THE MANAGEMENT OF STERILITY*

By ROBERT B. GREENBLATT, M. D.

Blessed are the barren, and the wombs that never bare, and the paps which never gave suck.

Luke 23:29

Many barren women, if religiously inclined, are resigned to the fact that their barrenness is the will of the Lord, and finding consolation and comfort in His word, refuse medical aid. The Bible tells that Elizabeth, the wife of Zacharias had always walked “in the commandments and ordinances of the Lord blameless.” She was well stricken in years and still longed for a child. It is recorded that an angel appeared before her priestly husband and said, “Fear not, Zacharias: for thy prayer is heard; and thy wife Elizabeth shall bear thee a son.” To her a son was born, and she called him John.

In general, however, the barren woman now, as in ancient times, yearns for a tangible physiologic and more timely solution to her problem. She resorts to supplication and prayer, even to witchcraft and the fortune-teller, in order to attain results. Ancient Greek women

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Fig. 1. Kymographic tracing of a transuterine insufflation with CO₂ showing perfectly normal tubal patency and peristalsis in a white female, age 30, para iii.

Fig. 2. Kymographic tracing of a transuterine insufflation with CO₂ showing normal tubal patency and peristalsis in a young white female whose husband has azoospermia.

worshipped at the altar of Ceres, the Goddess of fertility and abundance. Hebrew women, in biblical days, hoped to remove the stigma of sterility by fasting, sacrifice and prayer. In the Middle Ages women resorted to the most banal practices and absurd potions. Even in this day infertile couples have been known to sleep in the beds of prolific friends in the hope of conceiving. Medical science has made great strides in the treatment of sterility. Nevertheless, in spite of old wives’ tales, superstitious beliefs or the physician’s best efforts, success is not to be attained. On other occasions, conception surprisingly occurs. This may be due to coincidence, some supposed therapeutic procedure, change of scene, and not infrequently, change of partner.

**Tests for Sterility**

Sterility may be defined as the failure of conception to take place after two or more years of frequent and normal coitus. Throughout the ages, the stigma of sterility has been borne by the woman. Even to this day many a physician studies the female and neglects the male
partner. The study of sterility should be the study of the barren couple. The first recorded test for sterility, impractical as it now appears, took into consideration the male partner of a barren union. Sarah and Abraham were well along in years and were childless. And Sarah, probably to prove which of the two was responsible, said unto Abraham, "I pray thee, go in unto my maid." It is quite evident that in those days "go in unto" had an emotional connotation. The Bible tells that "he went in unto Hagar, and she conceived." Sarah thus proved to her satisfaction that she and not her mate was sterile. She then prayed to the Lord. He opened her womb and she conceived, even though "it ceased to be with Sarah after the manner of women."*

Recognition of the male factor as well as the female factor in the study of sterility is of paramount importance. That this fact was known in biblical times is implied in the First Book of Kings, "Now there was a certain man, and his name was Elkanah, and he had two wives, the name of the first was Hannah and the name of the second was Peninnah. And Peninnah had children, but Hannah had no children, for the Lord had shut up her womb."

Fantastic variations of today's Rubin test (tubal insufflation for patency) were practiced for centuries. Hippocrates, in order to discover whether a woman will become pregnant or not, permitted a clean and well scraped clove of garlic to be placed against the uterus. Next morning if she did not smell of garlic from the mouth, then no impregnation would take place. The ideas of Hippocrates have been preserved in Europe for a long time. As late as the beginning of the

*Cessation of menses—menopause.
Fig. 4. Kymographic tracing of transuterine insufflation showing occlusion overcome by sustained pressure of CO₂ at 180 mm. of Hg. for 1½ minutes.

eighteenth century, Eckarth proposed the following test:

"Whether a woman (in whom there is doubt of fertility) be fertile or not, I take such a person, cover up her whole body so that nothing can get out, then I take a fire shovel, put in it a few glowing coals, and on them strew squashed juniper berries (Baccae juniperi), let the steam from it pass into the vagina, then if, after a little while, one gets the smell from the mouth or nostrils of the woman, then she is considered fertile, but where the sign does not issue, she is judged sterile."

An orderly approach to the study of the barren marriage must include complete medical, endocrine and genital studies of both partners of the childless union. An attempt should be made to uncover gross or minor defects in one or both partners. The following routine is helpful:

**STUDY OF THE FEMALE**

**Ovulation**

(1) It is important to do a suction curettage on the first day of the cycle for at least two successive months to determine whether ovulation occurs. The study of the endometrium is frequently very informative. The presence of a secretory endometrium is evidence that ovulation has taken place for that particular cycle.

**Tubal Patency**

(2) Tubal patency may be determined in two ways—each method has its advantages.

(a) The Rubin Test: This is the transuterine insufflation of the
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Fig. 5. Kymographic tracing of a transuterine insufflation showing passage of CO₂ at a high level of pressure (125 mm. of Hg). Note the absence of peristalsis.

Fallopian tubes with carbon dioxide at a regulated rate of about 60-90 cc. per minute under measured pressure. If the tubes are patent, gas enters the peritoneal cavity at a pressure of 25-75 mm. of mercury (Figs. 1 and 2). If the Fallopian tubes are partially occluded or strictured, the pressure at which gas enters the peritoneal cavity may vary from 120 to 200 mm. of mercury. When the pressure rises to 200 mm. and remains at that level with the supply of gas shut off, it signifies total occlusion of both Fallopian tubes (Fig. 3). After completion of the test, when the patient assumes the sitting position, shoulder pain, usually right, is experienced by the patient and this is confirmatory evidence that tubes are wholly or partially patent. The interpretation of the kymographic tracings yields further information, for it determines the pressure at which gas is forced through and may signify partial occlusion or stricture (Fig. 4). The loss of tubal peristalsis (Fig. 5) as well as exaggerated tubal tone (Fig. 6) may be learned through the kymographic tracing. Further confirmatory evidence of tubal patency is obtained by placing a stethoscope over each lower quadrant of the abdomen and hearing a low pitched intermittent gurgling sound if the tubes are normally patent or a high pitched whistling sound when the tubes are stenotic. The Rubin test is frequently a valuable therapeutic aid in opening totally or partially occluded tubes (Figs. 7a and 7b).

(b) Uterosalpingography: Contrast visualization of the uterus and Fallopian tubes may be obtained by injection of an opaque medium. This procedure yields pertinent information as to patency (Fig. 8), site of obstruction or concurrent pathologic processes such as a submucous fibromyoma or a hydrosalpinx (Fig. 9, a and b). It has therapeutic value for pregnancy often follows soon after the injection.

Technic: The cervix is cleaned and 5-7 cc. of the opaque medium is injected into the uterine cavity under gentle pressure through a
cannula. One must be sure not to exert too much pressure nor to allow reflux of the oil through the cervix by gently pulling on the cervix with a tenaculum while the rubber stopper on the cannula is pressed tightly against the cervix. An X-ray is taken immediately as well as 5 to 24 hours later to visualize the distribution of the contrast medium.

Acute vaginal or cervical infection or a recent salpingitis are contraindications for the performance of either uterosalpingography or the Rubin test. The tests are best performed not oftener than at monthly intervals about 5-7 days following cessation of a normal menstrual period.

The Huhner Test

The patient is instructed to report for examination several hours after coitus. The cervical secretions are aspirated from the cervical os by means of a sterile dry bulb syringe or pipette. The specimen obtained from the vagina may show live or dead sperm. The specimen obtained from the cervix, however, should show the presence of several motile, migrating sperm per high power field. If the sperm are dead it indicates hostility of the cervical secretions. The sperm may show local motility but migration is arrested because the sperm are trapped in thick mucoid secretions.

The Pelvic Factor

Routine gynecologic examination may disclose a pelvic tumor such as fibromyomas, ovarian tumor or cystoma or chronic pelvic inflammatory disease. The treatment of these gynecologic conditions must be considered before attempting a further solution to the sterility prob-
Fig. 7 a. Kymographic tracing of transuterine insufflation showing occlusion of tubes—test abruptly discontinued after 4 minutes because of severe pain in adnexal region probably indicating occlusion at fimbriated end.

Fig. 7 b. Test repeated one month later indicates success of previous insufflation by opening of tubes. Conception followed within a month of this procedure.

In a patient with an old history of pelvic inflammatory disease repeated Rubin tests should be resorted to, to open the Fallopian tubes. If unsuccessful, the site of occlusion is determined by contrast visualization and in selected cases a plastic operation on one or both tubes for total occlusion may be warranted. This procedure has been attempted twice in our series. In one the obstruction was at the isthmus and reconstruction was followed in three months time by pregnancy (successful termination). In the other, obstruction of the isthmus was accompanied by closure of the fimbriated end. Reconstruction of the right isthmus was successful but the reconstructed right fimbriated end (cuff method) did not remain open (Fig. 10 a, b, c, d).

The Male Factor

The physical examination of the male is usually perfunctory and inadequate. Obesity, thyroid disturbances, dietary indiscretions, and prostatic infections should be carefully investigated. The examination of the semen should take place prior to treatment of the barren woman. The semen should be collected in a clean dry bottle. A condom specimen should be avoided. The specimen should not be kept in a hot thermos bottle during transportation to the physicians office, but at ordinary room (outside pocket) temperature.
Fig. 8. Uterosalpingogram showing normal uterus and patent Fallopian tubes. Note outline of fimbriated end of left tube and note spillage of opaque medium in peritoneal cavity (10 cc. Skiodan Acacia used as contrast medium). W. F. 25 with functional amenorrhea and sterility. At time of writing patient is eight months pregnant.

Evaluation of semen sample:
   (a) Estimate volume (normal—4 cc. or more) and relative number of sperm; if apparently decreased, a sperm count should be done (normal—20 million - 60 million per cc.). Total absence of sperm is not infrequently encountered, in men who give a history of mumps.
   (b) Morphology of spermatozoa: Look for abnormalities—two tailed, two headed, giant heads, axial position of head, microsperm. Presence of more than 20 per cent of abnormal forms is considered pathologic.
   (c) Motility is normal when the spermatazoa are active and migratory.
   (d) Viability: A moderate percentage of the sperm should remain motile at room temperature for over 15 hours.
   (e) pH of semen sample - 7.5 - 7.8. Sperm are attracted to the alkaline medium of the cervical canal and hasten to move away from the inimical acid medium of the vagina.

Treatment

(1) Gentle dilation of the cervix and curettage are frequently followed by conception.

Action:
   a. Indirect stimulation of the ovaries.
   b. Promotion of cervical drainage.
Fig. 9. Uterosalpingogram showing hydrosalpinx (left)
A—film taken as 10 cc. Skiodan Acacia was injected into the uterus.
B—film taken 5 hours later shows complete absorption of the contrast medium except from left hydrosalpinx which persisted from 12-24 hours.

Fig. 10 a. Uterosalpingogram showing occlusion of both Fallopian tubes at the uterine end. Note absence of an outline of either tube.
Fig. 10 b. Uterosalpingogram one month after plastic operation on right tube by reconstruction of obstructed isthmus of tube and of closed fimbriated end.
Fig. 10 c. Uterosalpingogram 5 months later outlining left Fallopian tube.
Fig. 10 d. Film six hours later—showing residium of contrast medium at fimbriated end of tube. (Iodochloral used as contrast medium).

(2) Treat the cervicitis: If mild, by cauterization; if markedly hypertrophic and everted, by conization. Such therapy is particularly helpful where mucoid discharge is excessive and hostile to sperm, as determined by Huhner test.

(3) Correct a retroverted uterus with a Hodge pessary or have the patient lie immediately on abdomen following coitus, if cervix points anteriorly with retroflexion.

(4) If uterus is hypoplastic or if kymographic tracing following transuterine insufflation shows loss of tubal peristalsis, use estrogens
orally throughout month in small doses or parenterally in large doses in first half of cycle.

(5) Mild alkaline douche (1 tablespoonful of sodium bicarbonate to a quart of water several hours before coitus). This is used not to modify vaginal acidity but to dissolve mucous plug at cervical os. In some patients with very tenacious mucous plug, it is advisable to remove plug by suction or mucous solvents daily or every second day between the 12th and 16th days of cycle.

(6) Where endometrium needs priming as judged by the endometrial biopsy, estrogens in small dosage during the first part of the month are frequently useful. In certain patients with amenorrhea, if endometrial study reveals a resting type of endometrium several massive doses of estrogenic substance at two or three days intervals should be given each month. If curettage reveals hyperestrogenic endometrium, then courses of anterior pituitary extracts or pregnant mares' serum or combined anterior pituitary synergist with chorionic gonadotropin (Synapoidin, P. D. & Co.) should be tried.

(7) In patients who do not ovulate the gonadotropins may be tried. A course of gonadotropins is given each month for several months. Either anterior pituitary extracts or pregnant mares' serum is used. Of the former, 10 cc. of Gonadotropic Factor (Armour) administered between the 5th and 15th days of cycle, of the latter 600-2,000 i. u. Anteron (Schering) or Gonadin (Cutter) are administered intramuscularly during the first half of the cycle. If Gonadogen (Upjohn) is used, 10-20 Cartland-Nelson units may be given intramuscularly on the 9th, 10th and 11th days of cycle and 30 units intravenously or intramuscularly on the 12th day of the cycle.

(8) Thyroid and vitamin medication should be given when indicated. Both partners should include many fresh vegetables and fruits in their diet.

(9) Operative procedures such as tubal reconstruction may be undertaken in selected cases of sterility due to obstruction of the isthmus or closure at the fimbriated end.

Finally, it is well to bear in mind that successful results will follow a variety of measures. On the other hand, failure will be met with in the treatment of many evidently normal couples, as well as in those with obvious defects. Recently, a patient with oligomenorrhea, anovulatory menses and secondary sterility was actively treated for several years without success. Eight months after cessation of therapy the patient conceived during an amenorrheic episode. Such experiences are refreshing, they serve to humble the physician and make him realize that the amenorrheic woman ovulates at her own rate and this rate can be influenced but seldom by administration of gonadotropins. In conclusion, though the methods for the management of sterility are evidently limited, nevertheless we should use whatever knowledge is at our command to guide and help the barren couple. Though much is wanting, much may be done. Indifference and ignorance frequently rob and deny the woman of the "blessings of the breasts and of the womb." (Gen. 49:25).
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VITAMIN B THERAPY IN NAUSEA AND VOMITING IN PREGNANCY

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Nausea and vomiting of pregnancy occur in varying degrees in half of all pregnant women. It usually begins in the second month and disappears by the fourth month. Rarely, it lasts throughout pregnancy. The stomach becomes intolerant of liquids and foods. Emesis is frequent and at first is composed of mucous and undigested food; later it may become fecal in character. The urine may become scant and highly colored and contain products of acidosis. If the condition continues the patient complains of intolerable thirst. She loses weight rapidly, has frequent fainting spells and is extremely irritable and weak. Occasionally she becomes progressively worse and dies with the picture of acute poisoning and uncontrolocable vomiting.

No proof has been advanced as to the exact etiology. A variety of factors may enter into the picture. The treatments are many and varied; almost any form of treatment will secure a certain percentage of cures.

At autopsy the most marked changes are in the liver and kidney. The liver may have a diffuse hemorrhagic hepatitis with all the findings of acute yellow atrophy or there may be fatty degeneration of the cells around the central vein. Bile stasis is the rule. The kidney changes vary from a so-called kidney of pregnancy to an acute parenchymatous nephritis. The heart may show degenerative changes. The nerves are quickly affected and death may occur from polyneuritis.

The majority of cases are of mild character and recover spontaneously in ten days to six weeks without serious consequences.

Our present series of cases were all of rather mild character in that none of them were sufficiently severe to necessitate hospitalization. Some were of short duration and early in pregnancy, while others were of rather long standing. All of them vomited, at some time during the day, usually early in the morning. None showed evidences of emancipation. Both white and colored are included; the frequency of nausea and vomiting being greater in the white patients. The series is too small to draw any conclusions as to the effect of age and parity. No patients were included who had an elevated non-protein nitrogen or other evidences of being chronic nephritics. Three had signs of preeclampsia accompanying the nausea and vomiting. All treatment was given orally after meals with instructions to repeat the dose if vomiting occurred. We used nicotinic acid in tablet form and five components of the Vitamin B complex in a tablet form designated by their initials. Our total group that we were able to follow consisted of sixteen patients.

Some of them received nicotinic acid alone: 50 mg. T. I. D.; others received nicotinic acid, and later, TRN6P; some received only TRN6P, one tablet after each meal. The average patient reported cessation of vomiting and partial relief from the nausea within two or three days after beginning nicotinic acid; however, the vomiting recurred within
three or four weeks unless she received the TRN6P, even though she continued the nicotinic acid. If the TRN6P was administered from the beginning, the nausea disappeared and did not recur as long as therapy was continued. Some of them had a recurrence of the nausea and vomiting within one or two weeks after discontinuing TRN6P, which was relieved by again giving it. Those who had accompanying headaches usually reported that the headache was relieved after beginning Vitamin therapy. Those with symptoms of late toxemia, such as hypertension, showed little effect from the treatment. Practically all patients reported that they felt better after beginning therapy. Two patients had some difficulty taking TRN6P because of the nauseating odor.

Not all visits are listed, but only those that show significant changes.

Case Histories:

I. White Para O, Gravida 1, age 18, at 3 months gestation.
1-27-41 BP 100/48, wt. 125. Physical examination essentially negative. Laboratory findings within normal range. Reported nausea and vomiting for one month several times each day. R/nicotinic acid, 50 mg. T.I.D. pc.
2-17-41 Reported no nausea or vomiting; felt well. No medicine given.
3-12-41 Some nausea. R/TRN6P tablets, T.I.D. pc. for one week.
3-31-41 Nausea gone, no further treatment until
5-12-41 Nausea returned. R/TRN6P; one week. Reported that nausea was relieved after again starting treatment.
6-2-41 BP 120/70, wt. 156. Had some generalized edema which remained until delivery.
(Total dosage of R/TRN6P—42 tablets.)

II. Colored Para II, Gravida III, age 21, at 7½ months gestation.
3-1-41 BP 120/64, wt. 168, Hb 9, urine albumin +. Other findings essentially negative. Complained of nausea and weak feeling for two weeks. R/nicotinic acid, 50 mg. after meals.
3-15-41 Was not seen again until time of delivery. At delivery two weeks later reported partial improvement. This patient probably was not a true case of nausea and vomiting of pregnancy.

III. Colored Para O, Gravida I, age 15, at 5 months gestation.
Laboratory and physical findings essentially negative. Complained of daily nausea and vomiting since second month. R/nicotinic acid, 50 mg. after each meal which stopped the vomiting but did not completely relieve the nausea.
4-16-41 R/TRN6P tablets, T.I.D. pc. for one week. Was completely relieved and no recurrence.

IV. Colored Para II, Gravida III, age 34, at 4½ months gestation.
4-25-41 BP 156/82. Had some edema and hypertension. Complained of nausea and daily vomiting since first month of pregnancy.
R/TRN6P tablets two weeks which relieved the nausea but not the hypertension or edema.
5-25-41 BP 150/70. No further nausea or vomiting.
(Total dosage of R/TRN6P—21 tablets.)

V. Colored Para O, Gravida I, age 18, at 3 months gestation.
4-25-41 BP 14./76, wt. 195, Hb 8, urine negative. Physical findings essentially negative. Complained of nausea and epigastric pain. R/TRN6P one week.
5-7-41 Reported pain and nausea gone. No further treatments or complaints.
(Total dosage of R/TRN6P—45 tablets.)

VI. White Para I, Gravida 11, age 31, at 3 months gestation.
4-25-41 Laboratory and physical findings essentially negative. Complained of nausea and vomiting of six weeks duration. R/TRN6P, T.I.D. pc. one week.
5-2-41 No further nausea and vomiting. No later recurrence.
(Total dosage of R/TRN6P—21 tablets.)

VII. White Para O, Gravida I, age 17, at 2 months gestation.
4-20-41 Laboratory and physical findings essentially negative. Complained of nausea and vomiting of two weeks duration. R/TRN6P tablets, T.I.D. pc. two weeks.
5-5-41 Nausea gone—disappeared second day of treatment. No treatment after first two weeks, no recurrence.
(Total dosage of R/TRN6P—42 tablets.)

VIII. White Para I, Gravida II, age 24, at 2½ months gestation.
5-14-41 Complains of nausea and sour stomach for one month. R/TRN6P, T.I.D. pc. two weeks.
6-4-41 Nausea and vomiting disappeared within a few days after beginning treatment.
(Total dosage of R/TRN6P—42 tablets.)

IX. White Para I, Gravida I, age 22, at 2 months gestation.
4-9-41 Complains of severe nausea and vomiting of one month duration. R/nicotinic acid, 50 mg. T.I.D. pc. continuously until 5-1-41 Reported vomiting stopped and nausea partially relieved. R/TRN6P tablets, T.I.D. pc. Completely relieved the nausea after few days. Taken two weeks with no recurrence.
(Total dosage of R/TRN6P—42 tablets.)

X. White Para I, Gravida II, age 19, six weeks gestation.
5-12-41 Reported nausea and vomiting for two weeks. R/TRN6P one week.
6-2-41 Was relieved.
6-19-41 Returned with nausea and vomiting—had a recurrence two weeks ago. R/nicotinic acid, 50 mg. T.I.D.
6-25-41 Partial relief from nausea. Vomiting gone.
(Total dosage of R/TRN6P—21 tablets.)
XI. White Para I, Gravida II, age 35, due date uncertain. Last menstrual period in March.
5-30-41 Nausea and vomiting of about one month duration. R/nicotinic acid, 50 mg. T.I.D. pc.
6-13-41 Nausea partially relieved, vomiting stopped. No TRN6P available.

XII. Colored Para O, Gravida I, age 18, at 8 months gestation.
5-30-41 Nausea and vomiting one month. R/nicotinic acid, 50 mg. T.I.D. pc.
6-13-41 Stopped vomiting, still a little nausea. No TRN6P available.

XIII. White Para O, Gravida I, age 37, at 4½ months gestation.
3-19-41 Laboratory and physical findings were essentially negative. Had nausea and vomiting since second month. C/nicotinic acid, 50 mg. after meals.
3-24-41 Vomiting stopped but still some nausea. Still continuing nicotinic acid.
4-9-41 Nausea worse despite nicotinic acid. TRN6P tablets.
5-7-41 Medication continued to date without further nausea.
5-14-41 No medication since 5-7-41. No return of nausea and vomiting.
(Total dosage of R/TRN6P—72 tablets.)

XIV. White Para III, Gravida IV, age 21, at 3 months gestation.
3-19-41 Complains of nausea and vomiting, headache, since first month. R/nicotinic acid, 50 mg. T.I.D. pc.
4-9-41 Headache better, still vomits each morning and is somewhat nauseated.
4-30-41 R/TRN6P tablets.
5-7-41 Still vomits in morning. Continue medication.
5-14-41 Still feels better, but vomits some.
6-11-41 Feels well, vomits occasionally in morning.
(This patient was a thin, over-worked, neurotic type of individual.)
(Total dosage of R/TRN6P—Approximately 42 tablets.)

XV. White Para III, Gravida IV, age 31, at 5 months gestation.
2-28-41 BP 160/92, wt. 138½, urine negative. Physical and laboratory findings were essentially negative. Complains of nausea each morning since second month. Placed on salt-free diet. R/nicotinic acid, 50 mg. T.I.D. pc.
3-21-41 BP 150/80, wt. 138½. Nausea somewhat better. Continue nicotinic acid one week.
4-11-41 BP 156/90, wt. 134½, albumin 2+. Nausea has returned. Been on salt-free diet, but no other medication for past two weeks. R/TRN6P.
4-18-41 BP 160/90, wt. 132¼. Nausea much better, continue TRN6P.
4-25-41 BP 166/90, wt. 138½. No nausea, continue medication.
5-7-41  No nausea. No medication.
5-14-41  No nausea. No medication.
Total dosage of R/TRX6P—78 tablets.)

XVI. White Para IV, Gravida VI, age 37, at 4 months gestation.
3-21-41  BP 150/70, wt. 122$. Nausea gone, still has abdominal pain.
4-2-41   BP 138/82, wt. 129. No nausea, continue medication.
5-14-41  BP 148/82, wt. 135. No nausea, continue medication.
6-11-41  BP 144/90. No nausea. No medication since 5-21-41.
Total dosage of R/TRX6P—102 tablets.)

While our series is not sufficiently large to be conclusive, it does suggest that the Vitamin B complex may play a role. The complete complex gave gratifying results in almost every instance. One poorly nourished, over-worked, neurotic type of patient, who had her fourth pregnancy at twenty-one, responded rather poorly to the treatment.

Because these were ambulatory clinic patients, it was not possible to conduct rigidly controlled experiments. The majority of them cooperated well in carrying out directions and in making return visits. There were six others who failed to return and we are unable to include them in our series.

The TRX6P tablets contained the following components of the Vitamin B complex in the amounts as listed.
Thiamin chloride—5 mg. per tablet.
Riboflavin—5 mg. per tablet.
Nicotinamide—25 mg. per tablet.
Pyridoxine hydrochloride—10 mg. per tablet.
Calcium Pantothenate—25 mg. per tablet.

(The drugs used were very kindly furnished by Merck and Company.)

"MANNERISMS"

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In a former short article in this journal, some time was devoted to the discussion of two fundamental characteristics of effective medical writing. As a companion thought this brief message will deal with some errors in presenting our thoughts in both written and spoken language. Many otherwise valuable papers have been marred and some even utterly ruined in their presentation. In many if not all such cases the essayist is totally ignorant of the cause of the failure of his efforts.
A few of the most glaring mistakes of this kind will show the value of reducing such peculiarities to a minimum. Few speakers and still fewer readers can accomplish the difficult feat of speaking and manipulating a cigarette at the same time. The cigarette always and the essay usually suffers.

Those who unfortunately are compelled to use glasses will find that their presentations will be more efficient if they can learn either to read without their glasses or talk with them. Many excellent papers have been rendered almost comic by frequent removal and replacing of glasses, especially if the ones with long side pieces running around the ears are in use. Some annoy or amuse the audience by chewing the side pieces between the use of the lenses. One superior court judge would scandalize the jury by using the side pieces as ear spoons while delivering his charge. Some years ago a student at the University of Georgia in attempting to deliver his maiden effort in his literary society almost wore holes in the carpet by tossing and dragging his chair around the room during his participation in the debate.

Common oddity of speech is the interjection of some meaningless word or phrase while collecting words to add to what has just been said.

One is reminded of the little girl who had acquired the habit of talking faster than she could think. On one occasion she was sitting in her father’s lap and saw a mule and cart pass. She exclaimed: “I see old Muley,” and then her ideas gave out so she repeated the expression several times to fill in the gap. Students are especially prone to note such repetitions and have been known to check and record the number of the repetitions during the course of the class periods. In one instance the record reached the century mark.

Perhaps the following illustration will serve to clarify the subject. At a luncheon meeting of a small medical society, a very instructive and well written paper was presented. In the presentation the essayist lost much of his efficiency by attempting to negotiate a cigarette and his paper at the same time. One of the men who led in the discussion arose and gathered up his napkin and one or two neighboring ones and spent the whole time he was speaking in folding and unfolding and crumbing the table as far as he could reach on either side.

The next speaker seized a knife and spent the whole time he was speaking in prizing and pushing all the glasses, cups, saucers and plates within reach. One would almost wonder if he were preparing to treat the audience to an exhibition in manipulation of the three balls or some similar feat of dexterity.