International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Devabhaktuni P. Int J Reprod Contracept Obstet Gynecol. 2026 Jul;15(7):xxx-xxx
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20261855

Case Report

The curious case of the missing Veress needle beveled outer sheath

Pratibha Devabhaktuni*

Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital, Osmania Medical College, Hyderabad, Telangana, India

Received: 20 May 2026
Revised: 05 June 2026
Accepted: 06 June 2026

***Correspondence:**
Dr. Pratibha Devabhaktuni,
E-mail: dpdnk@yahoo.com

ABSTRACT

This incident occurred during a laparoscopic sterilization camp in Bhongir more than four decades ago. The camp operated with four operating tables functioning simultaneously, each staffed by a surgeon and an assisting nurse. To maintain the rapid workflow, laparoscopic scopes and Veress needles were continuously cleaned, sterilized and immersed in Cidex solution for 10-15 minutes in accordance with the prevailing protocol. Those who have participated in such sterilization camps will readily understand the operational procedures and working environment involved. The first lady who had the X-ray, the 12 cm long Veress needle with the sharp beveled edge was in the abdomen. In Bhongir Government hospital got the theatre sterilized, the anaesthetist with Boyles apparatus and the surgeon had come in the ambulance from Nalgonda. The author could have performed the laparotomy, but thought it better to have a surgeon in case of any eventuality. There was apprehension to shift her in an ambulance to Hyderabad, with the needle with beveled edge in her abdomen. The Veress was identified in the abdomen by 3:30 pm and a laparotomy was performed at 8:30 pm. The patient was in a stable condition. The needle was covered by omentum and near the left paracolic gutter below the splenic flexure. The needle and part of the omentum covering it were excised. The outer sheath got broken from the handle, the handle was with the inner stylet. The patient made good postoperative recovery. Antibiotic coverage was given prior to laparotomy.

Keywords: Veress needle, Missing outer sheath, Laparoscopic sterilisation

INTRODUCTION

Many techniques and aids have been used and studied with regard to the entry step in laparoscopic procedures. These include open (Hasson), closed (Veress), direct trocar insertion, disposable shielded trocars, radially expanding trocars and visual entry systems.[1] Closed (Veress) technique is now the most widely used technique, especially for gynecological surgeries.[2,3] A meta-analysis of 760,890 closed laparoscopy and 22,465 open laparoscopy cases reported the incidence of vascular injury rate in closed laparoscopy was 0.44% compared with 0% in open laparoscopy. The incidence of bowel injury was 0.7% compared with 0.5% respectively. The open (Hasson) technique eliminates the risk of vascular injury and gas embolism and reduces the risk of bowel injury and recommend the open technique to be adopted for primary laparoscopic entry.[3] In 1971, Hasson described the open technique for the first time as a way of avoiding a few of the complications associated with the Veress technique.[4]

The complication rates vary according to the entry method and device used, and accordingly, their reported incidence varies widely in the literature.[1] Some studies, example by Bonjer et al, report a higher rate of complications with closed laparoscopy: "the rates of visceral and vascular injury were respectively 0.08% and 0.07% after closed laparoscopy and 0.05% and 0% after open laparoscopy".[5]

On the other hand, the Swiss association for laparoscopic and thoracoscopic surgery stated in their study that "the open-access method used in the current series failed to show any superiority over the closed establishment of pneumoperitoneum." Other studies, by Molloy et al identified the surgical specialty as the only factor affecting the rates of complications associated with each method, with bowel complications occurring at a rate of 0.4/1000 with gynecologists and 1.5/1000 with general surgeons.[6] In the United States, a review of 51 publications including 21,547 open technique, 16,739 direct entry technique and 134,917 Veress/trocar reported entry related bowel injuries: 0.11% (open), 0.05% (direct entry) and 0.04% (Veress/trocar). Vascular injury rates were 0.01%, 0% and 0.04% respectively.[6]

In the Society of Obstetricians and Gynecologists of Canada clinical practice gynecology guidelines, the final conclusion was that "there is no evidence that the open entry technique is superior to, or inferior to the other entry techniques currently available." A Veress needle is a spring-loaded needle used to create pneumoperitoneum for laparoscopic surgery.[7] Of the three general approaches to laparoscopic access, the Veress needle technique is the oldest and most traditional. Raoul Palmer introduced the use of the Veress needle in laparoscopy to establish a pneumoperitoneum.[8]

Description of Veress needle

Modern needles are 12 to 15 cm long, with an external diameter of 2 mm. The outer cannula consists of a beveled needle point for cutting through tissues of the abdominal wall. A spring-loaded, inner stylet is positioned within the outer cannula. This inner stylet has a dull tip to protect any viscera from injury by the sharp, outer cannula. Direct pressure on the tip as when penetrating through tissue pushes the dull stylet into the shaft of the outer cannula. When the tip of the needle enters a space such as the peritoneal cavity, the dull, inner stylet springs forward. Carbon dioxide is then passed through the Veress needle to inflate the space, creating a pneumoperitoneum.[9]

In a large survey of 155,987 gynecologic procedures and 17,216 general surgery procedures, the Veress needle technique was used in 78% of them. Gynecologists (81%) used the tool more often than general surgeons (48%) who are far more likely to use the open access technique.[6] Creating pneumoperitoneum by using a Veress needle is not always as safe and effective as other techniques (e.g. direct trocar insertion (DTI)).[10-12] However, some other prospective studies point out that there is no significant difference between the technique chosen and incidence of complications by inducing pneumoperitoneum using a Veress needle or the Hasson technique.[13,14] Between the complications associated to this instrument it can be found: Injury to hollow viscous, bleeding, vascular injury, failure to achieve pneumoperitoneum, PR pneumoperitoneum (ie, preperitoneal insufflations, also referred to as surgical emphysema), biloma due to liver puncture.[15] Alam F, outlines a method for safe insertion of Veress needle for the induction of pneumoperitoneum.[16]

Design and mechanism

Double-layered construction

It consists of a sharp, beveled outer needle used to pierce tough abdominal wall tissues, and a blunt, hollow inner stylet.

Safety feature

The blunt inner stylet is spring-loaded. As the needle passes through resistant tissue (like muscle and fascia), the stylet retracts. Once it enters the lower-pressure peritoneal cavity, the stylet immediately springs forward to shield the sharp tip from puncturing internal organs (like the bowel).

Gas insufflation

A valve on the top regulates gas flow, allowing CO_2 to enter the abdomen through a side-hole in the blunt stylet.

Insertion and use

Placement

It is typically inserted via a small incision, often in the umbilical area, using a "dart" throwing motion. Confirmation: Surgeons typically verify correct placement by observing a drop in pressure, listening for clicks, or performing tests (like the hanging drop test) to ensure it is not in a blood vessel.

Sizes

Needles come in lengths ranging from 80 mm, for pediatric or very thin patients up to 120 mm for bariatric or obese patients.

Associated risks

While considered the traditional standard for "closed" laparoscopic access, it carries inherent risks. Because the initial insertion is done blindly, complications though rare can include vascular injury, bowel perforation, or gas embolism.

CASE REPORT

This incident happened in a laparoscopic sterilization camp in Bhongir, more than four decades ago**.** In the Bhongir camp, simultaneously four operating tables, four surgeons with sisters to assist, and continuously sterilize the scopes and Veress needles, wash and immerse them in Cidex solution for 10-15 minutes, as per the protocol. Those who have attended such camps would understand

the modus operandi clearly. Daily about 250 women would undergo single puncture laparoscopic sterilization procedures. Prior to surgery the women would be given sedation, fentanyl, phenergan, (promethazine hydrochloride) intramuscular injection. Local xylocaine was infiltrated at the umbilical site.

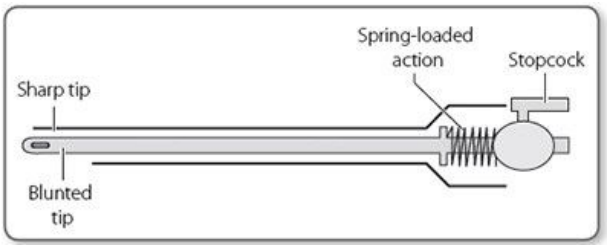

Figure 1: Parts of a Veress needle.

The woman would be placed in the lithotomy position, Trendelenberg position with a 15^0 tilt to the table. The abdomen would be painted and properly draped. Vagina cleaned and a uterine elevator placed. All the surgical notes with entry of surgeon, anesthetist and scrub nurse would be properly documented in each case sheet. Any specific points would be recorded. Some women would be kept under observation if necessary. Initially used air for creating pneumoperitoneum, using a sigmoidoscope bulb, in the camp settings. Later used CO_2 for pneumoperitoneum.

Figure 2: Reusable trocar and cannula.

The camp was in full swing, the sister called and informed that one Veress needle does not have the outer sheath. Then she was advised to search on the floor, on all the four operating tables, to search in the linen sheets that have been removed for washing, by the patient's side and their dresses in those patients who have been operated in the last half an hour.

Then the sister was told to find out the last two women who were operated on that particular table, just prior to identification of the missing sheath. Then one doctor and the sister were instructed to go to these two women operated on that table and just palpate the abdomen, if they could identify any abnormal bulge or excessive pain, without creating any awareness that we started getting worried.

Figure 3: Abdominal wall lifted with the left hand.

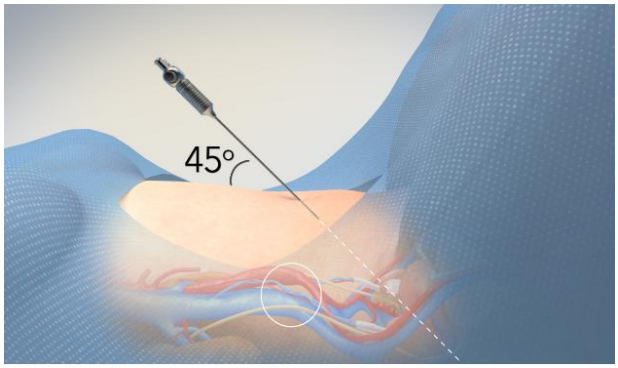

Figure 4: The angle of inclination of the Veress needle.

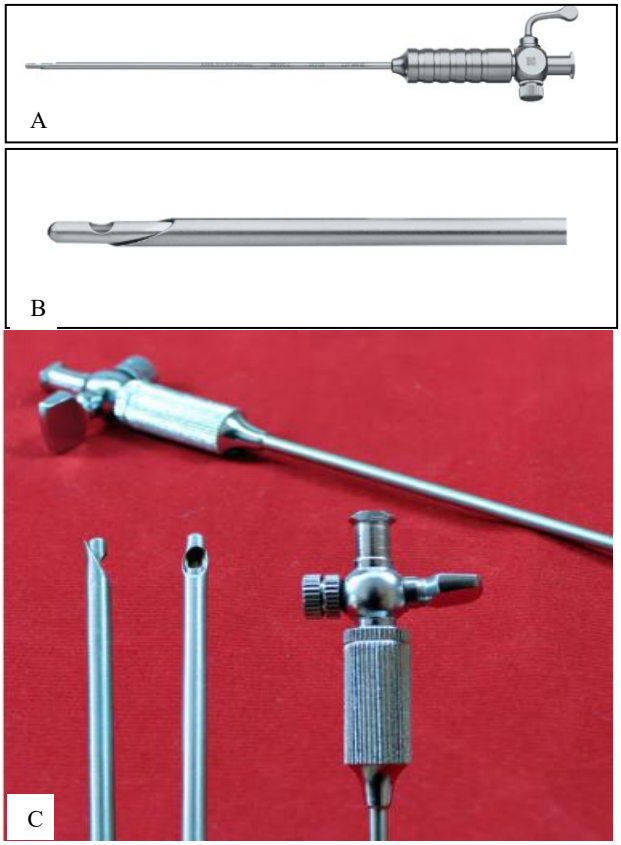

Figure 5 (A-C): The Veress needle, Veress needle, outer sheath shaft, broke from the handle and was intra peritoneal.

The vitals were monitored, BP was stable at 110/70 mmHg, PR was 76/mt., no pallor, there was no increased abdominal pain, both the women were stable and no evidence of any intra peritoneal bleeding. All the women operated were meticulously monitored for any untoward symptoms. As a camp was going on and any untoward incident would lead to commotion. The camp was going on. Everything was checked and verified that it could not be traced. Some used linen that was shifted to the dhobi also were searched, of no avail.

Then a decision was made to have an X-ray of the abdomen, should be done for two women, the most probable candidates to have been operated on that table from where the Veress inner cannulated stylet came for washing and cleaning. The Bhongir Government hospital had an X-ray plant but X-ray films were not available, so since a couple of days they were waiting for them. A private radiology facility in Bhongir was functioning where films were available. We shifted two women for X-Ray abdomen, and the first lady who had the X-ray, the 12 cm. long Veress needle with the sharp beveled edge was in the abdomen.

The X-ray film later brought to MGMH and handed over to the then superintendent, doctors presented a paper in a conference in US as laparoscopic sterisations in camp settings, the first 50,000 cases.

The woman was a para 2, delivered her second child four months ago. She came for a single stitch lap. sterilization surgery. On enquiry we realized that there was difficulty in creating pneumoperitoneum, and the surgeon inserted the needle two, three times to create pneumoperitoneum. All the needles and scopes that were used in camps in Andhra Pradesh were from Storz company. Only few scopes were from Wolf and KLI, they were not used in the Bhongir camp.

In Bhongir government hospital we got the theatre sterilized, the anesthetist with Boyles apparatus and the surgeon had come in the ambulance from Nalgonda. We could have performed the laparotomy, but thought it better to have a surgeon in case of any eventuality. We were also apprehensive to shift her in an ambulance to Hyderabad, with the needle with beveled edge in her abdomen. The Veress was identified in the abdomen by 3:30 pm, and a laparotomy was performed at 8:30 pm. We wanted a senior surgeon and a senior anesthetist to be available and we had to send an ambulance from Bhongir to Nalgonda to pick up the doctors and bring them to Bhongir which was the cause of the delay in laparotomy. Bhongir to Nalgonda, the distance is 70 km., to and fro journey, needed three hours by four-wheeler.

Counseling of the relatives was done, consent for laparotomy taken, arrangement for blood was done. From the time the Veress needle was identified, the patient was advised not to move and get up from bed, a bed pan was used to empty the bladder, she was kept NBM. A nurse was stationed by her side. The needle was covered by omentum and near the left paracolic gutter below the splenic flexure. The needle and part of the omentum covering it were excised. The patient made good postoperative recovery. Antibiotic coverage was given prior to laparotomy.

As the camp was going on we did not let it be known, except for few people. Certain questions crop up like, can we shift a patient from Government hospital for an X-Ray to an outside facility, who will pay the money, you need to be assertive and see that it is done, the team leader has the powers and we will pay the outside facility.

DISCUSSION

Number of insertions attempts of Veress needle are reported to be related to the number of complications. Studies have reported placing the Veress needle into the peritoneal cavity on the first attempt at frequencies of 85.5-86.9%; two attempts required in 8.5-11.6%, three attempts in 2.6-3.0% and more than three attempts in 0.3-1.6%.[17]

Complication rates associated are: one attempt 0.8-16.3%, two attempts 16.31-37.5%, three attempts 44.4-64% and more than three attempts 84.6-100%. The complications associated were extraperitoneal insufflation, omental and bowel injuries and failed laparoscopy.[17]

Direct trocar entry

Dingfelder in 1978 was the first to advocate this technique in which where the abdomen is entered with a trocar without prior Veress needle entry and pneumoinsufflation.[18] The advantages of this method are the avoidance of complications related to the use.

Veress needle

Failed pneumoperitoneum, preperitoneal insufflation, intestinal insufflation and CO_2 embolism. The surgeon must have adequate training and experience in laparoscopic surgery before intending to perform any procedure independently. He should be familiar with the equipment and instruments he intends to use.

There are extremely rare reports of a Veress needle physically breaking off or shattering during laparoscopic entry. While the overwhelming majority of documented "Veress needle entry complications" involve inadvertent punctures of the bowel, major blood vessels, or gas embolisms, structural failure such as the sharp tip shearing off and becoming a retained foreign body in the abdomen can occur. Instrument breakage during entry is uncommon, but typically stems from:

Material fatigue

Repeatedly autoclaved and reused needles can suffer from metal fatigue.

Excessive force

Applying undue physical force when pushing the needle through tough, calcified or scarred fascial layers.

Manufacturing defects

Rarely, a defect in a disposable needle tip can compromise its structural integrity. A retrospective analysis was conducted to determine the frequency of breakage of instruments used in 39,817 operations from 2007 to 2011.[19] Instruments for endoscopy-assisted surgery are broken more frequently intra operatively than are any other type of instruments. Inappropriate use and wearing out were two major possible causes of breakage of instruments.[19]

Lata K et al present the intraoperative loss of the distal tip of three 5 mm laparoscopy instruments (monopolar L-hook, myoma screw and tenaculum) in the abdominal cavity during endoscopy.[20] The distal working tips of laparoscopic instruments have delicate functioning and tend to fall off or break during usage. Intraoperative portable C-arm fluoroscopy identified the missing piece, but tip was not located laparoscopically at the same spot which was demarcated by C-arm.

Hand-guided retrieval of tip of screw was performed by extending incision on lower lateral port.[20] Similar case reports in literature where needles, distal part of suture passer or fascial closure device has been reported lost at laparoscopy.[21-26] Although most complications are related to hemorrhage, bowel or genitourinary injury, the rare case of a retained foreign body from laparoscopic equipment must be considered.

Complications from laparoscopy such as bleeding or structural injury can usually be recognized immediately intra operatively. Other events can present in the perioperative period or shortly thereafter. A 3×2 cm portion of synthetic tubing was found enveloped by omentum. This tubing corresponds to the sleeve thread used in laparoscopy. At this time a partial omentectomy and removal of foreign body was performed, along with an excision of the right pelvic abscess and appendectomy. It is theorized that the device must have been defective and when removing the sleeve thread anchor, probably with the trocar as a whole unit, a portion of it was sheared off and remained intra abdominally. [26]

Complications can manifest several weeks or months later. The safe principles, include direct visualization when removing equipment and a complete count of surgical instrumentation to confirm the integrity of such at the end of each procedure. Minimally invasive surgery is not necessarily safe with respect to breakage of surgical instruments. Radiographic localization of metallic objects has been commonly and successfully employed to locate metallic objects lost in the abdomen.[27]

CONCLUSION

How can a steel instrument that long vanish? An uneasy feeling was persisting till it was identified. Those were the years of intensive Family planning drive. Where human life is involved, we need to exercise caution, and try to explore for answers.

Knowledge of the equipment is absolutely essential. The young specialists are taught "*Knowledge is power, the power to do justice to your patients".* Updates are essential.

ACKNOWLEDGEMENTS

The author wishes to appreciate scrub nurse, who thought it necessary to bring to notice that the outer sheath was missing while washing the Veress needle.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Vilos GA, Ternamian A, Dempster J, Laberge PY. Clinical Practice Gynaecology Committee: Laparoscopic entry: a review of techniques, technologies, and complications. J Obstet Gynaecol Can. 2007;29:433-47.
2. Toro A, Mannino M, Cappello G, Di Stefano A, Di Carlo I. Comparison of two entry methods for laparoscopic port entry: technical point of view. Diagn Ther Endosc. 2012;2012:305428.
3. Krishnakumar S, Tambe P. Entry complications in laparoscopic surgery. J Gynecol Endosc Surg. 2009;1:4-11.
4. Hasson HM. A modified instrument and method for laparoscopy . Am J Obstet Gynecol. 1971;110:886-7.
5. Bonjer HJ, Hazebroek EJ, Kazemier G, Giuffrida MC, Meijer WS, Lange JF. Open versus closed establishment of pneumoperitoneum in laparoscopic surgery. Br J Surg. 1997;84:599-602.
6. Molloy D, Kaloo PD, Cooper M, Nguyen TV. Laparoscopic entry: a literature review and analysis of techniques and complications of primary port entry. Aust N Z J Obstet Gynaecol. 2002;42:246-54.
7. Baskett TF. Eponyms and Names in Obstetrics and Gynaecology. 3rd ed. Cambridge (UK): Cambridge University Press. 2019;436.
8. Palmer R. Instrumentation et technique de la coelioscopie gynécologique. Gynecol Obstet (Paris). 1947;46(4):420-31.
9. Gould JC, Philip A. Principles and techniques of abdominal access and physiology of pneumoperitoneum. In: Ashley SW, editor. Scientific American Surgery. Hamilton (ON): Decker Intellectual Properties. 2011.
10. Theodoropoulou K, Lethaby DR, Bradpiece HA, Lo TL, Parihar A. Direct trocar insertion technique: an

alternative for creation of pneumoperitoneum. JSLS. 2008;12(2):156-8.
11. Yerdel MA, Karayalcin K, Koyuncu A, Akin B, Koksoy C, Turkcapar AG, et al. Direct trocar insertion versus Veress needle insertion in laparoscopic cholecystectomy. Am J Surg. 1999;177(3):247-9.
12. Prieto-Díaz-Chávez E, Medina-Chávez JL, González-Ojeda A, Anaya-Prado R, Trujillo-Hernández B, Vásquez C. Direct trocar insertion without pneumoperitoneum and the Veress needle in laparoscopic cholecystectomy: a comparative study. Acta Chir Belg. 2006;106(5):541-4.
13. Dunne N, Booth MI, Dehn TCB. Establishing pneumoperitoneum: Verres or Hasson? The debate continues. Ann R Coll Surg Engl. 2011;93(1):22-4.
14. Kumar S. Veress needle insertion through left lower intercostal space for creating pneumoperitoneum: Experience with 75 cases. J Minim Access Surg. 2012;8(3):85-9.
15. Segura-Sampedro JJ, Cañete-Gómez J, Reguera-Rosal J, Padillo-Ruiz FJ, Ramírez-Plaza CP. Unnoticed biloma due to liver puncture after Veress needle insertion. Ann Med Surg (Lond). 2015;4(3):238-9.
16. Alam F, Badminton R, Tsvetkov F, Hanif Z, Payne R. Safe insertion of Veress needle for the induction of pneumoperitoneum: a technical note. J Surg Case Rep. 2023;2023(6):rjad311.
17. Richardson RF, Sutton CJG. Complications of first entry: a prospective laparoscopic audit. Gynaecol Endosc. 1999;8:327-34.
18. Dingfelder JR. Direct laparoscope trocar insertion without prior pneumoperitoneum. J Reprod Med. 1978;21(1):45-7.
19. Yasuhara H, Fukatsu K, Komatsu T, Murakoshi S, Saito Y, Uetera Y. Occult risk of broken instruments for endoscopy-assisted surgery. World J Surg. 2014;38(11):3015-22.
20. Lata K, Panwar A, Kriplani I, Kriplani A. Intraoperative Dislodgment and Retrieval of Broken Parts of Laparoscopic Instruments: Arduous Exercise and Lessons Gleaned. J Obstet Gynaecol India. 2021;71(2):201-4.
21. Brahmbhatt S, Makhija A, Brahmbhatt J, Patel YV. Intra-abdominal Breakage of Laparoscopic Needle Holder Tip and Its Retrieval Under Fluoroscopic Guidance. J Obstet Gynaecol India. 2021;71(4):452-5.
22. Devika Rani B, Jarugulla S. Retained Surgical Instrument in Minimally Invasive Surgery. J Obstet Gynaecol India. 2020;70(3):248-9.
23. Hirose R, Nagase Y, Kurahashi H, Tanaka A, Masuda K, Yokoi T. Intraoperative breakage of a laparoscopic needle holder confirmed by postoperative abdominal X-ray: A case report and literature review. J Case Rep Images Obstet Gynecol. 2023;9(1):17-20.
24. Smith BA, Brown RA, Lobe TE. The lost needle: a laparoscopic dilemma. J Laparoendosc Surg. 1993;3(4):425-6.
25. Katara AN, Bhandarkar DS, Shah RS, Udwadia TE, More M, Chandiramani V. Breakage of fascial closure device during laparoscopic surgery. J Minim Access Surg. 2005;1(2):79-81.
26. Medina M. Late complication of laparoscopic salpingoophorectomy: retained foreign body presenting as an acute abdomen. JSLS. 1997;1:79-81.
27. Clarke MT, Arora A, Villar RN. Hip arthroscopy: complications in 1054 cases. Clin Orthop. 2003;406:84-8.

Cite this article as: Devabhaktuni P. The curious case of the missing Veress needle beveled outer sheath. Int J Reprod Contracept Obstet Gynecol 2026;15:xxx-xx.