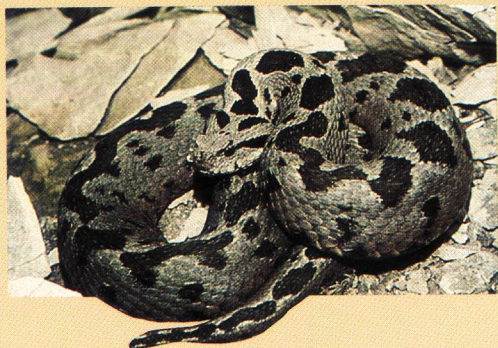


Poisonous

DST-1810S-167-86



Snakes

of EUROPE



Defense
Intelligence
Agency



This is a Department of Defense Intelligence Document, prepared under sponsorship of the Armed Forces Medical Intelligence Center. It has been approved by the Deputy Directorate for Scientific and Technical Intelligence of the Defense Intelligence Agency.

DST-1810S-167-86

Date of Publication

September 1986

Information Cutoff

August 1986





ACKNOWLEDGEMENT

Poisonous Snakes of Europe was prepared by the 424th MID (Strategic), a U.S. Army Reserve Unit affiliated with the Armed Forces Medical Intelligence Center, Ft. Detrick, Frederick, MD 21701-5004. Comments, recommendations, and suggested changes on any material in this book are welcomed and should be sent to the 424th MID(S) at the following address:

Commander
424th MID(S)
7402 W. Roosevelt Road
Forest Park, IL 60130-2587 USA

Photo Credits

Mr. David G. Barker
c/o Dallas Zoo Reptile House
Dallas, TX 75203 USA

MSG LeRoy Newburn
424th MID(S)

Mr. Richard Schneider
Dr. Reinhard Str. 11
8483 Vohenstrauss
Federal Republic of Germany

Mr. Eric Sochurek
1030 Vienna
621 E. Clarendon Drive
Hetzgasse 42/10
Austria

Mr. John H. Tashjian
P.O. Box 522
San Marcos, CA 92069 USA

Manuscript Review

Mr. John D. Groves
Curator of Reptiles
The Zoological Society
of Philadelphia
Philadelphia, PA 19104

Werner Schreiber, M.D.
Internal Medicine Service
U.S. Army MEDDAC
Nuernberg FRD

Mr. Josef Laszlo
Curator of Reptiles
San Antonio Zoological
Gardens & Aquarium
San Antonio, TX 78212

Mr. John H. Tashjian
P.O. Box 522
San Marcos, CA 92069 USA

Table of Contents

ACKNOWLEDGEMENT	.....
SECTION I INTRODUCTION	.....
Measurement Abbreviations Used in this Study	.....
Venomous Snakes in Europe	.....
SECTION II SNAKEBITE	.....
Medical Threat	.....
Types of Venom	.....
Immediate Field Treatment	.....
Identify the Snake	.....
Arrange for Evacuation	.....
Keep the Victim Calm	.....
Reduce the Spread of Venom	.....
Inspect the Site of the Bite	.....
Treat for Shock	.....
Symptoms of Snakebite Best Left Untreated	.....
Ineffective or Potentially Dangerous Actions	.....
Incisions	.....
Deep cooling or tight tourniquets	.....
Medicines	.....
Unlikely Events	.....
Prevention of Snakebite	.....
SECTION III SPECIES	.....
<i>Vipera ammodytes</i>	.....
Risk Category	.....
Names	.....
Subspecies	.....
Identification	.....
Distribution/Habitat	.....
Behavior	.....
Threat	.....
Clinical Symptoms	.....

Vipera lebetina
 Risk Category
 Names
 Subspecies
 Identification
 Distribution/Habitat
 Behavior
 Threat
 Clinical Symptoms

Vipera xanthina
 Risk Category
 Names
 Identification
 Distribution/Habitat
 Behavior
 Threat
 Clinical Symptoms

Vipera aspis
 Risk Category
 Names
 Subspecies
 Identification
 Distribution/Habitat
 Threat
 Clinical Symptoms

Vipera berus
 Risk Category
 Names
 Subspecies
 Identification
 Distribution/Habitat
 Behavior
 Threat
 Clinical Symptoms

<i>Vipera kaznakovi</i>	
Risk Category	
Names	
Subspecies	
Identification	
Distribution/Habitat	
Behavior	
Threat	
Clinical Symptoms	
<i>Vipera latasti</i>	
Risk Category	
Names	
Subspecies	
Identification	
Distribution/Habitat	
Behavior	
Threat	
Clinical Symptoms	
<i>Vipera ursinii</i>	
Risk Category	
Names	
Subspecies	
Identification	
Distribution/Habitat	
Behavior	
Threat	
Clinical Symptoms	
<i>Agkistrodon halys</i>	
Risk Category	
Names	
Subspecies	
Identification	
Distribution/Habitat	
Behavior	
Threat	
Clinical Symptoms	

SECTION IV ANTIVENOMS

BIBLIOGRAPHY

LIST OF TABLES

Table I	Antivenoms Available for Use Against European Venomous Snakes
Table II	Sources of Antivenom
Table III	Addresses for Sources of Antivenom

LIST OF ILLUSTRATIONS

Figure 1	<i>V. a. ammodytes</i>
Figure 2	<i>V. a. montandoni</i>
Figure 3	Range of <i>Vipera ammodytes</i> in Europe
Figure 4	<i>V. 1. schweitzeri</i>
Figure 5	<i>V. 1. lebetina</i>
Figure 6	Range of <i>Vipera lebetina</i> in Europe
Figure 7	<i>V. xanthina</i>
Figure 8	<i>V. xanthina</i>
Figure 9	<i>V. xanthina</i>
Figure 10	Range of <i>Vipera xanthina</i> in Europe
Figure 11	<i>V. a. zinnikeri</i>
Figure 12	<i>V. a. aspis</i>
Figure 13	<i>V. aspis</i>
Figure 14	Range of <i>Vipera aspis</i> in Europe
Figure 15	<i>V. b. seoanei</i>
Figure 16	<i>V. b. berus</i> (male)
Figure 17	<i>V. berus</i>
Figure 18	<i>V. berus</i>
Figure 19	Range of <i>Vipera berus</i> in Europe
Figure 20	<i>V. kaznakovi</i> (male)
Figure 21	<i>V. kaznakovi</i> (shortly after shedding)
Figure 22	Range of <i>Vipera kaznakovi</i> in Europe
Figure 23	<i>V. 1. latasti</i>
Figure 24	<i>V. 1. latasti</i>
Figure 25	Range of <i>Vipera latasti</i> in Europe
Figure 26	<i>V. u. renardi</i>
Figure 27	<i>V. u. wetsteini</i>
Figure 28	Range of <i>Vipera ursinii</i> in Europe
Figure 29	<i>A. h. carraganus</i>
Figure 30	<i>A. h. carraganus</i>
Figure 31	Range of <i>Agkistrodon halys</i> in Europe ..

EUROPE AND NORTH AFRICA



INTRODUCTION

When prudent travelers plan to visit an unfamiliar area, they first learn as much as possible about that area. Particularly important are the health dangers that might be encountered from bacterial or viral diseases, climatic factors, and noxious plants or wildlife. Military personnel, active in the field, in rural or unpopulated regions, are exposed to risks not encountered by typical travelers. Thus, military personnel should have a basic familiarity with a region's plant and animal life.

The vast majority of plants and animals pose little risk. However, a small number of wild plants and animals can be harmful to man. For plants poisonous to eat, the danger is passive; if the rule is followed that *no* wild plant is to be eaten, there is little danger. In other cases, avoidance of danger requires more knowledge and care. For example, insect-borne diseases cannot be avoided by simply ignoring the insect. Although encounters with venomous snakes are very rare, personnel should have enough knowledge to effectively deal with these situations.

Snakes and man generally have the same objective: to avoid each other at any cost. Despite these mutually compatible intentions, encounters do occur. Venomous snakes pursue, bite, and inject venom (envenomate) for only two reasons, to obtain prey for food and to defend themselves. Man is not a natural or chosen prey for any snake. However, man's actions may well threaten the snake, which responds by defending itself and using its venom as protection.

The danger posed by venomous snakes to military operations is almost entirely psychological: man's fear of snakes, venomous or not, is far out of proportion to the medical risk of envenomation. One purpose of this volume is to replace that fear, and to allow personnel to operate effectively, with objective knowledge of the venomous snake problem.

However rare, the possibility exists that individuals will be bitten and envenomated. This may occur despite knowledge of the risk, or it may occur when an individual is ignorant or foolhardy about the danger. Envenomation can, and often does, result in a serious, life-threatening medical crisis. However, it need not result in loss of life or limb if proper care is provided promptly. Therefore, the second purpose of this volume is to provide the specific knowledge needed for useful primary and secondary care.

This volume is intended for the commander and his medical and operations officers. It provides the information necessary to plan antivenom support for a mission, and the factual information needed to maintain troop discipline and morale. Specific information on the level of danger, the identification of venomous species, and immediate first aid steps is intended also for field personnel and those providing first echelon medical care.

The focus of this volume is the threat presented by venomous snakes in a given region. This threat depends on a number of interrelated factors: the types of species and density of individual snakes present, the normal behavior of the snake (which helps determine the likelihood of an encounter), its behavior when encountered, (which helps determine the likelihood of a bite), the type and amount of venom that the snake *can* deliver and the toxicity of that venom. Given the above factors, which apply to all individuals of a species, one can make general statements. However, in any specific envenomation, additional factors may affect the outcome. These include the age of the snake, the time since the snake's last meal, and the site and depth of envenomation.

This volume presents snakebite envenomation information at three levels: the medical threat, treatment and prevention of snakebite (Section II); identification and description of the characteristics of individual venomous species (Section III); and sources of antivenom (Section IV).

Section II discusses snakebite in terms of medical threat, types of venom, immediate field treatment, and prevention of envenomation and is intended to guide untrained personnel in the field. Advanced methods of treatment, including how and when to administer antivenoms and the precautions which should be observed when doing so, are intentionally not included. Use of these advanced methods of snakebite treatment should be left to medically qualified personnel.

Section III considers each venomous species separately, giving sufficient physical description of the snake such that if one is encountered, it can be identified with reasonable accuracy. Major subspecies and variants are included, although not all color and pattern variations are described. The distribution of the various species is presented on maps. The behavior and temperament of a species and its venom type, yield, and toxicity are described. For this purpose, each species is classified according to a category of risk:

