The American College of Theriogenologists – First forty years

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Abstract

The past 40 years of the history of the American College of Theriogenologists (ACT) is summarized. The ACT became a recognized veterinary specialty organization in 1971. From 28 charter diplomats, currently, it has grown to 441 diplomates. The growth of the ACT, its contribution to the veterinary profession and society, its future and challenges, and its sister-organizations are described under appropriate headings. Regardless of the changing times in the profession and society, technology, and challenges, the future for the ACT diplomates is very promising in practice, industry, government, and institutions of professional education because of its committed members and their contributions to the veterinary profession, humanity, and the animal kingdom.

Keywords: Theriogenology, American College of Theriogenologists, Society for Theriogenology, Theriogenology Foundation, Clinical Theriogenology

Introduction

The American College of Theriogenologists became a recognized veterinary specialty organization at the 108th annual meeting of the American Veterinary Medical Association (AVMA) in Detroit, Michigan in July of 1971 and was chartered under the laws of the State of Illinois. The ACT came into existence to fill a long-recognized need to unify, identify, and advance that branch of veterinary medicine concerned with the multitudinous phases of reproduction with which veterinarians are involved. It was organized (http://www.theriogenology.org/) to promote the advancement of knowledge; to encourage excellence in undergraduate, graduate, and postgraduate education; and to increase capacities for research and service in theriogenology.

The name theriogenology (therio = beast or animal + gen/genesis = beginning, birth, reproduction + ology = study of) was coined by Professor Herbert Howe, Department of Classics, University of Wisconsin and has replaced the phrase veterinary obstetrics, gynecology, and andrology (semenology) from the veterinary vocabulary. Dr. David Bartlett (American Breeders Service, DeForest, Wisconsin) was instrumental in accomplishing this process and gave life to this term by his untiring effort. The subject theriogenology has become an integral part of the veterinary curriculum. As theACT celebrates its 40 year anniversary, it is appropriate to reflect on its vibrant life today and consider future issues facing the College under following headings: purpose, progress, and pride.

Purpose

The ACT was established as a certifying agency to develop a mechanism for veterinarians to become specialists in animal reproduction via residency programs (with or without a graduate component) or extensive clinical experience in theriogenology. Other purposes included encouraging research and clinical investigation in theriogenology with publication of findings and developing continuing-education programs for disseminating information and increasing practitioner's knowledge in theriogenology.

Founding fathers

The ACT organizing committee consisted of David Bartlett (American Breeders Service), Clarence Bierschwal (University of Missouri), Lloyd Faulkner (Colorado State University), John Kendrick (University of California), Fayne Oberst (Michigan State University), Stephen Roberts (Cornell University), and Raimunds Zemjanis (University of Minnesota). The 28 charter diplomates included the organizing committee and Drs. Bill Adams, Les Ball, Cliff Barker, Bill Brown, Jim Callahan, Ed Carroll, Bill Cates, Tracy Clark, John Hughes, Don Lamond, Les Larson, Charles Martin, Bill McGee, Douglas

Mitchell, Dave Morrow, Floyd Sager, Bill Wagner, Donald Walker, Bob Wescott, John Williams, and Elmer Woelffer.

Progress

The important milestones are identified in Figure 1.

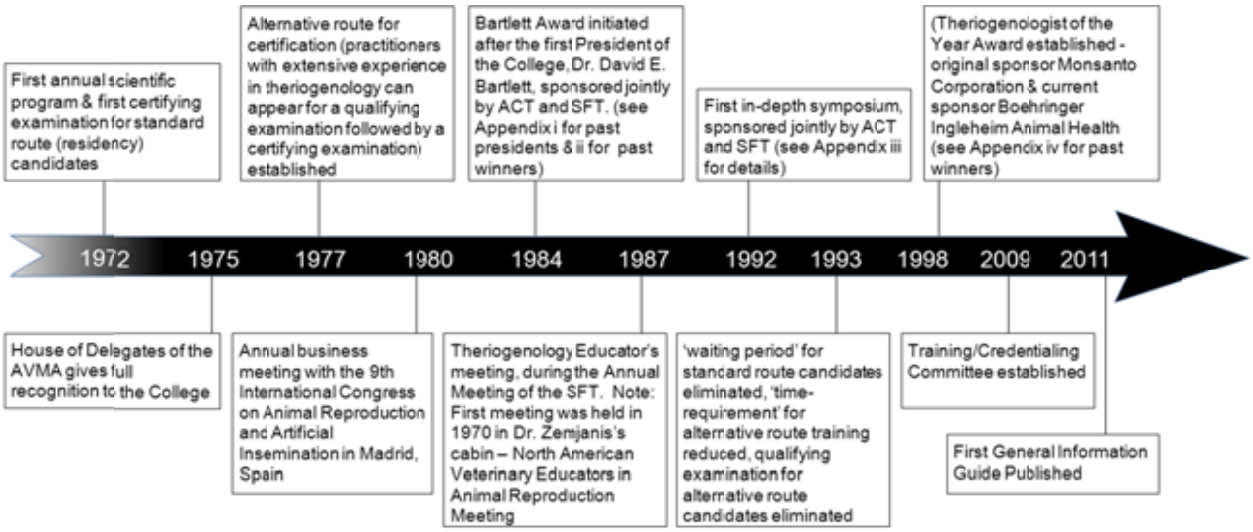

Figure 1: Historical dates are depicted; refer text for details

The ACT has long recognized the importance of providing an opportunity for practitioners with adequate experience in theriogenology to sit the certifying examination along with the formally trained candidates. Therefore, from its beginning the ACT offered an alternative route for practitioners which enables them to prepare for the rigorous certifying examination.

For both routes, to be eligible to appear for the certifying examination of the ACT, a candidate shall have met the following general prerequisites:

1) Graduated from a college or school of veterinary medicine accredited by the AVMA, possess a certificate issued by the Educational Commission for Foreign Veterinary Graduates or are legally qualified to practice veterinary medicine in some state, province, territory or possession of the United States, Canada or other country
2) Meet the education, training, and experience requirements established by the ACT (see below), and
3) Demonstrate unquestionable moral character and impeccable professional behavior.

A large majority of candidates (more than 90%) seeking diplomate status in the ACT have completed a clinical residency program in theriogenology (a minimum two year program) or a combination residency/graduate degree program (typically a minimum of three years).

Through the standard route, a candidate shall have completed at least one year of clinical practice, or its equivalent, subsequent to attainment of a veterinary medical degree. In addition, the candidate shall have completed a minimum of two years in an established/supervised training program, which includes experience in teaching, research, and/or practice of theriogenology. This training program shall include a diplomate of either the ACT or European College of Animal Reproduction (ECAR), or a fellow of the Australian College of Veterinary Scientists (ACVS-AR). Strictly graduate-level programs are also considered to satisfy training requirements through the standard route.

In 1993, a decision was made to eliminate the "waiting period" for all applicants (see Figure 1). Prior to the change, standard route candidates were required to devote "at least five years to the field of Theriogenology" before being considered for candidacy. In the alternative route, applicants with a veterinary medical degree but lacking formal advanced training were required to have a minimum of six

years of practice experience with major emphasis in theriogenology including successful completion of a two year pre-approved study and mentorship program.

The study and mentorship program must be pre-approved and include a diplomate of either ACT or ECAR, or a fellow of the ACVS-AR. An additional change in 1993, replaced the qualifying examination before alternate route candidates to sit the certifying examination with a study and mentorship program (see Figure 1).

The decision to require a study and mentorship program for alternative route applicants was implemented to more effectively direct the preparation of alternative route candidates for the certifying examination and improve their likelihood of success. The mentorship program has also served to create stronger bonds between the College and practitioners seeking certification in the ACT. Individuals interested in the alternative training route must identify a mentor and submit a plan of study for approval. More information is provided at http://www.theriogenology.org/.

Executive board and committees

Information on the leadership and the various committees is provided in Figure 2.

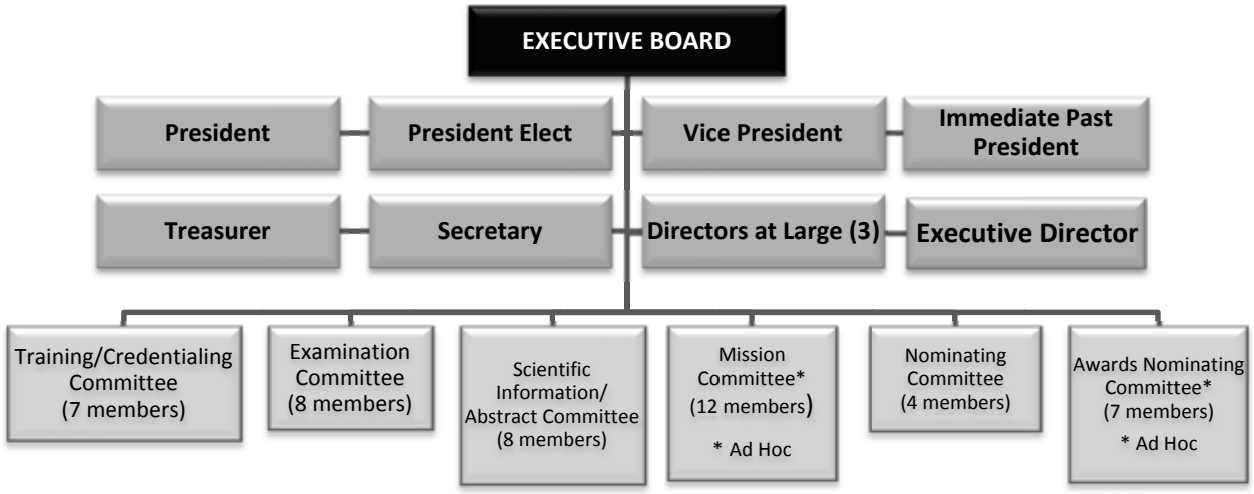

Figure 2. Leadership and committees of ACT

Honorary membership

Individuals making a significant contribution to the field of theriogenology during their career may be recognized as honorary members of the ACT. Honorary members have participated in theriogenology training (providing training opportunities, service on graduate committees, teaching courses routinely taken by theriogenology residents, participation in journal clubs, participation on the ACT listserve, or by significant contribution to the literature), attended and/or presented at the Society for Theriogenology annual meetings, significantly contributed to the advancement of scientific or clinical knowledge directly related to the field of theriogenology, or other unique and significant contribution to the field of theriogenology. Honorary members of the ACT (see Appendix V) were nominated by at least three diplomates, unanimously supported by the executive board and affirmed by a majority vote of the College diplomates. The ACT has truly been enriched by its honorary members' contributions to theriogenology.

Internationalization and diversity

One of the wishes of the founding fathers was to avoid provincialism in the organization.[1] Thankfully, the ACT has been and is being greatly enriched by graduates of veterinary schools from other parts of the world. As indicated in Table 1, ACT diplomates serve in many countries. It is worth noting that the ACT has become a leader in internationalization and diversity as evidenced by its membership as well as its leadership. The ACT has developed a working relationship with ECAR by way of board-member exchange visiting to participate in each other's board meetings. It is expected ACT will continue to develop additional working relationships as other theriogenology programs develop across the globe, particularly on the continents of Australia and Asia.

Table 1. Distribution of ACT diplomates by geography and type of employment

Country	Active	Emeritus	Honorary	Total
United States	281	49	17	347
Canada	43	3	1	47
Argentina	1			1
Australia	14			14
Brazil	1			1
Colombia	1			1
Denmark	1			1
France	1			1
Germany	2			2
Jordan	3			3
Malaysia	1			1
Netherlands	1		1	2
New Zealand	6			6
South Africa	7			7
Sweden		1	1	2
Switzerland	1			1
United Kingdom	2		1	3
Venezuela		1		1
Totals	366	54	21	441

Breakdown By Employment Type

Academia	152	Private practice	124
Government	13	Retired	56
Industry	24	Not noted	58
Other	14		

Sister organizations

Society for Theriogenology

The first official meeting of the group was known, at the time, as the "Rocky Mountain Society for the Study of Breeding Soundness of Bulls." The organization was founded by a small group of veterinarians for the purpose of collecting and disseminating information related to evaluation of bulls for breeding soundness. During the 1956 meeting, the organization's official name was changed to "The Society for the Study of Breeding Soundness of Bulls", as its membership expanded beyond the Rocky Mountain region.

The society was chartered under the laws of Colorado in 1961. Between 1960 and 1962, the society experienced rapid growth as it wrestled with the challenge of training and certifying its members. The original constitution stated members would undergo a training session followed by a subsequent

evaluation of bulls under the supervision of a member of the board of directors. The Society was given a charter under the laws of Colorado in 1961. Regional groups formed first in Texas followed by the Southeast group, the Montana group, the Missouri Valley group and the California group.

In 1963 the board adopted a new constitution with modifications resolving the issue of requirements for members and establishing dues. During the same meeting the name was again changed to "The American Veterinary Society for the Study of Breeding Soundness."

In 1974, the name was changed one final time to the "Society for Theriogenology" (SFT) and its annual conferences began (Appendix VI). The diplomates of the ACT have regularly contributed to these conferences since their inception. The scope of the SFT was broadened to include all species served by veterinary medicine. Currently SFT (http://www.therio.org) membership includes 1881 veterinarians and 732 veterinary students. Student members also belong to their respective student chapters in veterinary schools across the U.S. and Canada. Each student chapter is supervised by theriogenology faculty at the institution (see Appendix VII). Growth of the ACT has been assisted immensely by the SFT and many ACT diplomates are also members of the SFT.

Theriogenology Foundation

The Theriogenology Foundation, formed in 2009 as a collaborative effort of ACT and SFT, is working to secure and allocate resources dedicated to advancing the science and practice of animal reproductive medicine. The Foundation is committed to providing educational opportunities for students, interns, residents, and new faculty through travel grants and sponsorship of guest lecturers. Individual donors can direct their contribution to support research in equine, food/production animal, wildlife/exotic and companion animal reproductive medicine (http://therio.org/displaycommon.cfm?an=1&subarticlenbr=346).

Official journal

In 2009, the journal, *Clinical Theriogenology* (http://st.omnibooksonline.com/index.html) was launched to promote scholarship in the clinical aspect of theriogenology. The purpose of the journal is to publish, in a timely manner, peer-reviewed manuscripts relevant to the clinical practice of theriogenology in livestock, companion animals, and wildlife for veterinary practitioners, academic clinicians, animal scientists, and veterinary students. Until 2005 the proceedings (presentations, abstracts, and posters) of the annual SFT conferences were published by the management office. From 2006 until 2008 they were published in the journal *Theriogenology*. Since 2009 the proceedings are published in this newly created official journal of ACT and SFT. The journal is growing under the editorship of ACT diplomate, Robert Youngquist, the founding editor.

Management

Prior to 1990, the ACT was administered by volunteer diplomates. Since 1990, the ACT has utilized the services of a professional management company including GMO, Inc. (1990-1998), Walker Associates (1998-2003), and Franz Management Services (2003-present). Dr. Charles Franz, a veterinarian and owner of Franz Management Services, currently serves as the Executive Director for ACT and SFT. As Executive Director, Dr. Franz represents both groups in a number of professional organizations including the American Society of Veterinary Medical Association Executives (http://vmaexecs.org/index.cfm) and the American Board of Veterinary Specialties (ABVS) of the AVMA as the ACT's permanent alternate member. Franz Management Services has been instrumental in helping both organizations create greater visibility for theriogenology.

Pride

The ACT continuously strives to maintain a standard of excellence among its members through its certification process. Candidates must possess a broad knowledge of theriogenology in order to achieve diplomate status. Credentialed candidates demonstrate a documentable competency in animal

reproduction and sit the certifying examination. Certification is awarded to those candidates demonstrating a mastery of theriogenology.

Contributions to the profession

Having established a culture of excellence, focusing on the reproductive system, the ACT provides the veterinary profession a unique, multi-species specialty. Through their respective curriculum committees, the vast majority of veterinary medical schools and colleges have established separate and identifiable courses devoted to the study of theriogenology. These actions are in large part, based upon a need in the veterinary medical education for a thorough understanding of reproductive behavior and function. Through their scholarly endeavors, diplomates of the ACT have distinguished themselves in educational, investigational, and clinical programs. These efforts include, but have not been limited to, development of educational courses for undergraduate, professional, and graduate-level curricula; continuing-education opportunities for graduate veterinarians and the general public; publication of manuscripts in critically-reviewed scientific journals on all aspects of basic and applied reproductive research; service on editorial advisory boards of veterinary medical journals; and development and/or maintenance of residency and graduate-training programs which focus on reproductive processes. Many institutions of higher learning have and continue to utilize the talents of diplomates to serve as administrators and academic leaders.

Though a relatively small group, the ACT diplomates are widely involved in international, national, state and regional veterinary conferences. Capacity attendance and consistently high approval ratings from participants at these events are testimony the ACT is meeting a definitive need of the profession. In addition to the annual SFT meeting in which a majority of the speakers are diplomates of the ACT, diplomates are extensively involved with other organizations including species-focused groups (American Association of Equine Practitioners, American Association of Bovine Practitioners, American Association of Swine Practitioners, etc.). A comfortable degree of convergence, interchange of programs and activities between the system-specialty and species-specialty is very important for the profession.[1] The diplomates are frequently called on to lecture and teach laboratories at these meetings, as well as to serve in leadership roles in these professional associations. A Speaker's Bureau is available on the ACT website (http://www.theriogenology.org/) with contact information for diplomates willing to speak on various topics in a variety of species.

In partnership with the SFT, members of the ACT have worked to establish basic standards for evaluating and maintaining reproductive performance of both male and female animals. This is demonstrated by the development and maintenance of current standards and forms for evaluating male animals for breeding soundness. To hasten technology transfer to practicing veterinarians, the ACT and SFT conceptualized, developed and distributed manuals for breeding soundness examination and fact sheets (1988-1992) detailing assorted topics in animal reproduction. Subsequently symposia were developed as a more effective means of disseminating information in greater depth. Copies of all symposia proceedings are annually distributed to the entire membership of the ACT and SFT. New information, which often results from research conducted by diplomats is disseminated to professional (veterinary medical) and graduate students, or clinical residents in formal training programs, and to private practitioners. Diplomates serve the general public and practicing veterinarians through medical/surgical care and diagnostic support for individual animals with reproductive problems, as well as reproductive assessment/management of healthy animals. Diplomates also serve in the federal and state food inspection regulatory bodies and as state veterinarians.

The ACT continually seeks to raise awareness of the college and to encourage veterinary students to aspire to diplomate status after graduation. As part of these goals, ACT established a student outreach fund to help student organizations cover the costs of inviting diplomates to speak at local events. The fund helps facilitate ACT diplomate visits and interaction at veterinary schools. It is hoped these visits will stimulate student interest and enthusiasm for the ACT by broadening students' awareness of the many opportunities open to our diplomates.

Educational forums

Educational forums are conducted at the annual conference with a goal of bringing interested dipolmates together in discussion of ways to improve/strengthen our educational contribution to societal and institutional needs.

Scholarship

Consistent with the rise of theriogenology have been numerous technical and scientific advances in knowledge and new technical products applicable to veterinary practice.[2,3] More than 7000 peer-reviewed publications have been published (Pubmed search) by the members of the ACT. The ACT has excellent rapport with scientists in other areas of study such as animal science, biology, economics, and other fields of science. This collaboration has resulted in the completion of many research projects with scientists in other disciplines. Some diplomates work in non-clinical departments to enable them to fully commit to research. Other ACT diplomates serve as editors of journals and provide assistance to researchers in the developing world in the art of scientific writing. Many theriogenology books have been edited (Appendix VIII) by diplomates over the years with or without chapter contributions from scientists from related areas. Many more diplomates have contributed chapters to other related areas in veterinary medicine.

In the 1980's, 16 comprehensive manuals dealing with different aspects of theriogenology in different species were published. Subsequently, fact-sheets dealing with specific theriogenology topics were created. Since January 1996, a "Theriogenology Question of the Month" has regularly appeared in the journal of the AVMA. As of today 82 contributions have been made by theriogenologists (Appendix IX), most of which originated from theriogenologists and theriogenology residents while in a training program. It has become yet another great source of information for practitioners and veterinary students.

As unique means of preserving scholarship, one ACT diplomate, Dr. Maarten Drost is cataloging digital contributions of visual images in theriogenology in a collection known as, "The Drost Project Visual Guides" (http://drostproject.org/drost_information.html), a resource that is helping many.

Contribution to society

The ACT recognizes the importance of heightening public relations, in order that the public will be more aware of the contributions Theriogenology makes to society. The diplomates of the ACT are uniquely qualified to assist with a host of societal concerns raised by the general public, including the preservation of endangered species, overpopulation of animals and mankind, as well as animal welfare.

The favorability of the specialty of theriogenology by the veterinary profession and public remains high. As consultants, diplomates of the ACT receive scores of telephone calls and referred cases annually from general practitioners. The diplomates of the ACT function in many capacities within society, ranging from teaching and research in both basic and clinical programs, to employment by governmental agencies, industry, or private practice. Many diplomates serve as reproductive consultants to practicing veterinarians or industry. Other diplomates are helping plan for and meet the future needs of society by addressing numerous issues facing our world including 1) food production for an ever-expanding human population (by increasing reproductive efficiency in food-producing animals), 2) the preservation of endangered species (by studying reproductive physiology of numerous species, preservation of gametes, cloning, and the effect of captivity on reproductive performance), 3) population control of certain wildlife, feral, and companion animals (through development of sterilants, contraceptives, and methods to terminate pregnancy), and 4) studying the impact of environmental toxicologic problems on reproductive systems. The diplomates are also addressing the economic viability of farmers, ranchers, and breeders who depend on animal reproduction for their livelihood. Efforts to diagnose treat, and control diseases affecting the reproductive system and the neonate are unending, and require the impact/usefulness of emerging biotechnological advancements on reproductive performance remain a high priority area of study.

Position Statements on a number of issues developed jointly by the ACT and SFT are posted at http://www.theriogenology.org/displaycommon.cfm?an=1&subarticlenbr=53 and these include:

- Position Statement on Mandatory Spay-Neuter
- Basis for Position on Mandatory Spay/Neuter in the Canine and Feline
- Position Statement on the Definition of Theriogenology in Veterinary Practice
- Position Statement on the Use of Ultrasonography Imaging to Determine Reproductive Status
- Position Statement on the Evaluation for the Breeding Soundness of Animals

It is expected that the list will expand based on societal and professional needs.

Assistance to international veterinarians working in theriogenology

The Zemjanis Outreach Fund was established in 1994 to honor the memory of (http://therio.org/displaycommon.cfm?an=1&subarticlenbr=345) Raimunds Zemjanis, a longtime member of the SFT, and a charter diplomate of the ACT. The fund is supported by donations from members and corporate sponsors and is intended for partial support of veterinarians traveling from developing countries to the United States for educational purposes.

Future

The future of the ACT is bright. The ACT's membership reflects a broad cross-section of the profession including private practice, academia, industry, and government. Over the years the ACT membership and leadership have been quite diverse, signifying health and vigor. Twenty one percent of the ACT Diplomates reside and practice outside the USA and graduates of international veterinary schools regularly serve in leadership positions of the ACT. These trends bode well for the global growth of the ACT.

Demonstrating a commitment to quality training for individuals seeking diplomate certification, the ACT recently established a Training and Credentialing Committee (TCC). In addition to reviewing applicants for credentialing, the TCC is charged with developing and maintaining appropriate standards for credentialing and certification.

Just as ACT strives to assure the public and profession through its rigorous and comprehensive certifying examination that its diplomates possess and demonstrate a mastery of theriogenology, ACT will soon provide assurances of continued mastery among its diplomates. To prove this assurance, in the immediate future, ACT will initiate two important tasks based, in part, on recommendations from the Advisory Board on Veterinary Specialties (ABVS) including maintenance of certification and a job-task analysis. Maintenance of certification is scheduled to begin for the college by 2015.

The ACT will continue to expand its educational efforts in order to keep the profession well-informed about theriogenology-related topics. The diplomates of the ACT will continue to organize, contribute, and participate in symposia and annual scientific meetings in conjunction with the SFT. Similarly, members of the ACT will continue to present information in the local, state, national, and international organizations.

The progress of the ACT depends on the ability of its members to provide basic education in theriogenology to undergraduate students while training veterinarians aspiring to attain diplomate status. It is imperative that the ACT continues to contribute to scholarship by encouraging quality post-graduate programs in theriogenology. In this regard, research (scholarly or scientific investigation or inquiry) and graduate education (the knowledge or skill obtained or developed by a learning process) should be major components of residency programs and residents should be expected to generate new knowledge not just the users of the old.[4] A collaborative approach with departments of animal science will immensely help to address the research training needs of residents. Further specialized training in specific areas will enable the ACT members to participate in developing the farm-animal economy of the country. The objectives for training theriogenologists in the farm-animal production have been outlined.[5] In two ways this need can be met; the ACT with support from the SFT can find ways to improve and increase diplomates participation in cattle consultation services[6] and also plan to provide a dairy theriogenology program as a subspecialty of ACT. It has to be clearly noted that this subspecialty should follow after

successful certification in comparative theriogenology. A close working relationship with production medicine programs[7] and when ACT grows into a larger College these goals can be easily accomplished.

Regarding undergraduate training, the legitimate inclusion of comparative theriogenology in the DVM core curriculum and post-graduate training cannot be overemphasized[8,9] and the need is felt more than ever. In this regard, a core Comparative Theriogenology curriculum was created and provided to all AVMA-accredited colleges of veterinary medicine. This document was intended to act as a guide for the curriculum committees and to support the role of diplomates in the veterinary colleges.

In just ten short years, the ACT will reach its 50 year anniversary and the ACT leadership will likely have considered implementing some of the proposals listed in these pages. The future for the ACT diplomates is very promising in practice, industry, government, and institutions of professional education because of its committed members and their contributions to the veterinary profession, humanity, and the animal kingdom.

A final point to ponder

In general, the discipline of theriogenology has not fared well in some teaching institutions. Two common scenarios resulting in declining numbers of theriogenologists positions in academia include; retirement of an ACT diplomate is followed by either replacement with another specialty individual or not replaced at all or replaced by 'part-time' theriogenologists. Second, the educational training that ought to be rightfully provided by a theriogenologist to student clinicians is given by specialists from other disciplines due to lack of a critical mass in theriogenology programs.[10] Considering the scope of benefits provided by ACT diplomates as described in this article, it is imperative that schools and colleges of veterinary medicine find the value in theriogenologists and continue to make them a part of the resources available at academic institutions.

Dedication

The manuscript is dedicated to two renowned theriogenologists, Dr. David Bartlett, founding president of the American College of Theriogenologists for making theriogenology a reality in the veterinary profession and Professor William Bosu for his contribution to comparative theriogenology and for nurturing the author.

Acknowledgments

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Appendix i: Presidents of ACT

1971-1973: David Bartlett
1973-1974: Fayne Oberst
1974-1975: Lloyd Faulkner
1975-1976: William Adams
1976-1977: Barton Gledhill
1977-1978: William Wagner
1978-1979: Clarence Bierschwal
1979-1980: Edward Mather
1980-1981: Richard McFeely
1981-1982: Robert Hudson
1982-1983: Maarten Drost
1983-1984: Willis Parker
1984-1985: Robert Youngquist
1985-1986: Charles Martin
1986-1987: Brad Seguin
1987-1988: Howard Whitmore
1988-1989: Ronnie Elmore
1989-1990: Shirley Johnston
1990-1991: Stanley Dennis
1991-1992: Alfred Caudle
1992-1993: Theodore Lock
1993-1994: Patricia Olson
1994-1995: Chester Rawson
1995-1996: Walter Threlfall
1996-1997: Dwight Wolfe
1997-1998: Michelle LeBlanc
1998-1999: Dickson Varner
1999-2000: Louis Archbald
2000-2001: Carla Carleton
2001-2002: Richard Fayrer-Hosken
2002-2003: Dale Paccamonti
2003-2004: Douglas Freeman
2004-2005: Margo Macpherson
2005-2006: John Steiner
2006-2007: Margaret Root Kustritz
2007-2008: Gary Nie
2008-2009: Ahmed Tibary
2009-2010: Charles Estill
2010-2011: Augustine Peter

Appendix ii: Bartlett Award Winners

1984: David Bartlett
1985: Stephen Roberts
1986: Elmer Woelffer
1987: Raimunds Zemjanis
1988: Lloyd Faulkner
1989: Clarence Bierschwal
1990: Les Ball
1991: Robert Kenney
1992: Victor Shille
1993: Robert Hudson
1994: Donald Walker
1995: William Wagner
1996: Willis Parker
1997: A. C. Asbury
1998: Borje Gusstafsson
1999: Charles Martin
2000: Shirley Johnston
2001: Robert Youngquist
2002: Patricia Olson
2003: Robert Hillman
2004: Maarten Drost
2005: Louis Archbald
2006: Lawrence Rice
2007: Irwin Liu
2008: Harold Whitmore
2009: Bradley Seguin
2010: Robert Carson
2011: Dwight Wolfe

Appendix iii: Theriogenology Symposia

1992: Equine Reproduction Symposium
1993: Canine Theriogenology Short Course
1994: Small Ruminant Short Course
1995: Bovine Theriogenology Short Course
1996: Mare Reproduction Symposium
Swine Reproduction Symposium
1997: The Canine Male Reproduction Symposium
Reproductive Pathology Symposium
1998: Stallion Reproduction Symposium
Canine Female Reproduction Symposium
1999: Cryobiology Symposium
Canine Reproduction Symposium
2000: The Periparturient Mare & Neonate Symposium
2001: Canine Symposium (*Comment: The annual conference was to start September 12, 2001. The ACT/SFT annual conference was cancelled, but the proceedings were distributed later)*
2002: Technician/Breeder's Symposium (small animal)
Toxicology Symposium
2003: Small Ruminant Symposium (sheep, goats, camelids)
Bovine Symposium (dairy and beef)
Feline Symposium (primarily female)
2004: Small Animal Neonatology Symposium
Equine Neonatology Wet Laboratory

2005: Pharmacology Symposium
Small Animal Symposium
Equine Symposium and Wet Laboratory
2006: Bovine Symposium (dairy)
Small Animal Symposium (contraception methods) and Wet Laboratory (early spay/neuter techniques)
2007: No symposia
2008: Bovine Symposium (beef)
Small Animal Symposium and Wet Laboratory (ultrasonography)
2009: Small Animal Symposium
Small Animal Breeders Session
2010: Reproductive Pathology Symposium
Small Animal Breeders Session
Small Animal Laparoscopic Surgery Wet Laboratory
2011: Small Ruminant Symposium
Canine Breeders Symposium
Dairy Symposium

Appendix iv: Theriogenologist of the Year Award Winners

1999: Richard Fayrer-Hosken
2000: Michelle LeBlanc
2001: Robert Youngquist
2002: Dickson Varner
2003: Katrin Hinrichs
2004: Donald Schlafer
2005: Dirk Vanderwall
2006: Terry Blanchard
2008: Ina Dobrinski
2009: John Kastelic
2010: Margaret Root Kustritz
2011: Ahmed Tibary

Appendix v: Honorary Members of ACT

Harold Amstutz
Fuller Bazer
William Bosu
Patrick Concannon
C. de Bois
Stig Einarsson
Melvyn Fahning
Borje Gustafsson
John Herrick
Cleon Kimberling
Clyde Kirkbride
Duane Kraemer
Reuben Mapletoft
Sue McDonnell
Richard Saacke
John Simons
John Spitzer
Edward Squires
William Thatcher
Walter Zent

Appendix vi: SFT Annual Meetings

1974	Columbia, Missouri
1975	Cheyenne, Wyoming
1976	Lexington, Kentucky
1977	St. Paul, Minnesota
1978	Oklahoma City, Oklahoma
1979	Mobile, Alabama (hurricane cancelled)
1980	Omaha, Nebraska
1981	Spokane, Washington
1982	Milwaukee, Wisconsin
1983	Nashville, Tennessee
1984	Denver, Colorado
1985	Sacramento, California
1986	Rochester, New York
1987	Austin, Texas
1988	Gainesville, Florida
1989	Coeur d' Alene, Idaho
1990	Toronto, Ontario, Canada

1991	San Diego, California
1992	San Antonio, Texas
1993	Jacksonville, Florida
1994	Kansas City, Missouri
1995	San Antonio, Texas
1996	Kansas City, Missouri
1997	Montreal, Quebec, Canada
1998	Baltimore, Maryland
1999	Nashville, Tennessee
2000	San Antonio, Texas
2001	Vancouver, British Columbia (cancelled)
2002	Colorado Springs, Colorado
2003	Columbus, Ohio
2004	Lexington, Kentucky
2005	Charleston, South Carolina
2006	St. Paul, Minnesota
2007	Monterey, California
2008	St. Louis, Missouri
2009	Albuquerque, New Mexico
2010	Seattle, Washington
2011	Milwaukee, Wisconsin

Appendix vii: Faculty Supervisors for SFT Student Chapters

Aime Johnson - Alabama
Stuart Meyers and Wendell Cole - California
Patrick Meyers - Colorado
Audrey Kelleman - Florida
Richard Fayrer-Hosken - Georgia
Cliff Shipley - Illinois
Augustine Peter - Indiana
Bruce Christensen - Iowa
Robert Larson - Kansas
Bruce Eilts - Louisiana
Sandra Ayres and Carlos Gradil - Massachusetts
Carla Carleton - Michigan
Peggy Root Kustritz - Minnesota
Kevin Walters - Mississippi
Dietrich Volkmann - Missouri
Sylvia Bedford-Guaus - New York
Carlos Pinto - Ohio
Lionel Dawson - Oklahoma
Tracey Chenier - Ontario
Michelle Kutzler- Oregon
Patricia Sertich - Pennsylvania
Rob Lofstedt - Prince Edward Island
Refean LeFebvre - Quebec
Claire Card - Saskatchewan
John Dascanio - St. Kitts
Tulio Prado - Tennessee
Charles Love - Texas
Rick Bridges - Tuskegee
Beverly Purswell - Virginia
Ahmed Tibary - Washington
Harry Momont – Wisconsin

Appendix viii: Partial List of Recent Theriogenology Texts

Reproductive Biology of the Mare, 1st edition, Ginther OJ, 1979.
Current Therapy in Theriogenology, 1st edition, Morrow DA, 1980.
Veterinary Obstetrics and Genital Diseases (Theriogenology), 3rd edition, Roberts SJ, 1986.
Current Therapy in Theriogenology 2nd edition, Morrow DA, 1986.
Reproductive Biology of the Mare, 2nd edition, Ginther OJ, 1992.
Equine Reproduction, 1st edition McKinnon AO, Voss JL, 1992.
Ultrasonic Imaging and Animal Reproduction: Fundamentals – Book 1, Ginther OJ, 1995.
Ultrasonic Imaging and Animal Reproduction: Horses – Book 2, Ginther OJ, 1995.
Allen's Fertility and Obstetrics in the Horse, 2nd edition, England GCW, 1996.
Current Therapy in Large Animal Theriogenology, 1st edition, Youngquist RS, 1997.
Manual of Equine Reproduction, 1st edition, Blanchard TL, Varner DD, Schumacher J, 1997.
Ultrasonic Imaging and Animal Reproduction: Cattle - Book 3, Ginther OJ, 1998
Large Animal Urogenital Surgery, Wolfe DF, Moll HD, 1999.
Equine Breeding Management and Artificial Insemination, 1st edition, Samper JC, McKinnon AO, Pycock J, 1999.
Canine and Feline Theriogenology, Johnston SD, Root Kustritz MV, Olson PNS, 2001.

Arthur's Veterinary Reproduction & Obstetrics, 8th edition, Noakes DE, Parkinson TJ, England GCW, 2001.
Sheep & Goat Medicine, Pugh DG, 2002.
Manual of Equine Reproduction. 2nd edition Blanchard TL, Varner DD, Schumacher J, Love CC, Brinsko SP, Rigby SL, 2002.
Small Animal Theriogenology (Practical Veterinarian), Root Kustritz MV, 2003.
Allen's Fertility and Obstetrics in the Horse, 3rd edition, England GCW, 2005.
The Dog Breeder's Guide to Successful Breeding and Health Management, Root Kustritz MV, 2005.
Current Therapy in Equine Reproduction, Samper JC, McKinnon AO, Pycock J, 2006.
Current Therapy in Large Animal Theriogenology, 2nd edition Youngquist RS, Threlfall WR 2007.
Ultrasonic Imaging and Animal Reproduction: Color-Doppler Ultrasongraphy - Book 4, Ginther OJ, 2007.
Equine Breeding Management and Artificial Insemination, 2nd edition Samper JC, 2008.
Clinical Canine and Feline Reproduction, an Evidence-based Text, Root Kustritz MV, 2010.
Manual of Equine Reproduction, 3rd edition, Brinsko SP, Blanchard TL, Varner DD, Schumacher J Love CC, Hinrichs K, Hartman D, 2010.
Equine Reproduction, 2nd edition, McKinnon AO, Squires EL, Vaala WE, Varner DD, 2011.
Blackwell's Five-Minute Veterinary Consult Clinical Companion: Equine Theriogenology, Carleton CL, 2011.

Appendix xi: Theriogenology Question of the Month

Globosus amorphus. Pearson LK, Rodriguez JS, Tibary A. J Am Vet Med Assoc 2011;15;238:1261-1263.
Trauma-induced paraphimosis. Beltaire KA, Tanco VM, Bedford-Guaus SJ. J Am Vet Med Assoc 2011;238:161-164.
Pregnancy, pyometra, mucometra, hydrometra, hemorrhage, and urometra in Quarter Horse-Paint mare. Tranquillo GG, Kelleman AA, Sertich PL. J Am Vet Med Assoc 2009;235:1161-1164.
Scoliosis. Occhipinti LL, Carleton CL, Holcombe SJ, Chaney KP, Agnew DW. J Am Vet Med Assoc 2009;234:751-753.
Neonatal ingestion. Holmes SP, Memon MA, Fite CL. J Am Vet Med Assoc 2009;234:205-207.
Unilateral anorchidism. Burns JG, Petersen NK. J Am Vet Med Assoc 2008;233:1553-1554.
Follicular cysts. Schwarze RA, Threlfall WR. J Am Vet Med Assoc 2008;233:235-237.
Endometrial polyp. Estrada A, Ferrer MS, Brounts SH, Milligan MA, Lillich JD, Debey B. J Am Vet Med Assoc 2008;232:1473-1475.
Cause of postestral vulvar discharge. Kustritz MV. J Am Vet Med Assoc 2008;232:841-843.
Fetal hydrocephalus. Hodder AD, Ball BA. J Am Vet Med Assoc. 2008;232:211-213.
Sertoli cell tumor. Luby CD, Middleton JR, Youngquist RS, Kim DY, Evans AT. J Am Vet Med Assoc 2007;231:1503-1505.
The infected bitch should be euthanized. The other dogs in the kennel should be quarantined. Marley MS, Rynders PE. J Am Vet Med Assoc 2007;231:867-869.
Bilateral testicular neoplasia. Roberson JR, Andrews GA. J Am Vet Med Assoc 2007;231:531-534.
Remnants of paramesonephric ducts. Kutzler MA, Hofmaster IL. J Am Vet Med Assoc 2007;231:213-215.
Abscess in the left hemiscrotum, septic urethritis, and inflammation of the right vas deferens. Chenier TS, Estrada AT, Koenig JB. J Am Vet Med Assoc 2007;230:1469-1472.
Bilateral testicular neoplasia. Roberson JR, Andrews GA. J Am Vet Med Assoc 2007;230:827-829.
Neoplasia of the os penis. Root Kustritz MV, Fick JL; J Am Vet Med Assoc 2007;230:197-198.
Hypovolemic shock. Scoggin CF, McCue PM. J Am Vet Med Assoc 2006;229:1571-1575.
Unilateral abdominal cryptorchidism. Zacharias JR, Baird AN, Hawkins JF. J Am Vet Med Assoc 2006;229:937-939.
Behavior problems in a stallion caused by a nephrolith. Dallmeyer MD, Turner RM, McDonnell SM, Sertich PL, Dolente BA, Parente EJ, Diaz OM; J Am Vet Med Assoc 2006 ;229:511-513.
Large ossified remnant of the yolk sac. Harbo JM, Mausling RD, Schlafer DH, Vanderwall DK. J Am Vet Med Assoc. 2006;229:215-217.
Bleeding varicose veins. Christensen BW, Troedsson MH, Roberts JF, Pozor MA, Macpherson ML, Eichelberger AC. J Am Vet Med Assoc 2006;228:1507-1510.
Sexual immaturity in a prepubertal dog. Corrada Y, Hermo G, Gobello C.J Am Vet Med Assoc 2006 ;228:855-856.
What are the 3 management options for a mare with twin fetuses at this stage of gestation? Gray GA, Dascanio JJ, Kolster KA. J Am Vet Med Assoc 2006;228:207-209.
Cystic remnants of the mesonephric (wolffian) ducts (ie, Gartner cyst). Lefebvre RC, Bélanger AM. J Am Vet Med Assoc 2005;227:1565-1567.
Hypospadias. Hardy RM, Kustritz MV. J Am Vet Med Assoc 2005;227:887-888.
Urospermia. Dascanio JJ, Witonsky SG. J Am Vet Med Assoc. 2005;227:225-227.
Seminoma, spermatocele, sustentacular cell tumor.Threlfall WR, Robertson JT, Munsterman AS, Oglesbee MJ, Hubbell JA. J Am Vet Med Assoc. 2005;226:1649-1650.
Endometrial cups. Willis LA, Riddle WT. J Am Vet Med Assoc 2005;226:877-879.
Persistence of an intact hymen (imperforate hymen). Raggio I, Lefebvre R, Vaillancourt D. J Am Vet Med Assoc 2005;226:205-207.
Acute peritonitis secondary to intra-abdominal semen deposition. Slater LA, Davidson AP, Dahlinger J. J Am Vet Med Assoc 2004;225:1535-1537.
How would you confirm a diagnosis of mycotic infection in an aborted fetus? Allison N. J Am Vet Med Assoc 2004;225:849-851.

Theriogenology question of the month. Gobello C, Baschar H, Arias D, Tortora M, Giordano A. J Am Vet Med Assoc 2004;225:207-208.
Lymphosarcoma infiltrating the uterus, cervix, and vagina. Aljarrah AH, Gill MS, Sod GA. J Am Vet Med Assoc 2004;224:1591-1593.
Acute metritis secondary to retained fetal membranes and a retained nonviable fetus. Grundy SA, Davidson AP. J Am Vet Med Assoc 2004;224:844-847.
What is the importance of the fetal bronchopneumonia? Strelow L. J Am Vet Med Assoc 2003;223:1423-1425.
Leiomyosarcoma. Hinojosa AM, Holyoak GR, Moll D, Ritchey JW. J Am Vet Med Assoc 2003;223:786-788.
In utero infection of the doe by CVV. Edwards JF, Angulo AB, Pannill EC. J Am Vet Med Assoc 2003;222:1361-1362
Inguinal hernia or hydrocele. Bentley VA, Rashmir-Raven A. J Am Vet Med Assoc 2002;221:1409-1411.
Treatment options for erosive seminal vesiculitis caused by Acinetobacter calcoaceticus. Blanchard TL, Woods JA, Brinsko SP, Varner DD, Boothe DM. J Am Vet Med Assoc 2002;221:793-795.
Measurement of serum progresterone concentrations during diestrus. progresterone concentrations during diestrus. Pacchiana PD, Kustritz MV. J Am Vet Med Assoc 2002;220:1465-1467.
Mineralization of the puppies was suggestive that the bitch would whelp in approximately 11 days. Root Kustritz MV. J Am Vet Med Assoc 2002;220:747-748.
Histologic examination of tissue sections of the mass. Edens MS, Heath AM. J Am Vet Med Assoc 2001;219:1683-1685.
Torsion of the spermatic cord. Pinto CR, Paccamonti DL, Partington B, McFadden K. J Am Vet Med Assoc 2001;219:1343-1345.
Functional ovarian remnant containing estrogen-secreting follicles or ovarian remnant containing an estrogen-secreting neoplasm. Kustritz MV, Rudolph KD. J Am Vet Med Assoc 2001;219:1065-1066.
X-chromosome monosomy (XO syndrome). Kutzler MA. J Am Vet Med Assoc 2001;219:751-752.
Laparotomy to assist replacement of the uterus. Garcia-Seco E, Gill MS, Paccamonti DL.J Am Vet Med Assoc 2001;219:443-444.
Differential diagnosis of ovarian tumor, ovarian hematoma and ovarian abscess. Peavey CL, Trostle SS, Bosu WT, Cooley AJ. J Am Vet Med Assoc 2001;218:861-863.
Endometrial cups. Kutzler MA. J Am Vet Med Assoc 2001;218:205-206.
Azoospermia attributable to bilateral epididymal hypoplasia. Blanchard TL, Woods JA, Brinsko SP. J Am Vet Med Assoc 2000;217:825-826.
An ectopic fetus. Nack RA. J Am Vet Med Assoc 2000;217:182-184.
Bacterial placentitis attributable to a gram-positive filamentous branching bacillus organism. Wolfsdorf KE, Williams NM, Donahue JM. J Am Vet Med Assoc 2000;216:1915-1916.
Transmissible venereal tumor (TVT). Hasler AH, Weber WT. J Am Vet Med Assoc 2000;216:1557-1559. Erratum in: J Am Vet Med Assoc 2000;217:42.
Pyometra, hydrometra, or mucometra. von Reitzenstein M, Archbald LF, Newell SM. J Am Vet Med Assoc 2000;216:1221-1223.
Specific aversion to handling for semen collection and to personal approaching the genital area. Bedford SJ, McDonnell SM. J Am Vet Med Assoc 2000;216:491-493.
Agarose gel immunodiffusion (AGID) serologic testing for brucellosis. Kustritz MV. J Am Vet Med Assoc 2000;216:181-182.
Cryptorchid testis. Bodri MS. J Am Vet Med Assoc 2000;217:1465-1466.
Scrotal enlargement caused by lymphosarcoma associated with bovine leukemia virus. McCain D, Estill CT. J Am Vet Med Assoc 1999;215:1777-1779.
Septic orchitis-periorchitis and epididymitis. Kasaback CM, Rashmir-Raven AM, Black SS. J Am Vet Med Assoc 1999;215:787-789.
Persistent estrus caused by functional granulosa cell tumor of the left ovary. Purswell BJ, Parker NA, Bailey TL, Dascanio JJ, Sponenberg DP. J Am Vet Med Assoc 1999;215:193-195.
Priapism or paraphimosis. Kustritz MV, Olson PN. J Am Vet Med Assoc 1999;214:1483-1484.
Malignant teratoma of the ovary. Trasti SL, Schlafer DH. J Am Vet Med Assoc 1999;214:785-786.
The goat is pseudopregnant (hydrometra). Waldow D. J Am Vet Med Assoc 1999;214:195-196.
Toxicosis associated with fescue grass infected with the endophyte Neotyphodium coenophialum (formerly Acremonium coenophialum). Mirza MH, Costa LR, Paccamonti D, Seahorn TL. J Am Vet Med Assoc 1998;213:1405-1406.
Benign prostatic hypertrophy (BPH), prostatitis, and prostatic neoplasia. Root Kustritz M, Merkel L. J Am Vet Med Assoc 1998;213:807-809.
Torsion of the spermatic cord of the right testis. Pinto CR, Eilts BE, Paccamonti DL, Burba DJ.J Am Vet Med Assoc 1998;213:205-206.
Azoospermia associated with 79,XXY chromosome complement (canine Klinefelter's syndrome). Nie GJ, Johnston SD, Hayden DW, Buoen LC, Stephens M. J Am Vet Med Assoc 1998;212:1545-1547.
Confirmation of fetal viability via ultrasonography. Estill CT. J Am Vet Med Assoc 1998;212:817-818.
Conservative medical management, using cold-water hydrotherapy. Sedrish S, Seahorn T. J Am Vet Med Assoc 1998;212:197-198.
Rupture of the prepubic tendon with additional tearing of the abdominal tunic. Mirza MH, Paccamonti D, Martin GS, Ramirez S, Pinto C.J Am Vet Med Assoc 1997;211:1237-1238.

Imperforate hymen. Buote PL, Ragle CA, Memon MA. J Am Vet Med Assoc 1997;211:703-704.
Induction of parturition. Hawkins JF, Sertich P, Dallap BL, Pozor MA. J Am Vet Med Assoc 1997;211:163-164.
Endometrial polyp in a beagle. Schlafer DH, Yeager AE, Concannon PW. J Am Vet Med Assoc 1997;210:759-761.
Excessive hemorrhaging from ovarian hematomas on both ovaries. Sedrish SA, Johnson PJ. J Am Vet Med Assoc 1997;210:179-180.
Scrotal hematocele. Blanchard TL, Varner DD, Brinsko SP. J Am Vet Med Assoc 1996;209:2013-2014.
Cryptorchidism. Burba DJ, Sedrish SA, Paccamonti DL. J Am Vet Med Assoc 1996;209:1705-1706.
Transrectal palpation used to diagnose uterine torsion in a horse. Perkins NR, Hardy J, Frazer GS, Threlfall WR. J Am Vet Med Assoc 1996;209:1395-1396.
Unilateral scrotal hydrocele. Pinto C, Paccamonti D, Eilts B, Angel KL. J Am Vet Med Assoc 1996;209:1073-1074.
Histologic examination of ovarian tissue to confirm the diagnosis of a granulosa cell tumor. Sedrish SA, Valdes-Vazquez MA, Oliver J. J Am Vet Med Assoc 1996;209:731-732.
Vaginal constriction, probably a congenital malformation. Archbald LF, Wolfsdorf K. J Am Vet Med Assoc 1996;208:1651-1652.
Uterine rupture. Waldow D. J Am Vet Med Assoc 1996;208:831-832.
Placental insufficiency, probably the result of twin fetuses. Wolfsdorf K. J Am Vet Med Assoc 1996;208:201-202.