ber of patients suffering from pulmonary tuberculosis these few cases appear very insignificant. Sepsis, especially the attenuated form known as acute articular rheumatism, when accompanied by endocarditis, is a much more potent factor.

There are four examples of concretio cordis accompanied by nephritis. In none of these is there any manifest cause of the pericarditis except the nephritis, and while it is generally stated and generally true that pericarditis accompanying nephritis is an advance courier of death, this is not always so, as was illustrated when speaking of the acute pericarditis, and we must assume the nephritis as the cause in these cases. It is, of course, possible that the concretio cordis came from some other cause and the nephritis is superimposed.

In two instances the obliterative pericarditis was associated with an aneurysm of the aorta. In 19 cases the process which excited the old pericarditis could not be determined at all, or at least not with certainty. In 9 of the cases the immediate cause of death was an acute croupous pneumonia, and neither history nor autopsy cleared up the questionable cause of the pericarditis. In four cases the death was due to cardiac insufficiency. In the other cases endocarditis, tuberculosis and chronic nephritis were combined in various ways, and in such manner as to prevent any safe guess as to which, if either, caused the pericarditis. The most noteworthy fact in these cases is the large number of deaths caused by pneumonia—9 out of 19.

CONCLUSIONS.

1. Cases of acute pericarditis clinically primary occur, but are rare.

2. Diseases to which pericarditis appears as a complication are in order of their frequency; pneumonia, 34 per cent.; rheumatism, 28.36 per cent.; chronic diffuse nephritis, 11.2 per cent.; tuberculosis, 10 per cent.; sepsis, 4.7 per cent.; aneurysm, 2.6 per cent.; typhoid, 1.7 per cent.

3. The more extensive a pneumonia the greater the danger of this complication.

4. The danger is somewhat greater with left than with right-sided pneumonia.

5. Where only one lobe is involved the danger is least with a right upper-lobed pneumonia, and greatest with a right middle or left upper-lobed pneumonia.

6. With a unilobar pneumonia the chances of a pericarditis are 1 in 40; with a bilobar or trilobar, 1 in 10; with a quadrilobar, 1 in 5, and with a pneumonia of the entire left lung, 1 in 8.

7. The mortality of pneumonia with pericarditis is 92.4 per cent.

8. Rheumatic pericarditis is complicated by endocarditis in 60 per cent. of the cases, i. e., three to four times the normal rate of cases of endocarditis.

9. The danger of pericarditis complicating rheumatism is the greater the younger the individual, and is somewhat greater with males than with females.

10. So far as acute pericarditis is concerned, the site and extent of the endocarditis is apparently of no importance.

11. Pericarditis appears as a complication of all forms of nephritis, but particularly the chronic diffuse nephritis with contraction.

12. It is an extremely ominous thing, for 22, i. e., 84.6 per cent. of the cases died.

13. It is still uncertain whether the pericarditis is toxic or infectious.

14. Tuberculosis excites only one-tenth of the cases, and when one considers the extreme frequency of tuberculosis, pericarditis must be regarded as a rare complication.

15. Pericarditis may be a part of a generalized acute tuberculosis, but is more often the result of a chronic tuberculosis of the lungs or mediastinal glands.

16. Septicemia and pyemia contribute a very considerable number of cases of pericarditis. The primary focus may be remote or close to the pericardium.

17. Aneurysm of the aorta causes 2.6 per cent. of all the cases, a very high figure when one recalls the comparative infrequency of aneurysm.

18. Typhoid fever, which is rarely complicated by inflammation of the serous membranes, other than the peritoneum, contributed 4 cases, which is 1.7 per cent.

19. The cases of obliteration of the pericardium are due to the following causes arranged in order of importance; endocarditis, tuberculosis, chronic nephritis, aneurysm.

20. More than one-half of the cases, in which the cause was clear, were due to endocarditis, or rather to some cause common to both the endocarditis and the pericarditis, and more than one-half of these cases showed a combined aortic and mitral endocarditis.

21. Relatively six times as many cases of obliteration of the pericardium occur with aortic and mitral endocarditis than with either lesion singly.

22. Tuberculosis causes but few cases of obliterative pericarditis.

23. Pericarditis, accompanying nephritis, is not always fatal, but may apparently end in the formation of adhesions.

[Remainder of papers in the Symposium, with the discussion, will follow next week.]

THE EXTRACTION OF CATARACT WITHOUT IRIDECTOMY.*

S. D. RISLEY, M.D.

PHILADELPHIA.

Until very recently I have performed all extractions of cataract by the combined method, that is to say, with iridectomy, and in a considerable percentage of cases the iridectomy was performed as a preliminary operation from four to six weeks before the extraction was undertaken. This plan was adopted for the reason that I believed the prognosis was better, especially with preliminary iridectomy. For the past few years, prompted by the favorable reports of other surgeons, I have done the simple extraction, but with a few exceptions only in selected cases. The grounds for selection were the absence of any noteworthy pathological history, or discoverable indication of pronounced uveal disease; a promptly reacting iris, a pupil which dilated readily to at least large medium under a mydriatic; and a lens with more or less well-defined sectors and without transparent anterior cortex, that is to say a ripe cataract. A long history of asthenopia, preceding the failure of vision from incipient and immature cataract, a more or less discolored iris, sluggish in its reaction to light and shade, and to mydriatics, white patches on the lens capsule, a dark or brownish lens, injected conjunctiva and swollen caruncles associated with headache, and a protracted ripening of the cataract, furnished a group

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Wierdemann.

of conditions which excluded the case from any attempt at simple extraction. Many of the excluded cases came under observation in their early history when it was still possible to study the existing intraocular conditions in one or both eyes. Chorioidal disease associated with vitreous degeneration was frequently found. The degeneration of the lens in this group of cases usually began with a granular, outlined nucleus and disease at the posterior pole, probably of the posterior capsule, to be followed by peripheral spicules and the tardy ripening or opacification of the entire lens; or the anterior cortex remained for an indefinite period translucent and became amber colored. The participation of the uveal tract in this chronic disease process was indicated by the sluggish iris which did not respond fully to the mydriatic and by a chronic dilatation of the anterior perforating ciliary vessels. To attempt to dislodge the lens from the diseased posterior capsule, to force it through the small pupil of an inelastic iris, prone at best to inflammatory reaction from its association with the general uveal disease, thus causing an inevitable traumatism, was regarded as unwise surgery. The compound operation, often with preliminary iridectomy, was therefore adopted in the group of cases more or less accurately described in the foregoing remarks.

TECHNIQUE OF SIMPLE EXTRACTION.

Even in favorable cases the technique of simple extraction is of signal importance. With rare exceptions where the result has been in any respect disappointing it could be traced to wanting docility upon the part of the patient or to a fault on my own part in some detail of the operation. I have not always found it possible to accurately carry out in all its details my own conception of the rigid mechanical and mathematical requirements of a perfect technique. A variety of circumstances are lurking unseen to trip the most wary. A most carefully selected knife for some unaccountable reason proves faulty and disappointing at the critical moment; the slightest change in the location of the cornea in relation to the source of light presents annoying reflexes and adds materially to the deceptive conditions due to the optical or refraction effects of the curved surface of the cornea, and as a result the counter puncture is not exactly as designed; any too vigorous effort to correct the position of the eye by means of the fixation forceps may distort a readily yielding globe, not only producing changed optical conditions in the cornea, which may be deceptive as to the exact location of the knife, but causing the iris to fall in front of its edge. When the possible action of the patient is added to these it is obvious that the realization of a perfectly correct technique is not always obtainable.

The knife I prefer is ground hollow, 2 mm. wide and 28 to 30 mm. long, and I carefully select one with a point not so finely drawn as to be invisible when held before the dark surface of the iris. A too fine point is often responsible for the faulty counter puncture. The puncture and counter puncture are made exactly at the clear limbus, the width of the knife blade above the horizontal meridian of the cornea. The section is then carried upward without deviation to the upper border of the cornea where it is made to dip slightly backward to secure a conjunctival flap. The section is made while the lids are held apart with a soft spring speculum, the eye being fixed with toothed forceps grasping the conjunctiva and subconjunctival tissue at the lower end of the vertical meridian of the cornea near the limbus. An anchor or T-shaped cap-

sulotomy is then made and the speculum removed. The upper lid is raised by an assistant either with the finger or an elevator; the posterior lip of the wound is supported firmly by a horn spatula and the lens caused to present by pressure with the finger below, exerted through the lower lid, which is made to follow the escaping lens with a to and fro movement to secure the escape of any tardy remnants of cortex which may be scraped off by passing through the pupil and wound. No effort is made to immediately replace the prolapsed iris except by a gentle stream of warm sterile physiological salt solution from a fine pointed pipette. If the iris does not return the lids are closed gently and a light rotary massage with the tip of the finger, exerted through the upper lid, and a moment's rest permitted. If any tendency to prolapse remains it will usually be found to be due either to a faulty corneal section, which is shown by a tendency of the wound to gape, or by the collection of fragments of cortex behind the iris, or possibly by a rupture of the suspensory ligament above and the presentation of vitreous at that point behind the iris. In either of the last named conditions gentle pressure backward and downward upon the iris with the round surface of the spatula will often reduce the vitreous or cause the imprisoned fragments of lens cortex to present in the pupil.

In every case where subsequent prolapse of the iris actually occurred or when the tendency to prolapse was manifested by a distortion of the pupil and adhesion of the periphery of the iris to some portion of the wound during convalescence, the tendency was obvious at the time of the operation. Exceptions to this rule are furnished by one case in the following reports when the prolapse was produced on the fifth day, by straining in the attempt to urinate. The operations, with few exceptions, were made under cocaine and usually with a dilatation of the pupil by atropia. A solution of salicylate of eserine was uniformly instilled after the last sterilization of the eye and immediately before the corneal section was made. The effect of this is to maintain for an hour or more the contraction of the pupil, and a lessening of the probability of prolapse during the most critical period of convalescence, after which the atropia dilatation is resumed. Irrigation of the anterior chamber for the purpose of washing away any remaining cortex was studiously avoided except in the earliest operations. I prefer to trust to the absorption of small flakes of cortex rather than risk the rupture of the suspensory ligament by protracted efforts for their removal by manipulation or the occurrence of striped keratitis from the irritation of the fluids used in washing out the anterior chamber.

AFTER TREATMENT.

If the iris did not promptly return after the delivery of the lens, or if the pupil manifested any tendency to distortion in the direction of the wound the dressings were not applied immediately. If the tendency to prolapse increased, a narrow iridectomy was made and the case classed with the compound operations. There was cause for regret in every case when this rule was neglected. After thorough irrigation with warm boracic acid or salt solution the conjunctival flap was carefully replaced, the lids of both eyes closed and fixed by strips of isinglass plaster, placed in the form of the letter X; over these a moist square of gauze and a pad of cotton. This was in turn fastened by a strip of isinglass carried from temple to temple and a second strip placed diag-

onally from the center of the brow downward and outward to the cheek. A knit bandage with tapes was then applied over the eyes and while the tapes were held

firmly at the temples by an assistant the ends were carried backward and forced between the pillow and occiput without raising the patient's head and tied in

Name, Age, Volume.	Operation Notes.	Convalescence.	Prolapse.	Remarks and Vision.
1. L. D., age 66.	10, 10, '92—Operation smooth.	Without incident. 11, 30, '92—secondary, leaving a large round, cent. p. 5, 15, '93—V. = 6/IX. +12 C. +1 C. 180°.	None	3, 29, '97—+14 S. V. = 6/VII 1/2.
2. N. Y., age 68.	11, 17, '99—Smooth upward section; then patient behaved badly. Lens extracted with loop; some loss of vit. and prolapse of iris.	11, 8—wound healed kindly. Ether administered on second day and prolapse excised and eye did well.	Prolapse excised on second day.	Notes incomplete: good vision.
3. E. A., age 75. Morganian (cat., xiii, 204; illiterate; blind fourteen years.	11, 5, '94—Lens escaped in capsule on completion of section and iris folded itself in upper angle of Ant. Ch., leaving a gibbous pupil, clear and black.	11, 7, '94—no reaction; pupil still gibbous. 11, 14—pupil changed to a flaring coloboma up as after a broad iridectomy. Conj. catarrh. 11, 21—tear duct washed out. 1, 14, '95—Iris is now unfolding itself from above and appears below upper limbus.	None; pupil ovoid.	1, 14, '95—V. = 6/IX.
4. J. C., age 59, Farmer.	10, 23, '99—smooth extraction, small conj. flap; eye closed with pupil slightly ovoid.	10, 25—eye quiet, no reaction. 10, 28—A. C. filled with blood clot and blood on dressings. No pain. Patient thinks he injured eye in the night. 11, 20—blood slowly absorbed, leaving gray capsule. Capsulotomy, leaving clear pupil. 11, 22—no reaction.	None	11, 24, '99—+10 C. +3 C. ax. 180°. V. = 6/VI.
5. M. A., age 66.	5, 29, '99—conj. flap; iris punc. by knife point but disentangled and smooth section made; clear, black central pupil, slight distortion up and out.	No reaction until seventh day. Slight iritis with flushed eye and two synechia with strong band across, pupil oval. Capsulotomy with bent keratome. No reaction. 6, 30—capsulotomy.	None	6, 30; +10 D. V. = 6/VI.
6. C. L., age 66, O. S.	5, 17, '99—operation smooth; conj. flap; clear black pupil, but ovoid, with tendency to prolapse; eserine instilled and light dressing; in an hr. pupil central and nearly round. Eye dressed as usual.	First dressing 16 hrs. after operation; no pain, no puffing of lids. Eye not opened. On 2d day eye opened and iris prolapsed into wound, filling entire section. Spec. introduced, eye washed. Cocain and broad iridectomy made, leaving clear wound and moderate coloboma. No reaction, eye healed without incident. Eye recovered without reaction, but upper margin of pupil drawn upward, but entangled in wound, which is smooth.	Prolapse on second day excised.	Much opaque cortex on 2d d.; prob. post. which prob. collect'd behind iris, causing prolapse; 6, 19, capsulotomy; V. = 6/XII.
7. C. L., age 66, O. D.	11, 13, '99—conj. flap; opr. smooth; pupil clear and black, slightly ovoid; upper rim drawn slightly upward, tending to prolapse.	Eye recovered without reaction, but upper margin of pupil drawn upward, but entangled in wound, which is smooth.	None, but pupil ovoid.	11, 30, '99; +10 C. +2 C. ax. 170°. V. = 6/IX.
8. A. G., age 70; high grade imbecile.	10, 9, '99—ether anes.; conj. flap; profuse bleeding into A. C.; central round pupil.	No incident, but capsule gray.	None	12, '99; +10 C. +2 C. ax. 90°. V. = 6/IX.
9. J. T., age 70.	3, 6, '99—Operation smooth; conj. flap; round, central pupil.	No reaction.	None	3, 15, '99; sees time on watch; 4, 19, '99, +2 C. +3 C. ax. 165°. V. = 6/XII.
10. A. W., age 67.	11, 28, '98—smooth extraction; pupil black, slight notch above.	No incident; some cortex in capsule above and below, clear black center.	None	V., no record.
11. S. R., age 58; coal worker.	11, 28, '99—operation smooth; central, round, clear pupil.	12, 9—eye white.	None	12, 9, '98; sees time on watch; 12, 16, '98, +8.50 C. 5.50 C. ax. 180°. V. = 6/VII-1/2.
12. L. C., age 65.	11, 4, '98—Operation smooth; large conj. flap. (Paralysis.)	11, 18, '98—eye healed without reaction, round central pupil; but on eighth day lost power over left arm, which spread to complete paralysis of left arm and leg. Sees time on watch.	None	P. round, black, reacting to light; sees time on watch; sent home without glass.
13. R. W., age 49.	10, 10, '98—too small section; pupil central but slightly ovoid upward.	10, 14—eye red; much opaque cortex and gray membrane; 12, 12—secondary.	None	2, 23, '99; +10 C. 5 C. ax. 25°. V. = 6/V.
14. A. H., age 74.	12, 13, '97—conj. flap; smooth sect.; patient squeezed and ext. lens immediately after capsulotomy; clear black pupil; slt. tear in upper rim, central pupil; clear.	12, 17—some conj. injection and delicate adhesions to capsule; 12, 27—eye white.	None	V., no record.
15. M. B., age 60.	11, 15, '97—Operation smooth; round, central pupil; clear.	11, 17—no reaction; 11, 24—gray membrane; 1, 3, '98—secondary.	None	1, 10, '98; +10 C. +2 C. ax. 135°. V. = 6/VI.
16. T. W. K., age 60	Some loss of vitreous.	Periphery of iris adherent. Hemorrhage in A. C., oval pupil.	None	V. = 6/LX.
17. L. A. H., age 66; O. S.	Tough capsule; some cortex remains; 11, 1, '97.	Mild iritis with synechia on eighth day. Much opaque cortex; 1, 10, '98—capsulotomy.	None	1, 26, '98; +10 C. +2 C. ax. 90°. V. = 6/VI.
18. A. R., age 49; eye had been injured.	11, 15, '97—small nick in extreme periphery of iris while making sec.; eye squeezed by patient, suddenly extruding lens after capsulotomy; round, central, black pupil; no tendency to prolapse.	11, 17—A. C. restored; eye not red; 11, 22—says he "banged" his eye in the night; small cyst of conj. above section; bandage; 11, 28—small synechia capsule; 1, 3, '98—capsulotomy; 1, 7—marked reaction and iritis; cold compresses.	None	4, 4, '98; +10 C. +2 C. ax. 180°. V. = 6/IX.
19. G. H., age 50; O. S.	10, 18, '97—tough capsule; soft cortex; hard nucleus; cort. removed with spoon; round, cent., black p.	No incident; 11, '97—secondary; central pupil; 11, 8, '97—+6 C. +4 C. ax. 90°. V. = 6/XXX.	None	1, 12, '98; +10 C. +2 C. ax. 180°. V. = 6/XII.
20. R. McN., age 68	3, 29, '97—large amount of soft cortex delivered with a spoon; some retained; bead of vitreous presented, but none lost; round, central pupil, upper half black.	4, 2—A. C. restored; eye too red; opaque cortex fills pupil; 4, 5—pain, gray point in cornea at inner angle of wound; later a gray membrane hung from this; conj. chemotic and c., but slowly subsided, leaving a slight pouting of wound at inner angle, pupil drawn toward it; iris tucked into angle but not prolapsed into wound as far as can be seen.	None	1, 14, '97; +10 C. +2 C. ax. 150°. V. = 6/LX.
21. O. S., I. S., age 55; washerwoman	12, 14, '96—tough capsule; lens ext. in capsule with loop; no vit. lost.	12, 16—A. C. restored and eye quiet; stri. keratitis along border of section above; 4, 26—capsulotomy.	None	4, 19, '97; V. = 6/XX.
22. O. D., I. S., age 55	5, 31, '97—extraction simple, no notes	Iritis, synechia, gray capsule	None	7, 16, '97; +13 C. +6/XXV. Capsulotomy advised; but did not return.
23. T. B., age —; O. S. Comp. ext., V. = 6/VI. Iris fell before K.	3, 22, '97—Operation smooth; central, round, clear pupil.	No incident; 4, 26, '97—capsulotomy.	None	4, 30, '97; +9. V. = 6/IX.
24. O. D., P. C., age 51.	11, 16, '98—Iris fell before knife at extreme periphery, making small opening; otherwise opr. smooth; large amt. wht. flocculent cortex.	No incident.	None	11, 25, '98; +9 C. 2 C. ax. 60°. V. = 6/XV. 1, 4, '97; +11 C. +1 C. ax. 30°. V. = 6/XII.
25. J. McG., age —; O. S. fell before K. and made iridectomy.	10, 9, '96—lens found app. dislocated, when capsulotomy was attempted; ball soft, but lens presented by pressing on ball below and was delivered easily; clear, blk., cent., rd. pupil; no tendency to prolapse.	No incident; 11, 13, '96—capsulotomy	None	11, 23, '96; +10 C. +1 C. ax. 180°. V. = 6/XII.
26. J. McD., O. D.	2, 3, '96—smooth extraction; central, round, clear pupil; counts fingers.	No incident until fifth day; some injection of conj., and on seventh day slight synechia to capsule.	None	2, 28, '96; +12. +1 C. ax. 115°. V. = 6/XII.
27. O. S., J. P. R., age 52.	11, 25, '95—operation smooth; small rupture in upper rim of pupil by escaping lens; no tendency to prolapse; small, clear, central pupil; round, except small notch above.	Recovery without incident.	None	4, 5, '96; +10 C. +1 C. ax. 180°. 4, 29, '96; +11 C. ax. 135°. V. = 6/VI. 2, 6, '99; not poss. by ordinary observ. to tell operated eye. V. = 6/V.

Name, Age, Volume.	Operation Notes.	Convalescence.	Prolapse.	Remarks and Vision.
28, O. D., G. W. H., age 58; O. S., opr. on by Dr. Norris at Wills Hosp. 4 yr. ago. V. = 6/XI.	12, 16, '95—Smooth extraction; no incident; round, central pupil.	12, 30, '95—eye shows some conj. injection; no iritis. Sees time on watch.	None	12, 30, '95; later V. = 6/VI. Returned in '97 with opaque capsule and reduced V. Secondary oper. fol. by panophthalmitis and loss of eye.
29, O. S., J. J. Connor, age 51.	11, 25, '95—smooth, round, clear central pupil.	Without incident; 3, 24, '97—capsulotomy. V. = 6, 21.	None	+11 = 6/VI.
30, Mr. Hart.	Feb., '96—operation smooth; central, round, clear pupil.	Small hemorrhage on fifth day in A. C., but rapidly absorbed.	None	+13 C. +1 C. ax. 10°. V. = 6/V.
31.	Operation smooth; central, round pupil.	Catheter necessary; tried to escape it by getting out of bed on the fifth day; pain in eye while straining to urinate causing prolapse of iris.	Prolapse while straining to urinate 5th d.	V. = 6/XII.
32, O. S., Mrs. C. L. W., age 61.	5, 14, '00—smooth operation; clear, central, round pupil.	5, 16, '00—A. C. restored; 5, 21, '00—eye getting white; some adhesions between caps. and iris pupil; dilates irregularly.	None	6, 15, '00; +11 C. +2.50 C. ax. 1. V. = 6/VII-1/2.
33, A. O., age 68.	11, 19, '00—opr. smooth, except upper rim of p. caught in removing cystotome; spec. removed; lens app. settled back, and inescaping was preceded by small amt. of very fluid vit, leaving part of lens at inner side p., deeply placed; eye closed, fearing greater loss of vitreous.	11, 20, '00—A. C. restored; 11, 23—eye doing well, no reaction, some swelling of conj. flap; outer half of pupil clear and black. 11, 26, '00—eye almost white, but much bulging of conj. flap and app. gaping of wound under it; pupil round; compress bandage; 1, 18, '01 cataract mass slowly absorbing; 3, 15—cortex almost disappeared.	None	6, 15, '01; +11 C. +2.50 C. ax. 10°. V. = 6/VII-1/2.
34, O. D., R. F., age 57.	11, 19, '00—smooth; lens extrac., leaving some soft cortex; patient turned eye strongly downward, rupturing the susp. and causing a gush of fluid vitreous; eye closed with round, central pupil.	11, 21—eye doing well; 11, 23—some pain in night and morning; hemorrhage in A. C.; 11, 26—eye almost quiet; large, dark blood clot in lower angle of A. C.	None	1, 2, '01; +10.50 C. +4 C. ax. 180°. V. = 6/V ?
35, Mrs. S. W., age 70.	11, 19, '00—smooth; conj. flap; anchor section in cap.; lens delivered, leaving much soft cortex, which was removed with spoon.	11, 26, '00—without incident; some pointing of conj.; white band in capsule; central, round pupil; 12, 10, '00—band cut in two.	None	12, 17, '00; +9.50 C. +1.50 C. ax. 130°. V. = 6/VI.
36, O. S., J. L., age 67.	12, 3, '00—(dull knife) pupil remains oval, up and out; a few flakes of cortex in A. C.	Without incident.	None	12, 21, '00; +10 C. +1.75 C. ax. 180°. V. = 6/VI.
37, M. P., age 68.	Opr. smooth; small conj. flap; large quant. of soft cortex fol. a large lens; small, central, round pupil.	3, 1, '01—Capsulotomy.	None	V. = 6/VII½.
38, D. W., age 64.	4, 1, '01—Opr. smooth, small amt. of gray cortex in a central, round p.; slight tendency to become irreg. at pupillary margin; becomes entirely round on stroking with lid.	Iris adherent; capsulotomy; sees time on watch; pupil oval.	None	4, 15, '01; V. = 6/IX. Before discharged sud. attack of Iritis, fol. by steamy cornea and increased tens.
39, J. P. R., age 54. O. D.	Feb., '99 operation smooth; central, round black pupil.	Eye recovered without reaction; clear, round pupil.	None	Mar., '99; +10 C. +1 C. ax. 180°. V. = 6/V.
40, R. F., age 57.	5, 6, '01—ether anesthesia; opr. smooth; central, round, p., gray cap.	Recovery without incident; round, central pupil; small gray band diagonally across it.	None	5, 27, '01; +11 S. V. = 6/XV.
41, R. W., age 50; O. S.	Operation smooth; central, round, black pupil.	Recovery without incident.	None	+11 C. +3.75 C. ax. 150° V. = 6/VII.

front. The operations were invariably performed on the bed the patient was to occupy subsequently so that the necessity of moving from operation table to bed was avoided. These details I believe to be important since the inevitable muscular tension due to raising the head while applying the roller bandage, or in moving the patient to the bed, favor the reopening of the wound and consequent prolapse of the iris. It is probable that most prolapses occur at this juncture.

The following morning the bandage was removed and the lids inspected. If there was no swelling or undue discharge the isinglass strips were not disturbed. The bandage was reapplied and allowed to remain for twenty-four hours. The dressings were then removed, the lids gently opened, the eye irrigated with warm boracic solution, a drop of atropia instilled and after inspection the bandage reapplied, omitting the isinglass strips from the lids if the anterior chamber had refilled.

The tabulated histories of 41 cases, all occurring at the Wills Eye Hospital, are included in the report. The following is a summary: The operation was smooth, that is to say, without noteworthy incident in 31 cases, and complicated in 10. Convalescence progressed without incident in 22 cases. It was complicated as follows in 19, prolapse of the iris in three, namely, Cases 2, 6 and 31 of the series.

CASE 2.—The patient behaved badly; the lens was extracted with the loop with slight loss of vitreous, but eye closed with a nearly round pupil; wound healed promptly, but the iris was found prolapsed on second day and was excised. On discharge from the hospital, V. = 6/XII.

CASE 6.—Operation smooth, but pupil ovoid. Eserin was instilled and a light dressing applied. In an hour pupil was

black, central and nearly round. On second dressing iris was found prolapsed and was excised. There was much opaque cortex, the collection of which back of the iris while still transparent at the time of operation had become opaque, its swelling probably accounting for the tendency to prolapse. V. = 6/XII at time of discharge from the hospital, with some gray capsule.

CASE 31.—Operation was smooth, leaving a clear, round central pupil. It was found necessary to empty his bladder with the catheter during convalescence. In trying to escape this on the fifth day during the absence of the nurse from the ward he sought the urinal and while straining to urinate felt a sudden pain in the eye. A small prolapse of the iris into the nasal end of the wound was found. Although the eye was white before the accident, it became red and convalescence was protracted. V. = 6/XII at time of discharge from the hospital. It will be observed that in two cases the prolapse was foreshadowed at the time of operation by the ovoid pupil and a tendency to prolapse. In one of these the patient acted badly. It would have been better to have performed the iridectomy in both cases at the time of extraction.

In the third case the prolapse was obviously due to the patient's imprudence. The pupil was oval in five cases from adhesion of the periphery of the iris to some portion of the wound. In the remaining 30 the pupil was round and central. Conjunctival catarrh occurred in three cases. Iritis, usually of a mild type, but resulting in adhesions to the capsule and a somewhat protracted convalescence, occurred in eight cases, commencing usually from the sixth to eighth day of convalescence. In all of these the capsule became gray and secondary operation was required. Notable loss of vitreous occurred in but one case and then was due to the want of self-control by the patient. There was slight

loss in two other cases, in neither of which did it lead to any notable modification of the result. There was hemorrhage into the anterior chamber three times, twice from injury, once without obvious reason. In the traumatic cases both recovered without permanent injury; in the third case the hemorrhage was profuse, quite filling the anterior chamber and the patient recovered with V. = 6/LX.

The nasal end of the wound became infected in one case, but prompt treatment arrested the progress of the ulcer, but left the periphery of the iris adherent to the wound at that point causing a slightly ovoid pupil.

Secondary operations were performed in 14 cases. An exceptionally favorable result was obtained in one patient. Both eyes were operated upon at different sittings resulting in both in central, round, freely acting pupils and V. = 6/V in each eye. He enjoys binocular vision both for distance and in reading. But one loss is to be recorded. The patient left the hospital with V. = 6/VII $\frac{1}{2}$, but returned in two years with vision sunk to 6/XV due to a gray capsule, following "a cold" in his eye. A capsulotomy was performed followed by no reaction and V. rose to 6/VI. He received his discharge from the hospital on the fifth day with the eye white. He returned the following day with the eye flushed and painful. There was a gray point at the site of the corneal puncture which was rapidly followed by purulent panophthalmitis and loss of the eye.

The visual results were as follows: V. = 6/V in 5 cases; 6/VI in eight cases; 6/VII $\frac{1}{2}$ in 5 cases; 6/IX in seven cases; 6/XII in seven cases; 6/XV in 2 cases; 6/XX in 1 case; 6/LX in 1 case; good in 2 cases; no record in 2 cases; total, 40 cases.

The acuity of vision in many of the cases was recorded at the time of their discharge from the hospital. It is probable that later study would have shown better vision. In some instances when V. = 6/XII secondary operations were not attempted since that vision was sufficient for gross pursuits and further risk was not deemed advisable.†

TEMPORARY CLEARING OF A CATARACTOUS LENS.*

HIRAM WOODS, JR., M.D.

BALTIMORE, MD.

The writings of Risley, Jackson, de Schweinitz, Weeks, Knapp, Pyle and others, have introduced into the management of partial lens opacities considerations which make the old and easy classification of incipient and ripe cataracts unsatisfactory to the observer, and unjust or cruel to the patient.

A few clinical truths seem to have been firmly established. We know that the situation of early opacities is of prognostic importance; that senility is neither the only nor the most important factor in etiology of so-called primary senile cataract; that the uveal tract, especially the choroid, should be minutely studied; that "spontaneous cures" now and then occur from absorption, with or without capsule puncture, or from luxation; that hygienic, optical and medicinal care are of importance, and seem to retard progress of lens-clouding; that ripening operations are unreliable, and probably entirely unnecessary; that if the opacity interferes

with vision to a great degree, and is non-progressive, extraction of so-called immature cataracts is often a safe procedure. All these things must be considered in every case of partial lens-clouding. But there is coming up in late years another question which has, at present, a greater social than scientific aspect. I mean the usefulness of the alleged cures for cataract without operation. I am not aware of any well authenticated observations, from men whom we instinctively believe, tending to prove that massage, electricity, or "absorbing drops" can be depended upon to give results obtained by inventors of the method, when used by others. Yet patients sometimes bring us accounts of alleged cures. We attribute them to the use of atropia or eserine, to a faulty diagnosis or intentional deception. Doubtless one or another of these explanations covers the great majority of such cases. Yet we know that lens opacities often follow or accompany other eye lesions which resolve. Fuchs speaks of clouding of the lens as a symptom of choroiditis, while Dr. Risley's paper, published in 1889, impresses the fact. A few reliable reports of clearing of lens-clouding are found. At the meeting of this Section a year ago such cases were mentioned and are recorded in *THE JOURNAL, AMERICAN MEDICAL ASSOCIATION*, of Dec. 15, 1900. Dr. Bates of New York saw two cases cured, and one greatly improved under treatment by Dr. James E. Kelly. Save that the patients said they were made to drink a great deal of water, no clue is given to the treatment. A still more important observation was that of Dr. Ring of Philadelphia. He saw lens opacities disappear in a specific patient under iodid of potassium. Such cases suggest the question: Is there a kind of lens-clouding which improves as the underlying cause, probably choroiditis, gets better? If, following out the reasoning in Dr. Weeks' paper a year ago, "the development of cataract is due to a departure from the normal in the nutrition of the lens," and if "hyperplastic or degenerative changes" are thus brought about, will these changes in the lens improve as the cause of malnutrition disappears? Consensus of opinion is against such occurrence. Dr. Risley,¹ discussing the papers of de Schweinitz and Weeks, after tracing the etiologic connection between choroiditis and cataract, said: "I argued that if I could arrest the cause by treatment, I could probably arrest the progress of the opacity. . . . We never see the slightest disappearance of an opacity in the lens. When an opacity is formed in the lens, you can rest assured it will remain there." Dr. de Schweinitz in his paper² quotes Alt: "The choroidal disturbance yields, but the formation of the cataract goes on undisturbed in its slow and steady progress." In his remarks, Dr. Risley traced the association of choroiditis with commencement of lens opacification. He argued that the rest, obtained by partial exclusion of light, caused the disease of the choroid to subside. Thus the lens opacity becomes non-progressive. It seemed to me, after reading these papers, that the case herein reported was sufficiently important to go on record. It is not one of spontaneous recovery without operation, for it eventually came to operation; but extensive old choroidal disease existed when lens opacities were first noticed; there was a quiescent period of nearly five years during which the choroidal disease remained inactive, and the lens opacities non-progressive, or nearly so. It was impossible to secure rest to the eyes, almost unremitting near work continuing. The cataract, seen

† I wish to acknowledge the efficient aid of Dr. E. S. Saylor in collating the histories, and in preparing the accompanying table of cases.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

1. *THE JOURNAL A. M. A.*, Dec. 15, 1900, xxxv, p. 1532.

2. *Ibid.*, Dec. 8, 1900, p. 1467.