External parasites (Ectoparasites)

Introduction:

External parasites are arthropods of poultry that live on or in the skin and feathers

Includes:

A-permanent :(whole life cycle is established on the bird)

I-LICE (usually present around vent, breast &thigh)

(1)Chicken lice---a- body louse (**Menacanthus stramineus**)

b-wing louse **(Lipeurus caponis)**

c-shaft louse **(Menopon gallinae)**

(2) Duck& goose lice----a-body louse **(Trinoton anserinum)**

(3) Pigeon lice------- **(columbicola columnbae)**

(4) Turkey lice----- **(Chelopistes meleagridis)**

Signs:

1-all poultry lice have a chewing mouth parts feed on dry skin scales ,skin exudates ,debris ,feather and can puncture skin and feed on lymph and blood so lead to poor health conditions

2-severe irritations lead to sleep disturbance

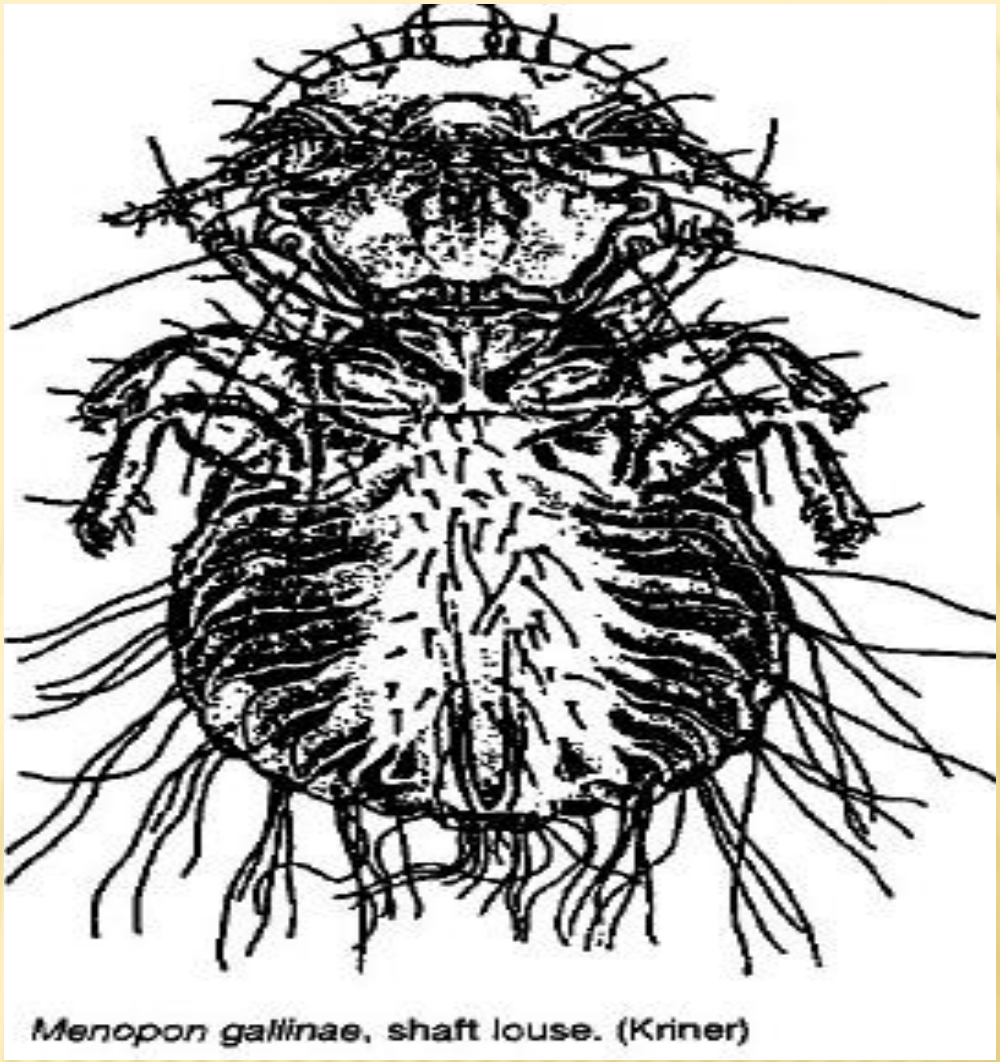
3-decrease in production

4-may lead to anemia

5-the nits (eggs) present in clusters at base of feather lead to feather broken and dropped

Treatment:

By insecticides as DDT dusting opposite to feather directions



Menopon gallinae, shaft louse. (Kriner)

II-MITES (MANGE)

1-Body mite---- **(Knemidocoptes gallinae)**
2-Leg mite-**---(Knemidocopic mutans**)scaly leg mite **Microscopic**

Sings of scaly leg mite:

1-mite burrowing under scales &multiplicities causing skin irritation lead to dirty thickened scales under which severe inflammation &scales sloughed out

D.D:

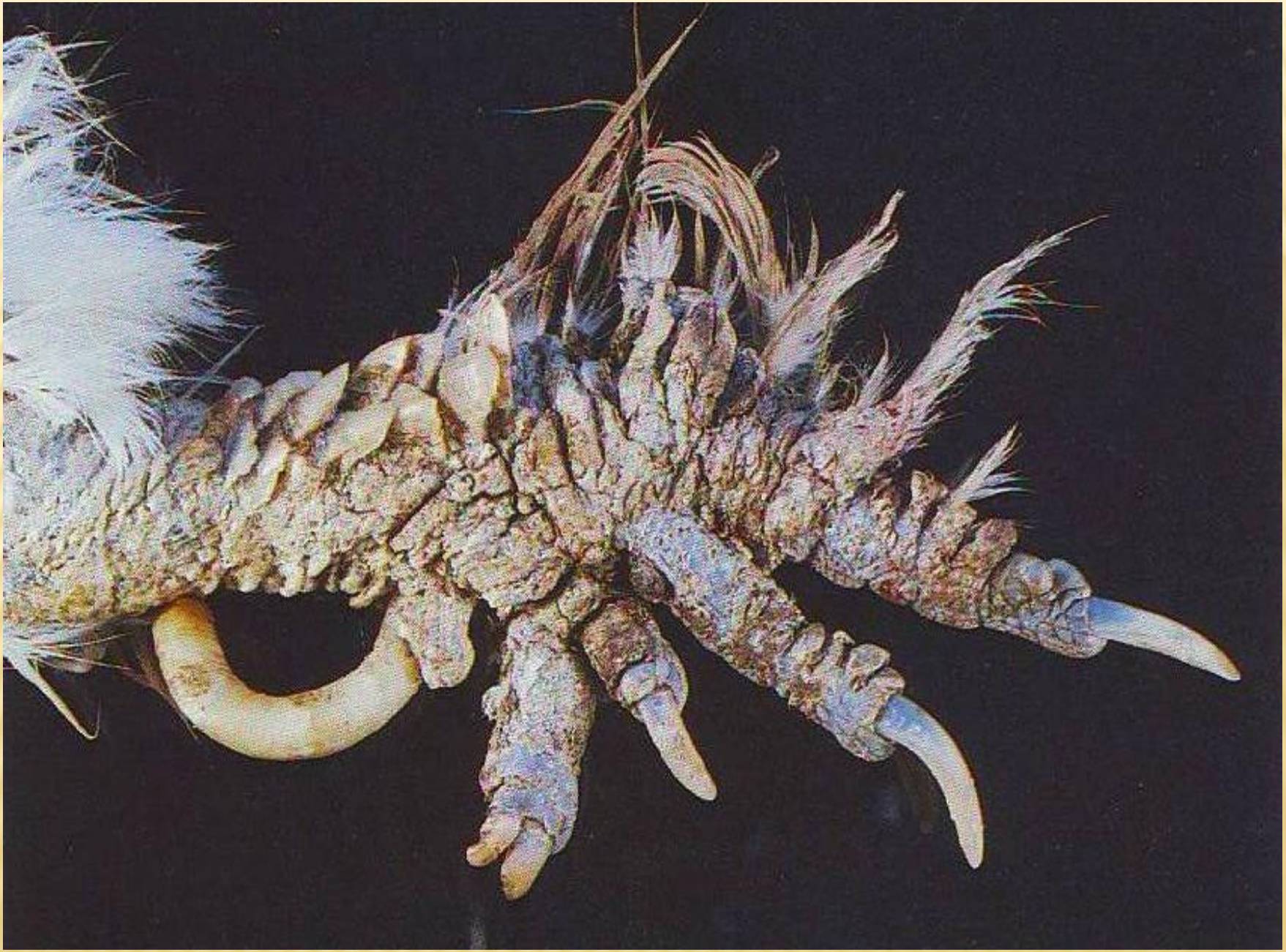
By scrapping the lesion scales and adding NaoH (warmed) for dissolving scales then found the mite (after centrifugation &examine the sediment under microscope)

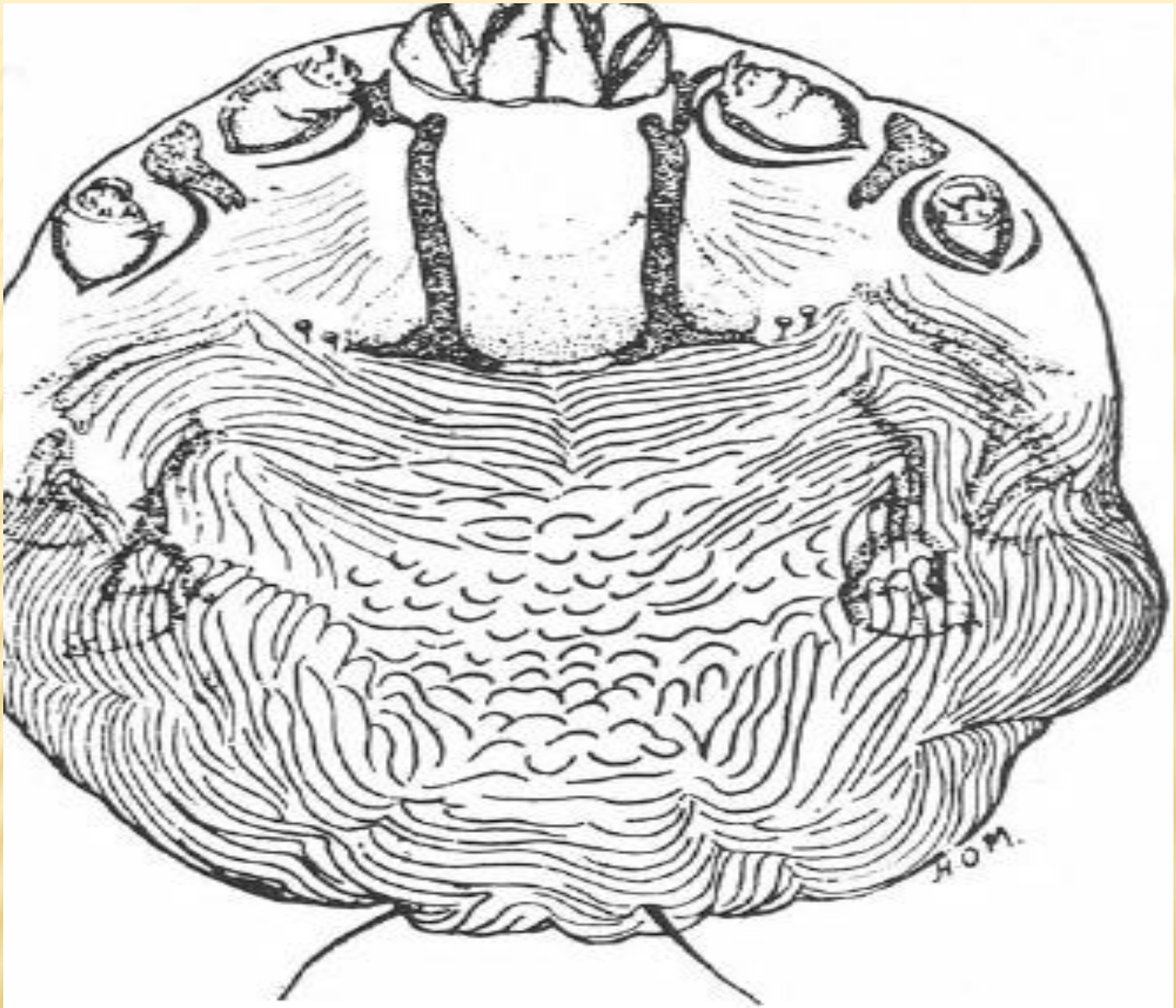
Treatment for mites:

1-Dipping or spray leg for several times by pyrthrin

2-dusting by DDT powder for affected parts

3-Ivermectine (ivomec) S/C 0.4 ml/kg BW





. *Knemidocoptes mutans*, scaly leg mite. (Soulsby)

B-Temporary:

I-TICKS: Fowl ticks, **(Argas persicus**)=soft ticks

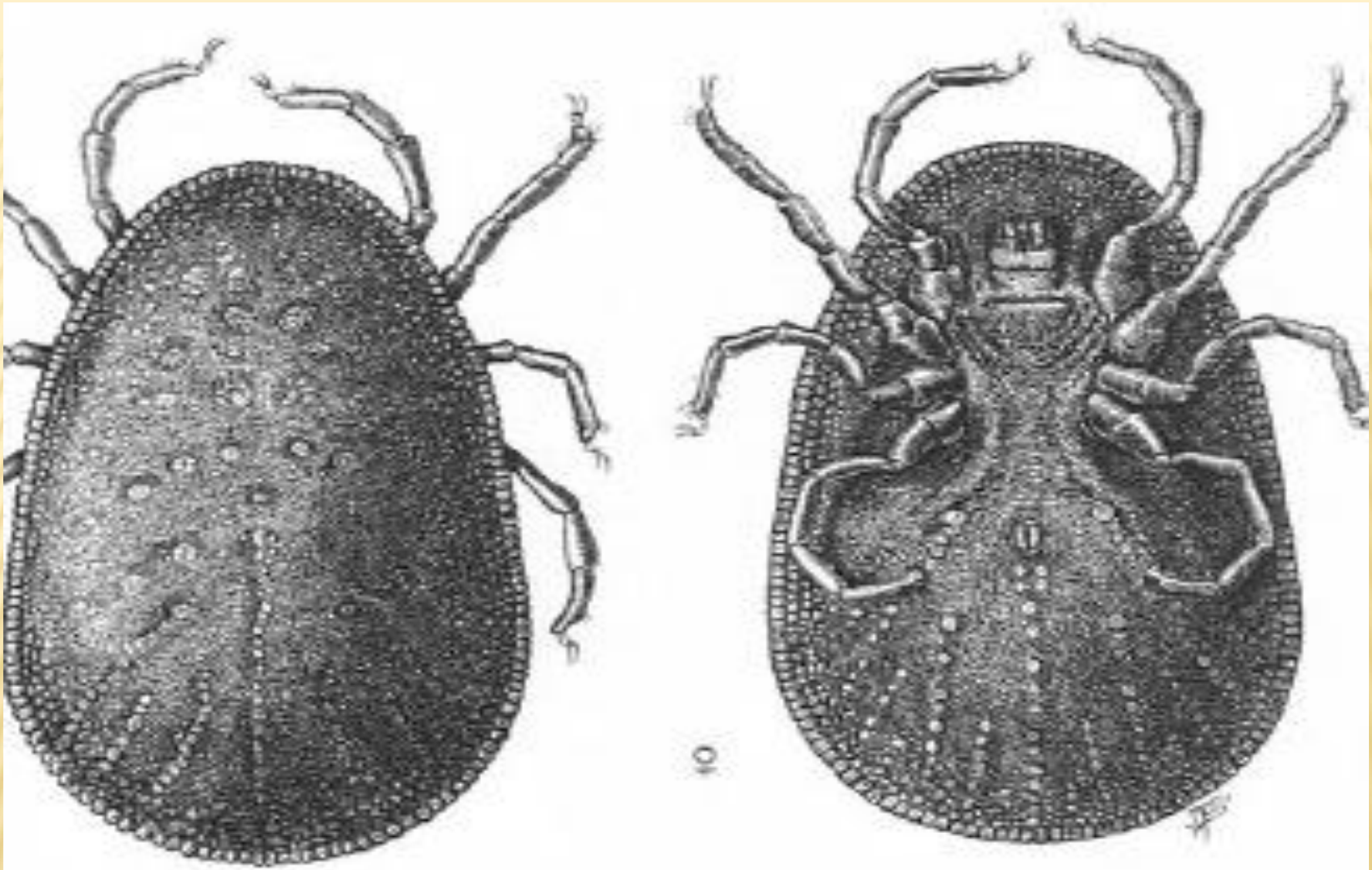
Signs:

1-seeds (larva) present on chicken body (around vent)causing severe irritation and feather removed from scratching & may injury developed

2-adullt in crakes woods and litter suck blood at night lead to anemia, well feed one called blue bug (transmit spirochetosis)

Treatment:

By insecticides as DDT dusting opposite to feather directions

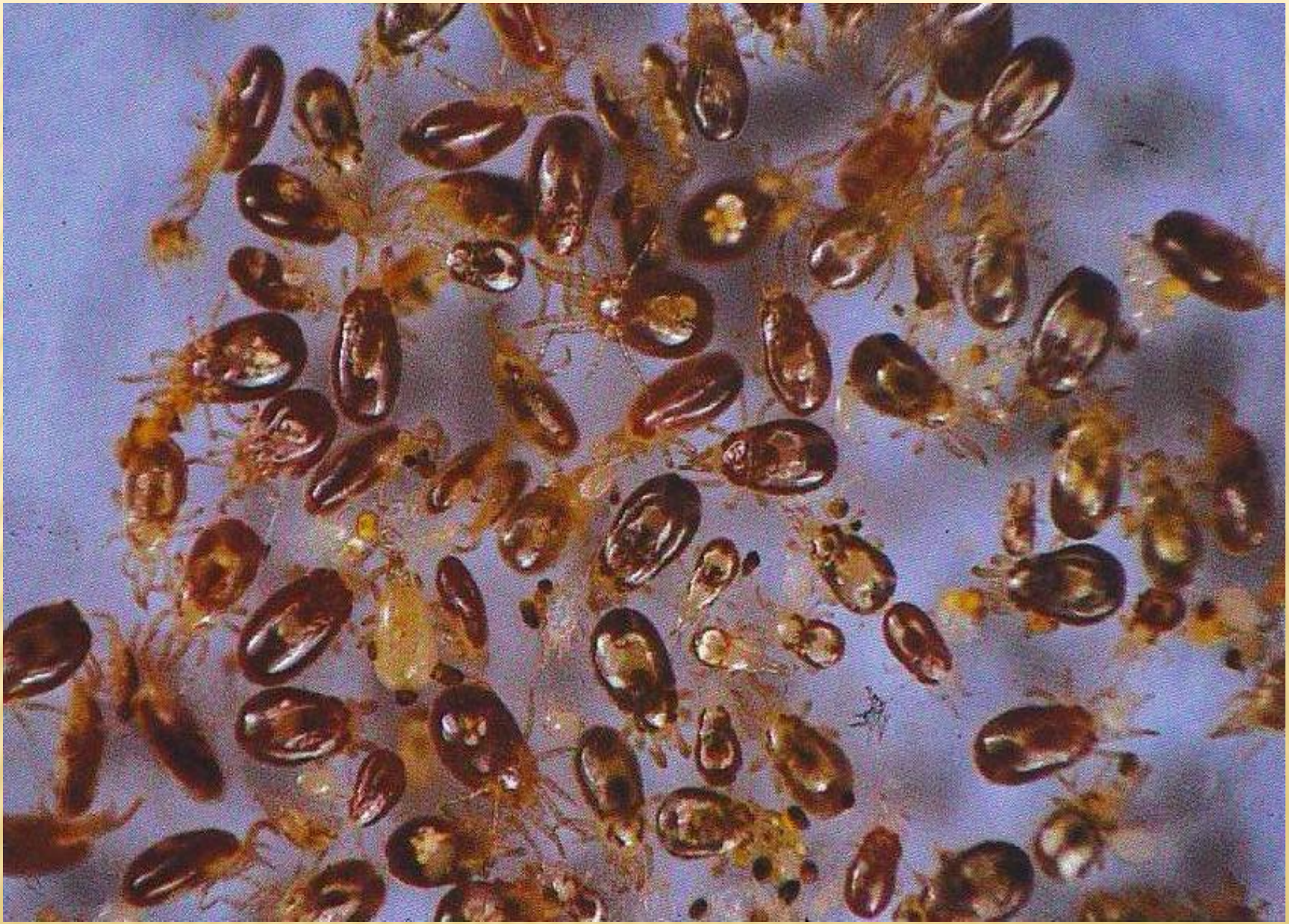


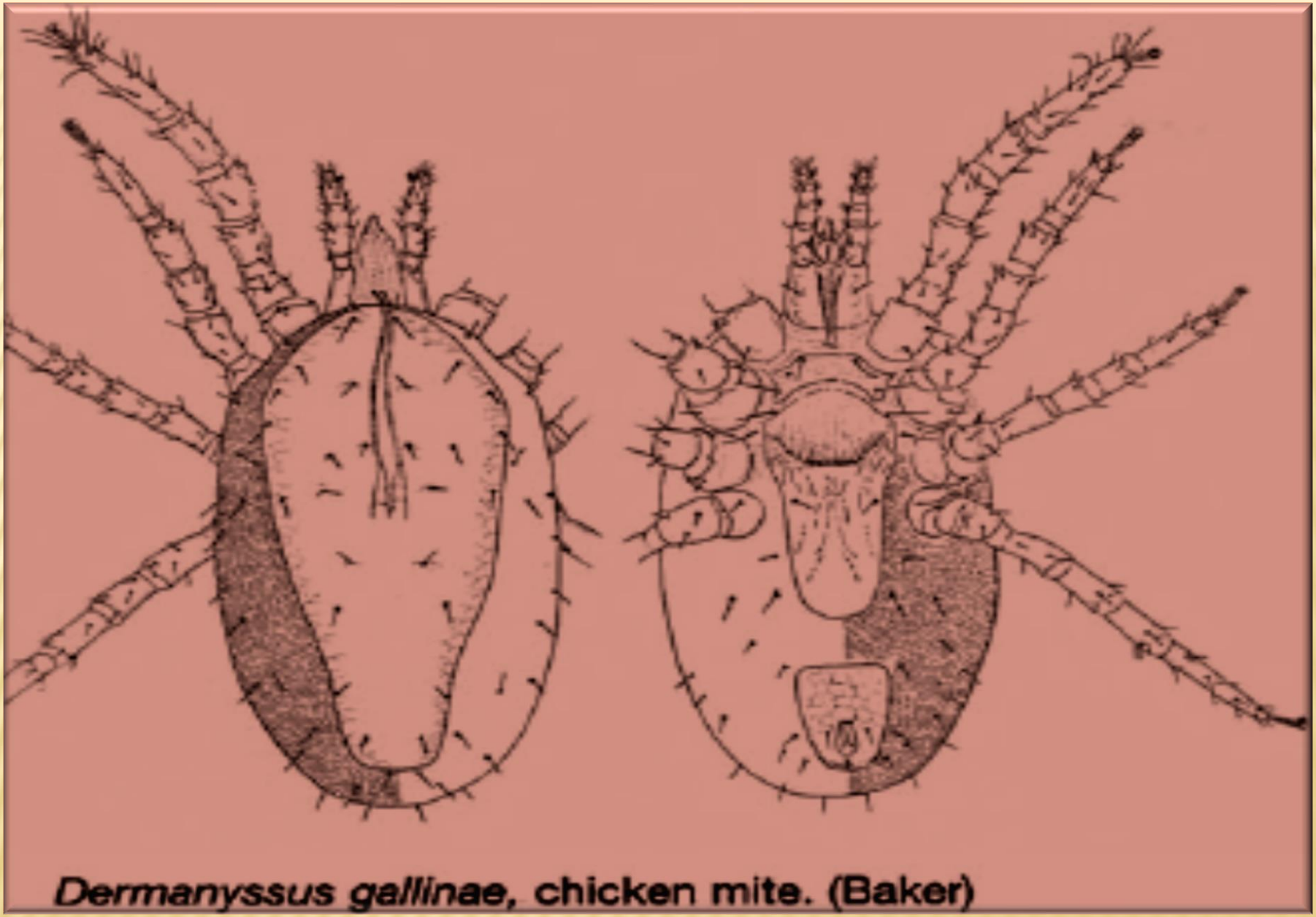
. *Argas persicus*, fowl tick. Dosal view on left, ventral on right

II-RED MITE: chicken mite **(Dermanyssus gallinae)** roost mite,

Signs:

Macroscopic mite feed at night sucking appear red in color found under wings &vent leading to severe irritation and anemia





Dermanyssus gallinae, chicken mite. (Baker)

Detection:

1-scratching and preening due to irritation
2-unexpected drop in production
3-lice and northern fowl mites found by examining the skin after parting the feathers using a battery pack lamp
4-usually examine vent, head and legs
5-blood sucking parasites (bed bugs and chicken mites) difficult to detect as come to birds only to feed so must examine bedding, roots, walls, nest material and cracks

Economic importance & negative impactace:

1-decrease in meat and egg production
2-increase food conversion rates with no significance on body weight
3-severe irritation with loss of condition
4-in case of blood sucking parasites lead to anemia
5-severe lousiness in poultry due to malnutrition and weight loss
6-louse infected chicks die due to nerve irritation which interfering with the rest and sleep

7-transimite certain poultry pathogen as:

- Marek's virus by mosquitoes

-spirochetosis by soft ticks

- AE virus by lice

-Chlamydia of ornithosis by lice & mites

-tape worms (Raillietina spp., hymenolepis spp.) By beetles

-Darkling beetles act as reservoir or mechanical carriers for

*Aspergillosis

*E.coli

*Salmonella, Streptococcus

*Marek's disease & IBD

-culicodies spp transmit fowl pox among turkey

& also they act as I.H haemoproteus spp(blood protozoan)

-black flies transmit Leucocytozoon during sucking blood

-house fly (Musca domestica) can transmit

*ND virus as chicken can eat its larva

*act as I.H for tape worms & can carry cecal worm (**Heterakis gallinae** which carry histomoniasis of turkey)

*certain larva of house fly can transmit CL.botulinum (Limber neck)

*transmit fowl cholera to turkeys

*transmit Mycobacterium tuberculosis to chickens

-pigeon fly transmit blood protozoan (Haemoproteus columbae)

-mites transmit (ND, fowl pox& Chlamydia)

-Red mite spread fowl cholera

Control:

Integrated pest management (IPM) programs

SUCCESSFUL IPM PROGRAMS:

1-Yield better community relations

2-Improved flock performance

3-Reduced structural damage

4- Lower control costs.

Includes:

A-CULTURAL

B- PHYSICAL

C-BIOLOGICAL

D- CHEMICAL

A-CULTURAL& B- PHYSICAL

1- Fly control is dependent on manure and moisture management, Dry manure (50% moisture or less) is not suitable for fly oviposition or larval development, but simultaneously provides a desirable habitat for beneficial predators and parasitoids

C-BIOLOGICAL

1-Several beneficial insects and mites are associated with poultry manure can help suppress house fly populations

Including:

A-Predaceous mites (**Macrocheles muscaedomesticae**)

-Feeds on house fly eggs and 1st instar larvae.

- A single mite can consume up to 20 house fly eggs per day.

B- Hister beetle **(Carcinops pumilio)**

-Adults and larvae feed on house fly eggs and early instar larvae, foraging in the surface layers of manure.

C- Parasitoids

-Parasitic wasps, or parasitoids, are tiny wasps that lay their eggs in fly pupal cases, killing the developing flies.

D- CHEMICAL

-**Insecticides** and **acaricides** can play an important role in poultry IPM programs, if they are used in concert with other components of the management plan.

- Most fly **insecticides** are toxic to predators and parasitoids, so can result in their destruction if used indiscriminately
- Space sprays, typically containing synergized pyretrins, provide a quick adult fly knockdown.
- Residual sprays are used to treat building surfaces with chemicals that persist for sustained periods, so that flies landing on these treated surfaces acquire lethal doses of the toxicant and are killed.

- Fly baits combine a stomach poison with an attractive food (such as sugar) to lure in flies and get them to consume the material. They are excellent selective adulticides for suppressing low fly populations
- Larvicides include traditional organophosphate and pyrethroid insecticides formulated for use in the manure as well as insect growth regulators (IGRs).
- GENERAL PESTICIDE CONTROL PROCEDURES
-The synthetic pyrethroids, organophosphorus, carbamate, and pyrethroid insecticides are the main ectoparasite and fly control chemicals used for direct application to poultry, litter, or buildings.

Application

1-Dusting.(this method is seldom used in modern poultry facilities, although it is an effective way to treat small flocks of free-range birds.**)**

A-For conventional houses,

B-dust can be applied to litter.

C-Dust boxes may be used for birds kept on conventional

Litter or in cages.

2-Spraying.

Rapid and efficient, High-pressure, large-volume output devices are most desirable for spraying houses, to ensure penetration of spray into cracks and crevices. Make sure that the sprayer is equipped with an agitator or pump bypass to ensure constant agitation

Misting.

Electric mist machines (foggers) are efficient, rapid, and often labor-saving. Mist machines can be used efficiently to dispense fly spray, disinfectants, and some residual materials.