism, or ectopy en retour). True undescended testes are those anatomically retained by mechanical obstructions to descent. The criteria for differentiating between true undescended testis and pseudo-cryptorchidism has been elaborated by Thompson and Hockel, Hamilton, and Rea, and will not be discussed in this paper. Thompson and Heckel and Bevan state that a large number of patients referred to them for treatment of undescended testes really have pseudo-cryptorchidism; in Bevan's experience, about 1/3 of the patients with supposedly retained testes are of this type. It is our experience and that of other observers (Bevan) that many cases of pseudo-cryptorchidism spontaneously descend at puberty.

It would be interesting to know what the difference in the incidence of cryptorchidism in the prepubertal and postpubertal age group would be if the migratory testes were carefully excluded. Unless this is known, statistics concerning spontaneous descent of retained testis are of little value. Theoretically and from the experience of this clinic, spontaneous descent of a testis retained by mechanical factors probably never occurs. Also it seems doubtful if hormonal therapy is of much value in causing descent in these cases.

An Evaluation of the Role of Endocrine Therapy in Causing Descent of the Testis

Engle was the first to study the effects of injecting water soluble extracts of the anterior lobe of the pituitary gland on descent of the testes of immature monkeys (Macaques). Normally the testes of the male macaque are descended at birth but shortly thereafter they ascend into the inguinal ring.

Not until the third or fifth years do the testes descend again permanently. Engle found that pituitary extracts caused precocious descent of the testes of immature macaques.

Thompson and Heckel wonder if the percentage of patients showing descent spontaneously at puberty would be about the same as that following the use of anterior pituitary principle before puberty. Thus, as a result of hormonal therapy, descent of the testis would be obtained only in those cases which would descend normally at puberty. If no more is accomplished by endocrine therapy in young boys with undescended testes than is accomplished by natural processes at a later age, it may be questioned if the treatment is worthwhile.

Mimpriss believes that any ectopic testis that would descend as development increases can be brought down by hormonal therapy if: a) the dosage is adequate to stimulate sufficient growth of the reproductive system, and b) no mechanical obstruction to descent of the testis is present. He states that the retained testis which is not mechanically retained is only awaiting an adequate state of development before the scrotal position is attained. Mimpriss classifies cryptorchid children by noting: 1) the general appearance of the child, 2) development of the genitalia, and 3) the situation and mobility of the testis. He further states that it is in the child with cryptorchidism and hypogenitalism that hormonal therapy is most effective. The clinical studies of Shapiro, Sexton, Spence and Scowen, Dorff, and Rubenstein would tend to bear out this statement.

The chief value of treatment by gonadotropic substance would seem to be in distinguishing between those cases in which descent is prevented by anatomic factors and those in which it is not. Granted that an unknown number of retained testes will descend spontaneously, this descent should have occurred by puberty or by the addition of extra-hormonal stimulation. The practice of waiting until the patient is 18 - 20 years of age to see if the testes will

descend of their own accord is not justified, knowing from experimental and clinical data how atrophic these organs become when left in an aberrant position.

It has been the practice at this clinic to wait until puberty before treating uncomplicated cases of retained testes. A course of hormonal therapy is given first. The dosage and length of treatment with Anterior Pituitary-Like substance is quite variable in the cases reported in the literature. There is no correlation of these factors in the successfully and unsuccessfully treated cases (Thompson and Heckel). Experimentally while gonadotropic hormones have little effect on the mature male, there is clinical and experimental evidence that these substances greatly increase the growth of the reproductive system of the immature male (Dorff). From the experience at this clinic however, the danger of precocious puberty is more apparent than real following the use of gonadotropic substance. If the patient is carefully watched and not treated by high dosages, excessive genital development can be avoided.

At present in this clinic, APL substance in doses of 500 rat units per c.c. is injected every day or every other day for 10 injections in cases of ectopy. If no results are obtained, the patient is given one month's rest and then a similar course of therapy instituted. If no results are obvious, the patient is allowed a rest of 3 to 6 months, and an orchiopexy performed. No untoward effects from the use of gonadotropic substance have been observed in the doses used. It is interesting to note that in every case upon which an orchiopexy has been performed at this clinic, evidence of mechanical obstruction to descent of the testis has been present.

Conclusions

In spite of reports from other clinics showing a high incidence of successful results following the treatment of undescended testis with gonado-

tropic substance, the results obtained by Thompson and Heckel, Mimpriss and this clinic have been less encouraging. In two series of retained testes treated to date by gonadotropic substances at the University of Minnesota Hospitals degrees of descent were obtained in not more than 20% of the cases. One reason for the successful results in some series is undoubtedly the inclusion of cases of pseudocryptorchidism.

To give a final estimate of the value of gonadotropic substance in the treatment of ectopic testes is impossible at this time. For one thing, the incidence of spontaneous descent is not accurately known. Furthermore it must be determined whether endocrine therapy causes descent only of those testes which would descend without therapy about the time of puberty. Hormonal therapy makes it possible to differentiate between those testes which require surgical intervention because of mechanical obstruction to descent and those that do not.

Treatment of the retained testes should be deferred until 9 to 11 years of age since the testis does not grow grossly or microscopically until then (Wangensteen) and since it is possible that spontaneous descent may occur. A course of endocrine therapy should be given first to see if the additional hormonal stimulus will cause the gonad to descend into the scrotum. If no results are obtained, an orchiopexy should be performed.

From our experience, spontaneous descent or descent following the use of gonadotropic substance in cases of true undescended testis is a rare occurrence. At this clinic every case of true undescended testis upon which an orchiopexy has been performed has shown evidence of mechanical arrest to descent of the gonad.

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V. GOSSIP

When Clinical Associate Professor of Urology, Frederic E. B. Foley entertains guests at his home, they are frequently startled by strange and sudden appearances of unexpected visitors, notably two sheep which romp through the living room apparently from nowhere only to disappear as mysteriously as they come. His house boy is custodian of the animals and puts on his act whenever the host signals for it...Clinical Associate Professor of Otolaryngology, Lawrence R. Boies recently had the unique experience of removing some meatloaf from the bronchus of a woman weighing nearly 260 pounds. Larry, who at best might not be what you would call conspicuous in a crowd of either large or tall people, ducked just in time, as the meatloaf flew out through the bronchoscope. Fellow members of the Hennepin County Medical Society insist that there is nothing small about Larry when he addresses a golf ball, as he is one of the longest drivers in the Society...Clinical instructor in nervous and mental diseases, Nathan J. Berkwitz, is intensely interested these days in his shock therapy treatment of schizophrenia and allied disorders. He is using an electrical shock method instead of a biological one, followed by sedation, which, according to the enthusiastic Neurolog, is producing excellent results. Berk is so interested in his investigation that he thanks you for listening if you sit out a full session..

..Associate Professor of Medicine, Cecil J. Watson, is foregoing his trip this year to Sun Valley for his annual skiing vacation. When Ceas, his brother, and sister were in Europe, (all graduate students) they spent their winter holidays in the Alps, where they enjoyed their favorite sport. His brother was a Rhoades Scholar at the time, while his sister was majoring in music. Since that time she has played with several orchestras and not long ago made a series of piano records in Northrop Memorial Auditorium..

..When Professor of Preventive Medicine and Public Health, Gaylord W. Anderson was a youngster his father taught in the history department at the University of Minnesota. Later the family moved to New England, but Minnesota is beginning to

seem like home again. The "W" in his name stands for West, for the famous Professor West of Minnesota's history department (known in his own right as the author of famous textbooks used in the schools and also as father of the many Wests who have come from Minnesota - Registrar Rodney M. West and Dr. Anne West)....The other evening when Dr. Robert Reimann was here many were interested to learn that we have a special virus laboratory in connection with our Minnesota Department of Health. Dr. Clara Nigg, who is in charge made a splendid contribution to the program when she discussed the difficulties in obtaining virus material for diagnostic purposes. Many virus isolation studies require months before the agent can be typed. Other possibilities are complement fixation tests and blood absorption tests which seem to offer better chances. In spite of our greater knowledge of viruses, chemotherapeutic agents, and specific sera seem to be slow in developing....Professor of Radiology, Leo G. Rigler, was in Atlanta during the premiere of "Gone With the Wind." The radiologists were also meeting there at that time. During the convention, it was Leo's good fortune to introduce Chief Surgeon Owen H. Wangenstein for an address on "Bowel Obstruction." The "Gone With the Wind" atmosphere of Atlanta permeated the entire radiological meeting, as punster Rigler punned to his heart's content in introducing surgeon Wangenstein....Gastroenterologist T. T. (Thomas Turlay) Mackie of New York will be the guest teacher at the Center for Continuation Study, February 12-17. He will appear in the course on Proctology and Diseases of the Bowel. During that week, there will also be a course in Diagnostic Roentgenology. We hope to have Dr. Mackie with us for Staff Meeting on February 16....Clinical Assistant Professor of Medicine, James B. Carey is the outstanding literary critic of our group. He reads widely and criticises shrewdly. Those who have spent an evening with him insist that his literary explorations are most entertaining. In addition, he is an artist, able to depict accurately in colors what he sees through the gastroscope. Watch for his book reviews in the Bulletin of the Hennepin County Medical Society...