

Epidemiological approach to the cestode infections of sheep in caspian sea region' Iran.

A. Eslami*.

K. Esmailnia**

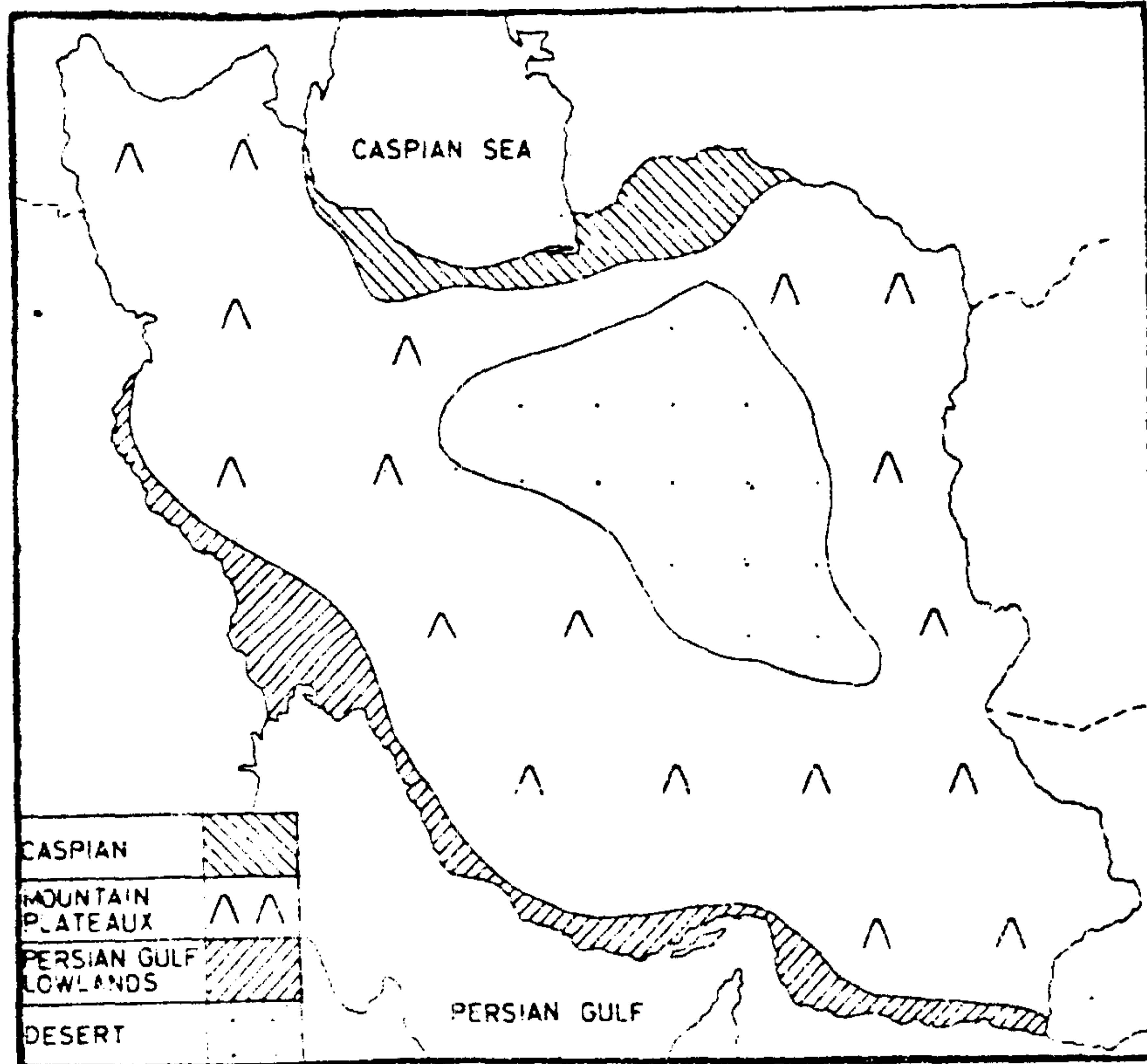
INTRODUCTION

Caspian sea region with a sheep population of about 4 millions, is one of the most important sheep breeding areas of Iran. This region includes the coastal plains and northern aspects of the Alborz range facing the Caspian sea. It has a rainfall of 40 to 150cm. per Year, with some rain in most month of the year. The relative humidity is high and mean monthly temperature range from 3⁰ to 26c. These conditions led to include this zone as one of the 4 major climatic zones of Iran, where it is likely that differences in Parasite Problem may be found.

The aims of this investigation were to find out the seasonal trends of cestode infections in Caspian sea region in order to advise the farmer to control them and also to determine the intermediate host(s) of sheep tapeworms in this region.

* Department of Pathobiology, Faculty of Veterinary Medicine, University of Tehran.

**Graduate Student, Faculty of Veterinary Medicine University of Tehran.



The Major Climatic Zones of Iran.

EXPERIMENTAL DESIGN

Epidemiology studies were done to provide data on the occurrence and seasonal incidence of the intestinal tapeworms. They were based on the observation of the egg or proglottid of cestode in the faecal examination of lambs or adult worms at necropsy at the slaughterhouse.

The worm egg count were done by McMaster method. Eggs of *Moniezia* and other cestodes were not counted but were recorded as present or absent, and for plotting results the percentage of sheep infected with cestodes was used. Twenty lambs were chosen from the youngest age group available, to avoid as far as possible using animals with previously acquired immunity. They were identified

by numbered eartags and faecal samples were taken from them monthly, for an interval of one year for examination.

At the slaughterhouse, during 4 different seasons the small intestine of 600 indigenouse sheep at different ages and sexes were opened and searched for adult cestodes. The recovered worms, after placing them in 40^oc. water, were fixed in 80% alcohol. For identification of the specimens into the species, they were stained using carmine acid.

In order to determine the coprophagous mites, intermediate host(s) of cestodes, surfaces equal to 25x25cm with 2cm depth, from permanant pastures grazed by naturally infected sheep were sampled and were brought into the laboratory. In the laboratory, they were then placed in the modified Berlese funnel for 3 days. Ten thousand mites were collected and they were searched for cysticeroid under a dissecting microscope.

RESULTS

The results of epidemiology studies are shown in Fig 1. These results show that cestode infections of sheep in Caspian sea region begin at early spring, reaching a peak by the end of this season and declining through summer. There was also a small peak in the middle of autumne.

Data obtained by examination of the small intestines is shown in Fig. 2. These results show also a peak in cestode infections in spring and a decline through summer. Staining the cestodes revealed the presence of 4

different species namely: *Moniezia expansa*, *M. benedeni*, *Thysaniezia giardi* and *Avitellina centripunctata*.

With examination of the coprophagous mites, 8 different genera belonging to 7 families were identified. The results of this part are summerised in Fig. 3.

Fig.3-Oribatid mites determined in the Caspian sea region, Iran, which can complete the larval development of sheep cestodes

- a- Oribatidae (D. Macfarlane)
 - 1- Zygoribatula
 - 2- Scheloribates laevigatus
- b- Mycobatidae (D. Macfarlane)
 - 1- Puncturibates sp.
- c- Galumnidae (D. Mcfarlane)
 - 1- Pergalumna sp.
- d- Tegoribatidae (D. Macfarlane)
 - 1- Scutozetes sp.
- e- Lincodamaeidae (D. Macfarlane)
 - 1- Lincodamaeus sp.
- f- Tectocephidae (D. Macfarlane)
 - 1- Tectocephus sp.
- g- Camisiidae (D. Macfarlane)
 - 1- Platynothrus sp.

All these genera and species are reported for the first time from Iran. Although sheep tapeworms can complete their development in them, but no cysticercoide was found in more than 10,000 mites examined in this experiment.

CONCLUSION

It is generally believed that cestode infections of sheep specially lambs in Caspian sea region are responsible for high mortalities, morbidities and low animal production in this area.

Our previous findings in this region, based on the results derived from the questionnaires, personal communication with field veterinarians and farmers, revealed that 4-5 treatment against sheep tapeworms per year, although not at the regular time and interval are practiced and up to 10 treatment is not uncommon.

The trends of seasonal incidence of sheep tapeworms in Caspian sea region determined in this survey is in line with that of Skerman et al. (1967) in the same region, with the exception that in latter, the percentage of infection was higher (80%) and no autumnal peak was noticed. The general pattern of infection of the small intestines with adult cestodes support the results of our epidemiology studies. But due to several treatments used

against this helminthiasis, the actual rate of infection must be much higher than 10.4% found in this investigation. Thus these results must be viewed with reserve.

To control cestode infections in the Caspian sea region, our findings suggest 3 treatment per Year the first one at the early spring, the second by the end of this season and the third one in the middle of autumn.

Although the rate of infected mites with cysticercoid of sheep tapeworms reported by other workers is not very

high and varies between 2.8 to 3.9%, but the total absence of larval cestodes in mites examined in this survey is surprising. More studies will be carried out in this field.

REFERENCES

- 1- Skerman, K.D., Shahlapoor, A.A., Eslami, A.H. and Eliazian, M. (1967) Observation on the incidence, epidemiology, control and economic importance of gastrointestinal parasites of sheep and goats in Iran. Vet. Med. Rev. "The reaction of the host to parasitism" 141-152.

Fig.1-The seasonal incidence of tapeworm infections in Caspian sea region, Iran. derived from two sources of data

Summer		Autumne		Winter		Spring		
Jun	Jul	Sep.	Oct.	Nov.	Dec.	Jan	Feb	
Aug.						Mar.	Apr	
							May	
100% cestode infection								

Fig 2-The incidence of tapeworm infections of sheep in Caspian Sea region, Iran. by collection of worms at necropsy

Season	Number of animals examined	Number of animals infected	Percentage of infection
Summer	100	4	2.2
Autumne	120	1	0.8
Winter	100	0	0
Spring	200	15	7.5

مجله دانشکده دامپزشکی، دانشگاه تهران، دوره (۴۳) شماره (۱ و ۲ و ۳ و ۴) تهران (۱۳۶۷)

اپیدمیولوژی تنیازس گوسفندان در سواحل بحر خزر

دکتر علی اسلامی*

دکتر کسری اسماعیل نیا**

تنیازس یکی از آلودگی های انگلی شایع گوسفند و بز در سواحل بحر خزر می باشد علیرغم این موضوع در مورد اپیدمیولوژی آن اطلاعات کافی موجود نیست . در یک بررسی ب مدت یکسال ۶۰۰ عدد روده گوسفند بومی مازندران از نظر آلودگی به سستودهای بالغ مورد آزمایش قرار گرفت . طی همین مدت از ۲۰ راس بره شماره گوش زده ماهیانه آزمایش مدفوع بعمل آمد . و برای تعیین میزان واسط سستودها بویژه مونیزیا نمونه هائی از مراتع آلوده در آزمایشگاه با استفاده از قیق برلس کشت داده شد ده هزار جرب جدا و در زیر میکروسکوپ از نظر وجود سیستی سرکوئید مورد آزمایش قرار گرفت در بررسی روده های باریک ۳۳/۵٪ آنها مبتلا به سستود بودند و چهارگونه مونیزیا اکسپانسا مرنیزیا بنه دنی ، اویتلینا سانتری پونکتا ، هلیکوم تراژ یاردی تشخیص داد شد . در گله آزمایشی میزان آلودگی به سستودها ۷۳٪ ۱۶ درصد تعیین گردیده آلودگی به انگل در اواخر بهر باوج خود رسیده و در پاییز نیز منحنی مربوط بآلودگی اوج مختصری را نشان داد در بررسی جرب ها گونه های مختلف زیگوریپاتولا ، شلوریپیتس لویگاتوس ، لینکودا مائوس ، پونکتور بیپیتس ، پرگالومنا ، پلاتی نوتروس ، تکتوسفوس که همگی در دنیا بعنوان میزان واسط مونیزیا گزارش شده اند تشخیص داد شد ولی سیستی سرکوئید در آنها مشاهده نگردید .

* گروه آموزشی پاتوبیولوژی ، دانشکده دامپزشکی ، دانشگاه تهران

** دانش آموخته دانشکده دامپزشکی ، دانشگاه تهران