

# Development stages of the “rope” human intestinal parasite

Submitted to arxiv.org on Jan. 13, 2013

Alex A. Volinsky, Ph.D.<sup>a\*</sup>, Nikolai V. Gubarev, Ph.D.<sup>b</sup>, Galina M. Orlovskaya, RN-C<sup>c</sup>, Elena V. Marchenko, M.D., Ph.D.<sup>d</sup>

<sup>a</sup> Department of Mechanical Engineering, University of South Florida, Tampa FL 33620, USA

<sup>b</sup> Occupational Safety Ltd. (OOO “Bezopasnost Truda”), 32 ul. Koli Tomchaka, suite 14, St. Petersburg 196084, Russia

<sup>c</sup> Department of Surgery, St. Petersburg City Hospital No. 15, 4 Avangard St., St. Petersburg 198205, Russia

<sup>d</sup> Currently no affiliation, Formerly research volunteer at H. Lee Moffitt Cancer Center and Research Institute, 12902 USF Magnolia Drive, Tampa FL 33612, USA

\* Corresponding author. Phone: +1 813 974 5658, Fax: +1 813 974 3539

Email: [volinsky@usf.edu](mailto:volinsky@usf.edu)

## Abstract

This paper describes the five development stages of the rope human parasite. Rope parasites have been discovered as a result of cleansing enemas. Parasite adult stages live in human gastrointestinal tract and are anaerobic. They move inside the body by releasing gas bubbles utilizing jet propulsion. Rope parasites look like a rope, and can be over a meter long. It takes tens of years for them to fully develop into mature species (fifth stage). The fourth stage looks similar, but the parasite is shorter and has softer slimier body. The third stage looks like branched jellyfish. The second stage is viscous snot, or mucus with visible gas bubbles that act as suction cups. The first stage is slimier mucus with fewer bubbles, which can reside almost anywhere in the body. Antihelminthic methods are also mentioned in the paper.

**Keywords:** New taxa; rope parasite; *funis parasitus*; helminths; human intestinal parasite; development stages.

## Introduction

Human parasitic worms are classified as nematodes (roundworms), cestodes (tapeworms), trematodes (flukes) and monogeneans (Grove, 1990). It is estimated that every fourth human is hosting intestinal parasites (Watkins and Pollitt, 1997, World Development Report, 1993), meaning that even more people carry parasite intermediate stages. Humans can also carry intermediate stages of animal parasites, such as cat ascaris worms. Parasitic worms have different life cycles, sometimes using humans as permanent or temporary hosts. What if there is a parasite that does not have intermediate stages outside the human body, lives and dies with the human? Such specie, called rope parasite, or *funis parasitus* in Latin, has been recently discovered and described (Gubarev, 2009, Volinsky et. al. 2013). It does not fall under a single known parasite category. Based on its attributes, this pre-nematode may be older than other parasites.

### Rope parasite adult 5<sup>th</sup> stage

Figure 1 shows fully developed human rope parasites passed with enemas from a 45 years old adult. These anaerobic parasites resemble human feces, and dry out outside the human body in air. They are called rope worms (*funis parasitus* in Latin) because they look like twisted fibers of a rope (Figure 1). Rope worms color depends on the food a person eats, and varies from white to black. When a person is fasting, white worms leave the human body with enemas, so their original color is white. Rope worms can be located almost anywhere in the human body, but prefer digestive tract, small and large intestines specifically. They twist like a corkscrew, increasing their cross-section, blocking the lumen of the intestine. This is also how rope worms squeeze the juice out of the fecal matter, and feed on it osmotically. To achieve this, the rope parasite has multiple channels running along its length. The parasites emit gas bubbles inside these channels utilizing jet propulsion (Volinsky et. al. 2013). They are most active at night, between 1 and 6 am. High parasitic activity and toxins release can alter human attention and reaction.



**Figure 1. Adult stages of the rope parasite (45 years old man).**

Here are the reasons why the rope parasites can stay inside the human body without being carried out by peristaltic movements:

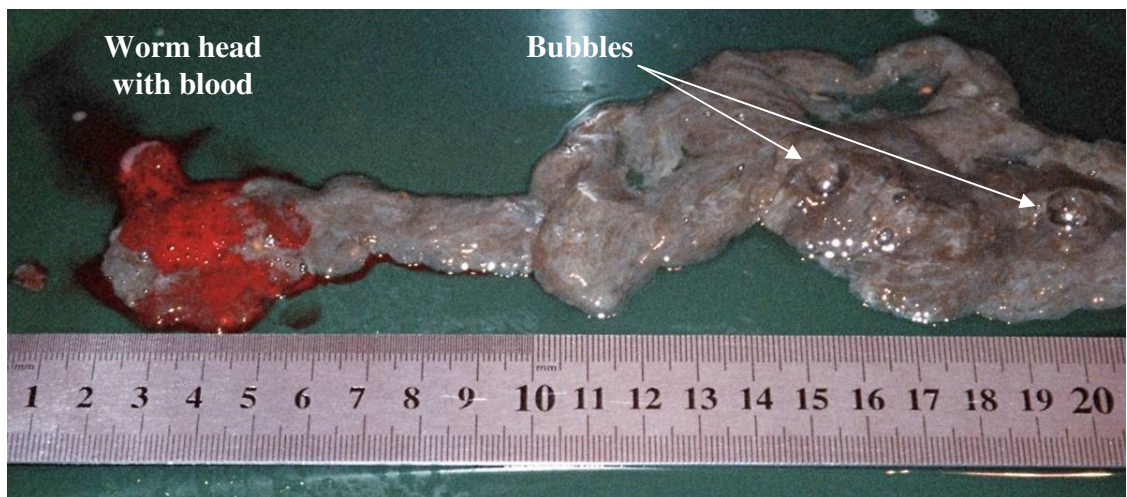
- 1) Rope parasites attach to intestines with suction cups/heads;
- 2) Adult rope parasites reach over a meter in length, exceeding a typical length of the fecal contents;

- 3) Rope parasites move by emitting bubbles utilizing jet propulsion;
- 4) Rope parasites twist like a corkscrew and can completely block the lumen of the intestine;
- 5) Rope parasites form larger gas bubbles, which develop into suction cups.

The fifth adult stage can be driven away by enemas with eucalyptus decoction with several drops of eucalyptus oil, followed by the freshly squeezed lemon juice enema (Gubarev et. al. 2007).

### **Rope parasite 4<sup>th</sup> stage**

The fourth stage looks similar to the 5<sup>th</sup> adult stage, but the parasite has softer slimier body (Figure 2). Both 5<sup>th</sup> and 4<sup>th</sup> stages can feed on blood. The can emit bubbles to form future attachment heads, as seen in Figure 2. Similar to the 5<sup>th</sup> stage, the same eucalyptus/lemon juice enemas get rid of the 4<sup>th</sup> parasite stage (Gubarev et. al. 2007). Special care should be taken during the dehilminthation procedure, as open wounds are left on the inner side of the intestines, causing internal bleeding (see Figure 2).



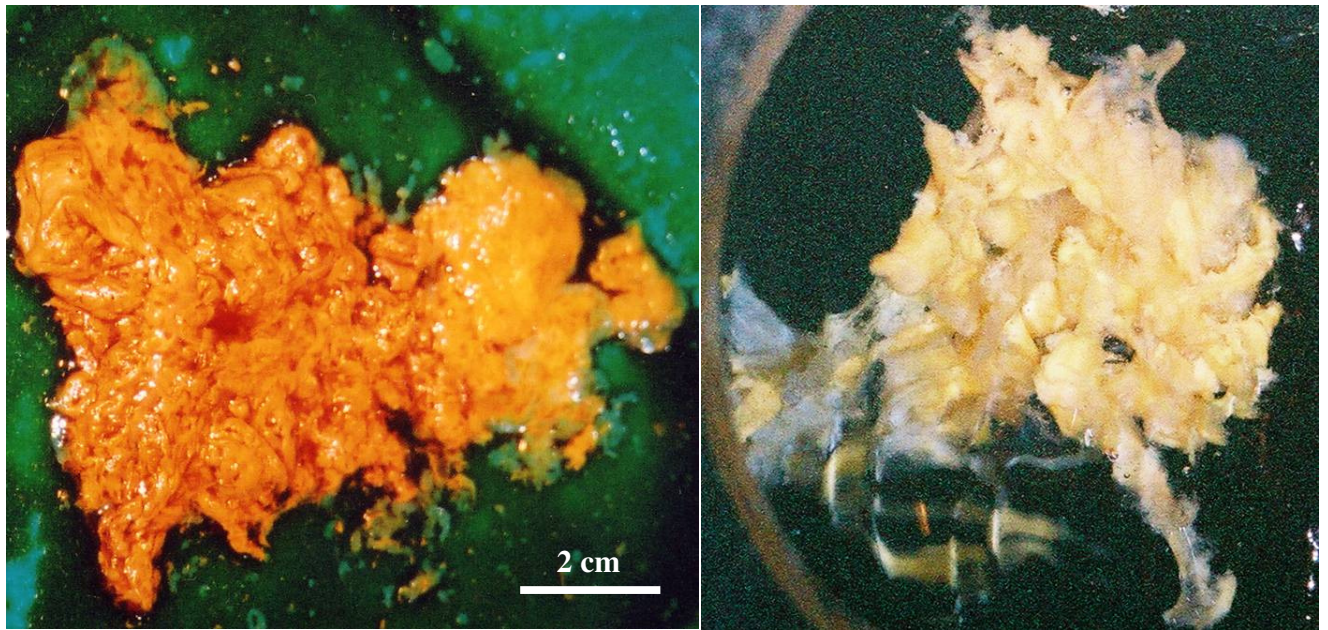
**Figure 2. Rope parasite head covered with blood with multiple bubbles on the worm body.**

### **Branched jellyfish 3<sup>rd</sup> stage**

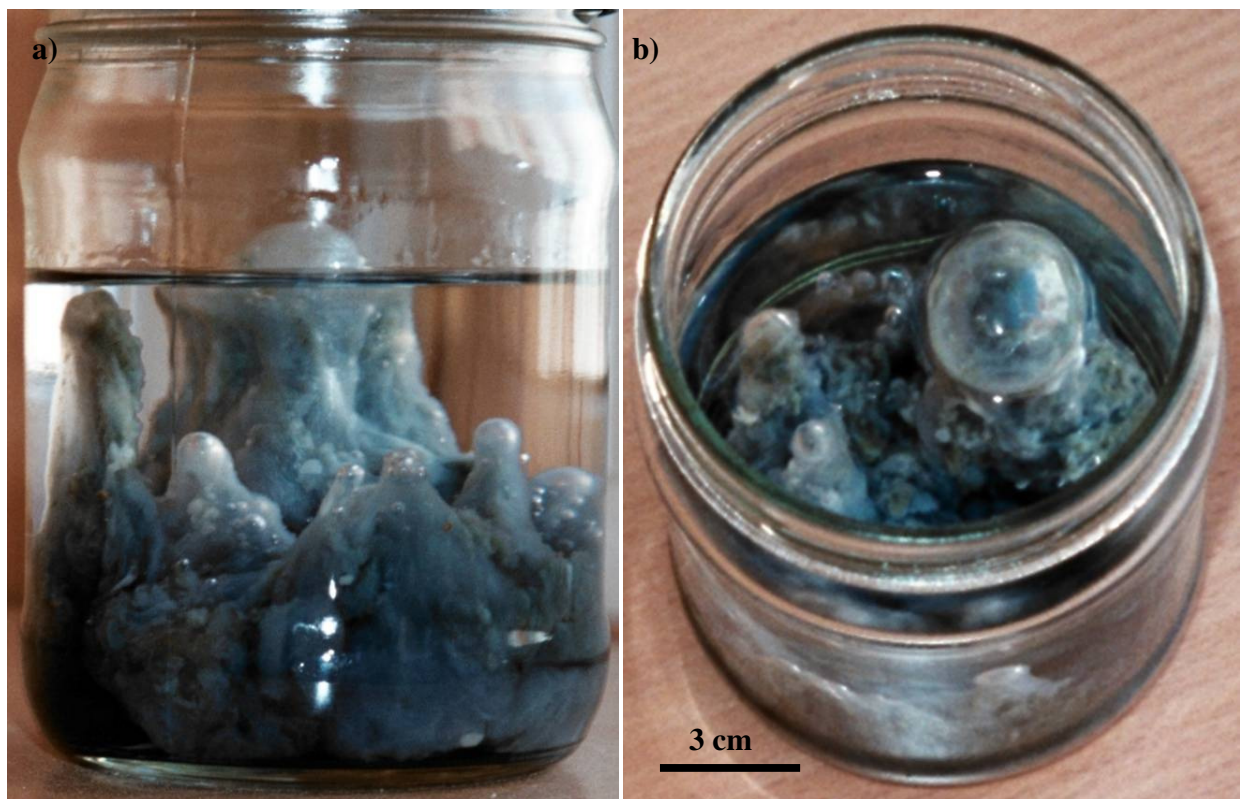
The third stage looks like branched jellyfish, shown in Figure 3. Dehilminthation method includes enemas with soda (Gubarev et. al. 2006).

### **Viscous mucus with bubbles 2<sup>nd</sup> stage**

The second stage resembles slimy viscous mucus, and emits bubbles, which are later used as attachment points (Volinsky et. al. 2013). This stage leaves the human body with salt milk enemas (Gubarev et. al. 2007).



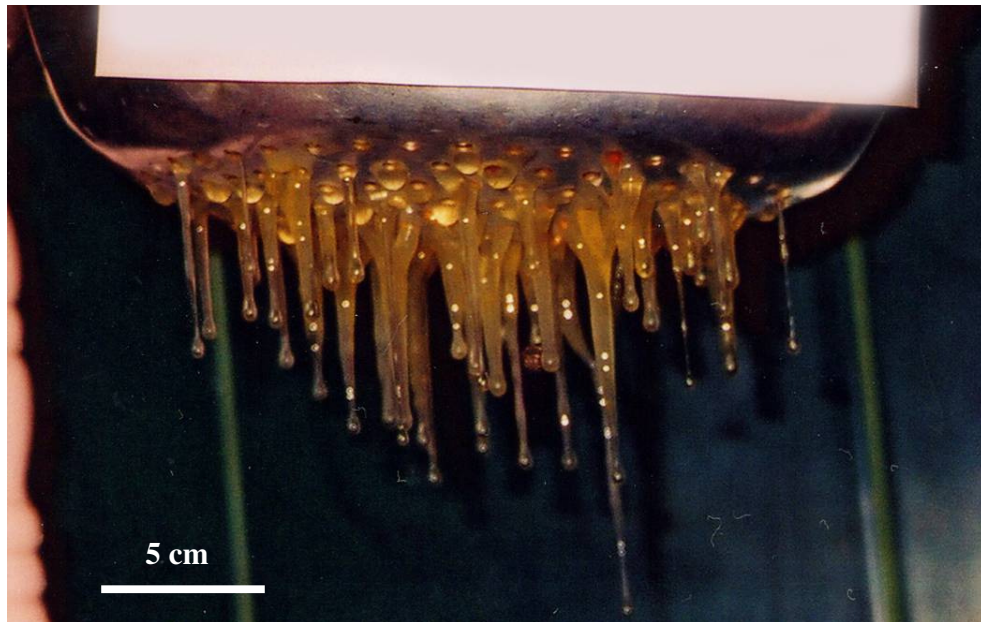
**Figure 3. Branched jellyfish 3<sup>rd</sup> stage of the rope parasite development.**



**Figure 4. Viscous mucus with bubbles 2<sup>nd</sup> development stage: a) side view; b) top view.**

### **Viscous mucus 1<sup>st</sup> development stage**

The first stage of the rope parasites is mucus. It can be hosted almost anywhere in the human body. Similar to the second stage, salted milk enemas aid their release (Gubarev et. al. 2009).



**Figure 5. Viscous mucus, the first development stage of the rope parasites, hanging from the colander holes.**

### **Toxic slime and fecal stones**

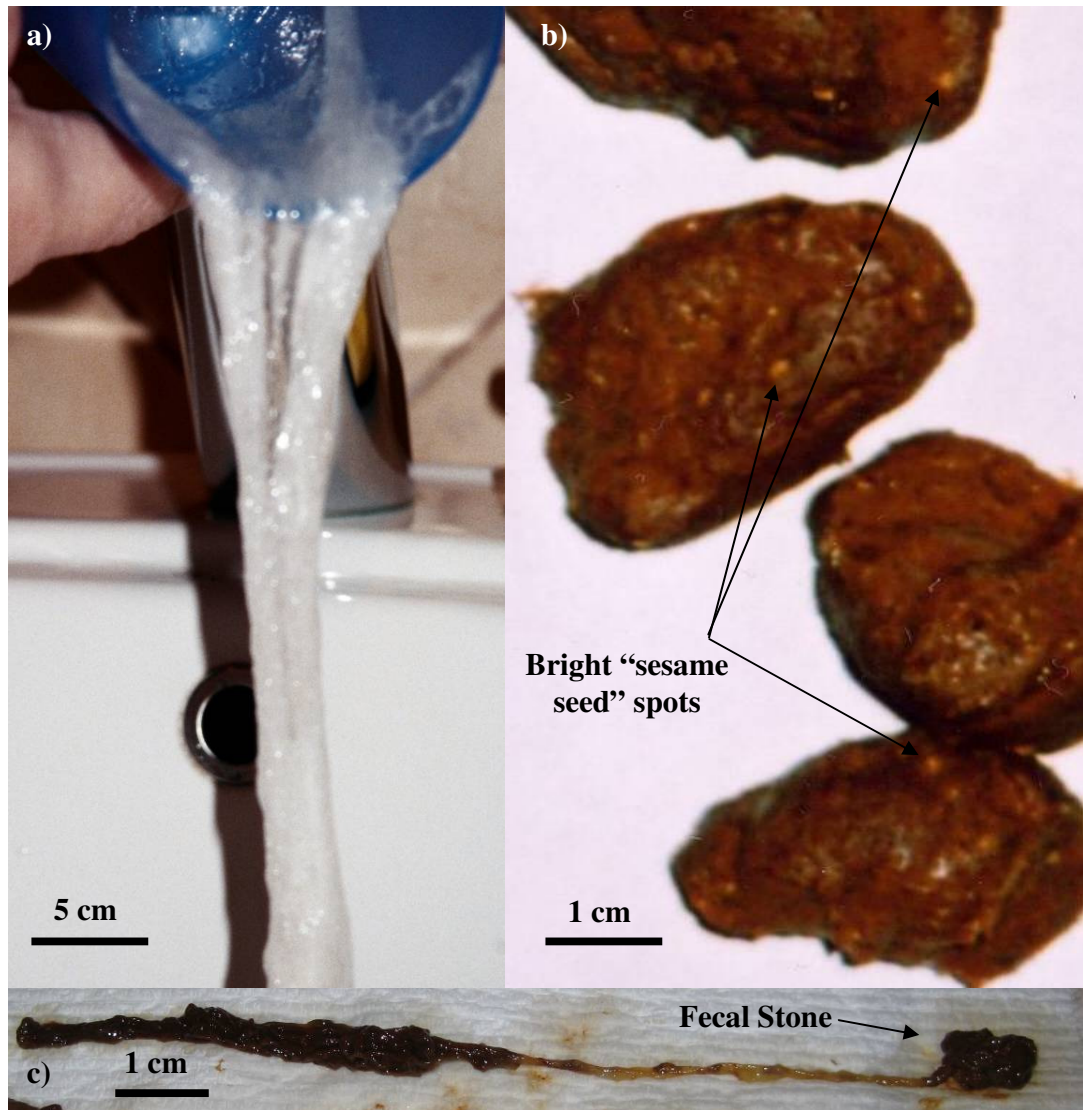
Rope parasites (stage 5) are also capable of producing toxic slime seen in Figure 6a. This happens when they are irritated by spicy food, heat or cold, etc. Adult rope parasites also produce fecal stones, seen in Figure 6a and b. Fecal stones clearly have bright spots, which resemble sesame seeds, seen in Figure 6b. All fecal stones collected from different people had these features. Fecal stones leave intestines with water enemas with small amounts of vinegar. Figure 6c shows an adult rope parasite with the fecal stone attached to it. At this point it's not clear what the function of the fecal stones is, which could be reproductive or simply future food source storage.

### **Discussion**

The first attempts to describe the structure of the adult rope parasites, based on optical microscopy, revealed that they have multiple microchannels filled with gas bubbles (Volinsky et. al. 2013). The parasite body is formed of the cells that resemble scales. The authors are in the process of obtaining scanning electron microscopy images to better understand the rope parasite structure. DNA barcoding is also in progress to prove to the parasitology community that this is in fact a newly discovered parasite.

The rope parasites have not been discovered previously for the following reasons:

- 1) Rope parasites take tens of years to develop into the 5<sup>th</sup> stage that resembles a helminth;
- 2) Rope parasites rarely come out as whole fully developed adult species;
- 3) Rope parasites look like human excrements, which they are often mistaken for;
- 4) Rope parasites don't move outside the human body in air;
- 5) Rope parasites are often mistaken for lining of the intestines.



**Figure 6. a) Toxic slime produced by the rope parasites; b) fecal stones produced by the rope parasites; c) adult rope parasite producing a fecal stone.**

## Conclusions

The five stages of the human anaerobic parasite, called the rope parasite (*funis parasitus* in Latib) have been described. The currently known dehimnimthation methods include enemas with milk and salt, soda, eucalyptus, followed by the freshly squeezed lemon juice. Rope parasites can feed on human blood, thus special care should be taken upon dehilminthation to avoid internal bleeding.

## References

- Grove D.I., 1990. A history of human helminthology. Oxford University Press, Wallingford, pp. 1-33.
- Gubarev N.V., Gubarev A.V., Orlovskaya L.P., Orlovskaya G.M., Pakulina O.N., 2006. Method of human dehilminthation/Sposob izgnaniya gelmintov iz organizma cheloveka, Russian Federation Patent RU (11) 228110.
- Gubarev N.V., Gubarev A.V., Lebedev S.A., Orlovskaya L.P., Orlovskaya G.M., Pakulina O.N. 2007. Method of human dehilminthation/Sposob izgnaniya gelmintov iz organizma cheloveka, Russian Federation Patent RU2270688.
- Gubarev N.V., Lebedev S.A., Orlovskaya L.P., Pakulina O.N., 2007. Method of human dehilminthation/Sposob izgnaniya gelmintov iz organizma cheloveka, Russian Federation Patent RU2250111.
- Gubarev N.V., 2009. Helminths known and....unknown/Gelminty izvestnye i...neizvestnye, Special Literature, First Class Publishing, St. Petersburg (In Russian).
- Volinsky A.A., Gubarev N.V., Orlovskaya G.M., Marchenko E.V., 2013, Human anaerobic intestinal “rope” parasites, arXiv:1301.0953, <http://arxiv.org/abs/1301.0953>, Submitted January 5th, 2013.
- Watkins W.E., Pollitt E., 1997. 'Stupidity or worms': Do intestinal worms impair mental performance?. Psychological Bull. 121(2), 171-91.
- World development report 1993: Investing in health, 1993. Published for the World Bank, Oxford University Press, p. 79.