

The background is a light blue gradient with several realistic water droplets of various sizes scattered across the surface. The droplets have highlights and shadows, giving them a three-dimensional appearance.

METHODS FOR MARINE FISH QUARANTINE

AND

TREATMENTS FOR TWO COMMON PARASITES

AGENDA

- BIOGRAPHY
- WHY QUARANTINE?
- QUARANTINE EQUIPMENT
- BASIC APPROACHES TO QT
- MEDICATED QT IN DETAIL
- TANK TRANSFER METHOD QT IN DETAIL
- CURING DISEASES IN THE DT
- COMMON PARASITES
- ICH LIFECYCLE AND TREATMENTS
- VELVET LIFECYCLE AND TREATMENTS

BIOGRAPHY

- **HOMETOWN:** VOORHEES, NJ
- **FIRST REEF TANK:** 1995
- **EDUCATION:**
 - '06 BS ELECTRICAL ENGINEERING
 - '14 MS MECHANICAL ENGINEERING
- **JOB:** LOCKHEED MARTIN AND PRESSION INC.
- **FAMILY:** WIFE, TWO DAUGHTERS (4YR AND 3MO), DOG AND CLOWNFISH



HOW DO YOU QUARANTINE?

AND THE EQUIPMENT REQUIRED

WHY QUARANTINE?



WHY QUARANTINE?



- PROTECT THE FISH ALREADY IN YOUR DISPLAY TANK
- EASY ACCESS TO TREAT NEW FISH FOR DISEASES
 - MOST MEDICATIONS ARE **NOT** REEF SAFE!
- DISEASE “MANAGEMENT” IS NOT POSSIBLE FOR SOME DISEASES (I.E. VELVET AND URONEMA MARINUM)
- YOU CAN MATCH THE SALINITY OF THE WATER FROM WHICH A NEW FISH CAME FOR REDUCED STRESS
- YOUR QUARANTINE TANK CAN SERVE AS TEMPORARY HOUSING IN THE EVENT A TOXIN CONTAMINATES YOUR MAIN DISPLAY; OR IF A FISH IS BADLY INJURED.

QUARANTINE EQUIPMENT



- AQUARIUM
- LIGHT
- POWER HEAD
- HEATER
- AMMONIA ALERT BADGE
- PLACES TO HIDE
- DON'T'S: LIVE ROCK AND SAND

BASIC APPROACHES TO QT

Minimum Time for All QT Approaches is 1 Month

TANK TRANSFER (4 WEEKS)

- 1 DAY TO ACCLIMATE
- <2 DAYS LATER TRANSFER TO TANK 2 AND PRAZIPIO TREATMENT
- <72 HOURS LATER TRANSFER TO TANK 1
- <72 HOURS LATER TRANSFER TO TANK 2 AND PRAZIPIO TREATMENT
- <72 HOURS LATER TRANSFER TO TANK 1
- <72 HOURS LATER TRANSFER TO TANK 2
- 14 DAYS OBSERVATION

MEDICATED (6 WEEKS)

- 3-5 DAYS TO ACCLIMATE
- 5-7 DAY PRAZIPIO TREATMENT
- 20-25% WATER CHANGE
- 5-7 DAY PRAZIPIO TREATMENT
- 20-25% WATER CHANGE, ADD ACTIVATED CARBON FOR 24 HOURS
- 30 DAYS COPPER OR CHLOROQUINE PHOSPHATE TREATMENT

You may need both!

MEDICATED QT IN DETAIL

ONLY FOR FISH NOT SHOWING AN ACTIVE INFECTION

- FISH IS FLOATED IN THE BAG FOR 20-30 MINUTES (TO TEMP ACCLIMATE) AND THEN RELEASED INTO QT WITH MATCHING SG.
- A FEW DAYS TO RECUPERATE AND TRY TO GET FISH EATING
- ONCE FISH EATS FOR TWO CONSECUTIVE DAYS BEGIN PRAZIPRO TREATMENT
 - DOSE ONCE, WAIT 5-7 DAYS, DO A 20-25% WATER CHANGE
 - REPEAT DOSAGE
 - FIVE DAYS LATER DO A 20-25% WATER CHANGE AND RUN ACTIVATED CARBON FOR 24 HOURS
- REMOVE THE CARBON AND BEGIN EITHER CHLOROQUINE PHOSPHATE OR COPPER TREATMENT FOR 30 DAYS
- IF ALL WENT WELL, FISH IS READY FOR THE DT

TANK TRANSFER METHOD IN DETAIL

ONLY FOR FISH NOT SHOWING AN ACTIVE INFECTION OTHER THAN ICH

- DAY 1 - FISH IS PLACED IN TANK 1
- DAY 4 - ROUGHLY 72 HOURS LATER TRANSFER THE FISH TO TANK 2
 - **NEVER EXCEED 72 HOURS FROM THE LAST TRANSFER**
 - PARAMETERS SHOULD MATCH TANK 1 PERFECTLY, SO YOU CAN JUST CATCH & RELEASE (NO ACCLIMATION)
 - TRANSFER AS LITTLE WATER AS POSSIBLE WITH THE FISH.
 - *OPTIONAL*: DOSE PRAZIPRO
- DAY 7 – TRANSFER FISH TO TANK 1
- DAY 10 – TRANSFER FISH TO TANK 2
 - *OPTIONAL*: DOSE PRAZIPRO
- DAY 13 - TRANSFER FISH TO TANK 1
 - **FISH SHOULD NOW BE ICH FREE!**
- OBSERVE FISH FOR 2 WEEKS TO ENSURE NO OTHER INFECTIONS

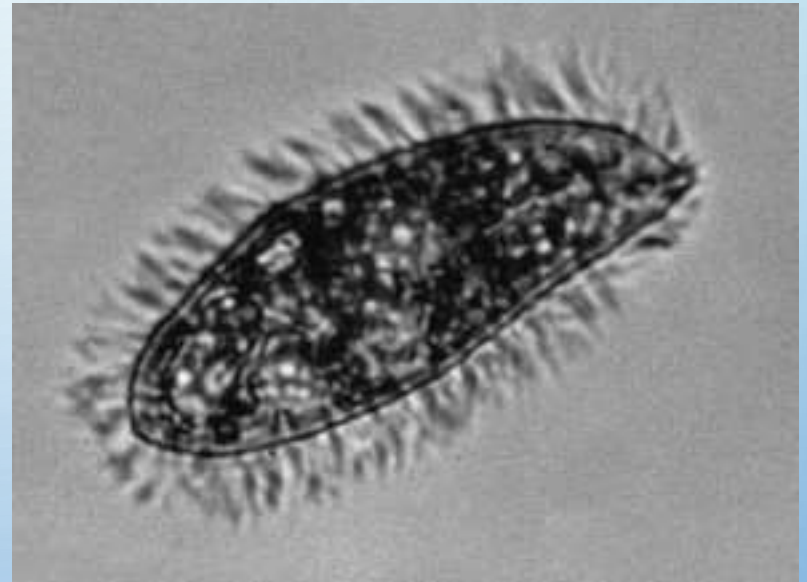
CURING DISEASES IN THE DISPLAY TANK

- MOST MEDICATIONS ARE **NOT** REEF SAFE
- DON'T TRUST "REEF SAFE CURES"
- CURES REQUIRE REMOVAL OF FISH FROM DT AND RUNNING FALLOW

Disease	Days Fallow
Ich	76 Days
Velvet	42 Days
Brook	42 Days
Flukes	28 Days
Hole in Head	UNLIMITED!

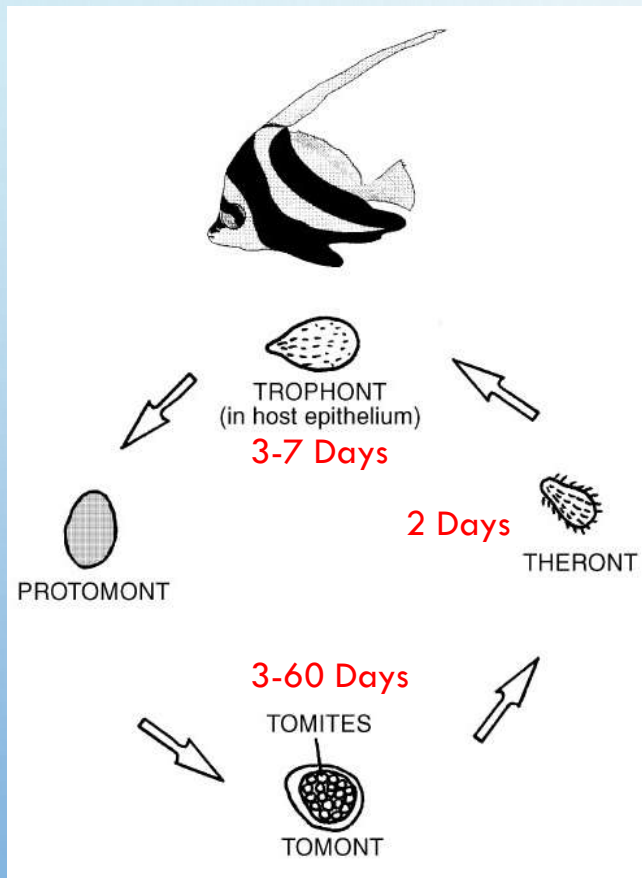
COMMON PARASITES

- ICH (*CRYPTOCARYON IRRITANS*)
- VELVET (*AMYLODINIUM OCELLATUM*)
- HOLE IN HEAD (*URONEMA MARINUM*)
- FLUKES
- INTESTINAL PARASITES

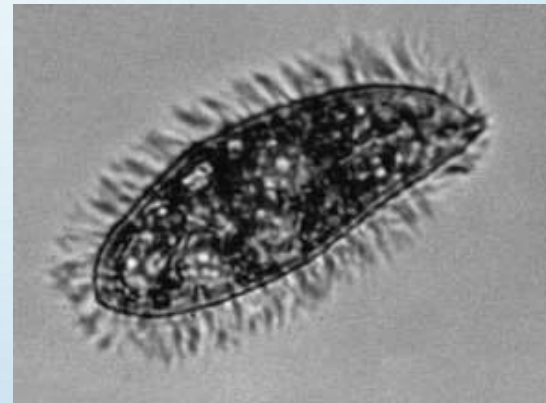


Ich Theront*

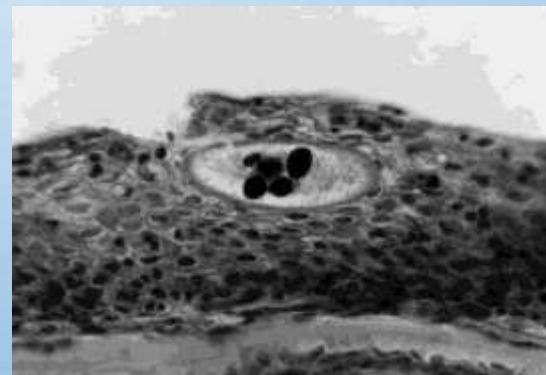
ICH (CRYPTOCARYON IRRITANS)



Ich Lifecycle *



Ich Theront*



Ich Trophont in Epidermis*

ICH (*CRYPTOCARYON IRRITANS*)

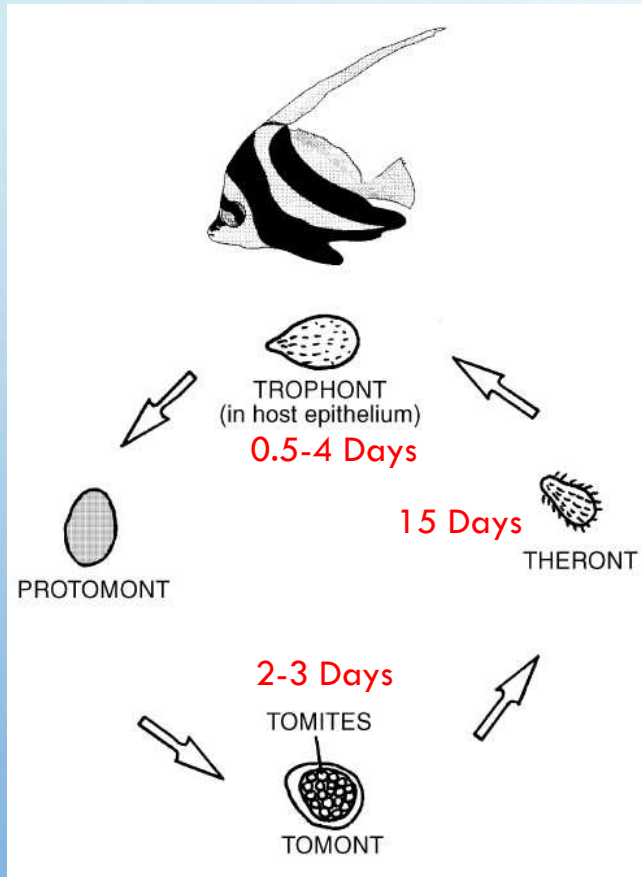


Purple Tang with Ich*

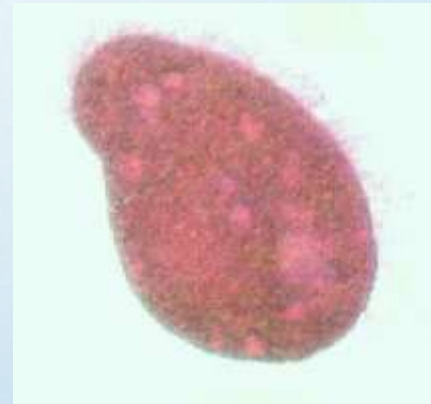
TREATMENT FOR ICH IN QT

- COPPER
 - 30 DAYS AT THERAPEUTIC LEVELS BASED ON THE FORM OF COPPER USED
- CHLOROQUINE PHOSPHATE (*REQUIRES PRESCRIPTION!*)
 - 30 DAYS AT 60MG/GALLON
- TANK TRANSFER METHOD
 - SEE PREVIOUS SLIDES
- HYPOSALINITY
 - REDUCE SG TO 1.009 OVER 48 HOURS AND MAINTAIN FOR 30 DAYS
 - WATCH FOR PH DROPS! HYPO RESISTANT ICH STRAINS DO EXIST!

VELVET (*AMYLOODINIUM OCELLATUM*)



Velvet Lifecycle *



Velvet Theront***



Velvet Trophont in Gills**

* Source: http://www.labspaces.net/blog/1243/Curing_a_plague__Cryptocaryon_irritans
** Source: <https://reefs.com/2015/01/21/ruthless-fish-killer-treating-diagnosing-amyloodinium/>
*** Source: <https://reefculture.wordpress.com/category/diseases/>

VELVET (*AMYLOODINIUM OCELLATUM*)



Purple Tang with First Signs of Velvet*



Purple Tang with Advanced Velvet Infection*

How Many Days Between These Photos?

12 HOURS!

TREATMENT FOR VELVET IN QT

- 5 MINUTE FRESHWATER DIP
- CHEMICAL BATH (IN SALTWATER MATCHING SG/TEMP THE FISH CAME FROM). YOU HAVE TWO OPTIONS:
 - ACRIFLAVINE (PREFERRED) - 75-90 MINUTES, AERATE HEAVILY BOTH BEFORE & DURING THE BATH, AND TEMPERATURE CONTROL THE WATER. PRODUCTS TO USE INCLUDE **ACRIFLAVINE-MS** AND **RUBY REEF RALLY**. **DO NOT** MIX ACRIFLAVINE WITH ANY OTHER CHEMICALS.
 - FORMALIN - 30-60 MINUTES MAX, AERATE HEAVILY BOTH BEFORE & DURING THE BATH, AND TEMPERATURE CONTROL THE WATER. THE FOLLOWING PRODUCTS TO USE INCLUDE: **FORMALIN-MS, QUICK CURE, AQUARIUM SOLUTIONS ICH-X, KORDON RID-ICH PLUS**. FORMALIN IS A KNOWN CARCINOGEN, USE GLOVES!
- PLACE THE FISH IN A QT PRE-DOSED AT 80MG/GAL USING CHLOROQUINE PHOSPHATE OR COPPER ALREADY AT **MINIMUM** THERAPEUTIC LEVELS
 - WHILE IN QT, USE A WIDE SPECTRUM ANTIBIOTIC (EXS. **SEACHEM KANAPLEX, FURAN-2**) FOR THE FIRST WEEK TO WARD OFF ANY POSSIBLE BACTERIAL INFECTIONS.
- KEEP THE FISH IN CP OR COPPER (AT THERAPEUTIC LEVELS) FOR 30 DAYS

TREATMENT FOR VELVET IN QT



Entire Setup



Freshwater Bath



Rally Bath



QT w/Copper

SEEK HELP EARLY IF YOU SUSPECT A PROBLEM



White stringy poop! Is this an intestinal parasite or hexamita?

SUMMARY

- NOTHING GOOD HAPPENS QUICKLY IN REEFING
- BAD THINGS USUALLY HAPPEN VERY QUICKLY IN REEFING
- QT IS A RELATIVELY EASY PROCESS
- QT IS NOT EXPENSIVE
- SKIPPING QT CAN BE VERY EXPENSIVE
- QT PROTECTS YOUR DT AND ITS INHABITANTS
- TREATMENT OF ICH AND VELVET ARE BOTH POSSIBLE IF YOU RECOGNIZE THE SIGNS AND ACT QUICKLY

ACKNOWLEDGMENTS

- MAJOR THANKS TO HUMBLEFISH THE FISH DISEASE IDENTIFICATION AND TREATMENT GURU OF REEF2REEF
 - THESE SLIDES DRAW HEAVILY FROM HIS METHODOICAL APPROACHES TO DISEASE TREATMENT IN THE METHOD MOST APPROPRIATE AND EFFECTIVE FOR EACH DISEASE
 - IN DEPTH DETAILS ABOUT THE PRESENTED DISEASES AND TREATMENTS (AND MORE!) CAN BE FOUND HERE:
 - [HTTP://WWW.REEF2REEF.COM/THREADS/FISH-DISEASE-INDEX.247600/](http://www.reef2reef.com/threads/fish-disease-index.247600/)
 - [HTTP://WWW.REEF2REEF.COM/THREADS/TREATMENT-OPTIONS-INDEX.247573/](http://www.reef2reef.com/threads/treatment-options-index.247573/)

THANKS FOR
LISTENING!

