SCIENCE MISCELLANY & FORENSIC FILLIPS

COMPARISON OF ALLEGED "YETI" HAIR WITH KNOWN ANIMAL FAMILIES

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INTRODUCTION

From time to time in past years, the Vancouver Hair and Fibre section has been called upon to examine unknown hair reportedly from the Sasquatch which, according to legend, roams the wilderness areas of British Columbia as well as Washington, Oregon and California. The hairs previously submitted were found to be generally indicative of bear family origin.

In March, 1975 I received a sample of five hairs from a member of the Biological Sciences Department at Simon Fraser University, Burnaby, B.C. He had been travelling in Tibet in 1974 and had obtained these hairs from the supposed scalp of a "Yeti" or "Abominable Snowman" (an Asian relative of the Sasquatch). This scalp is kept in the Khumjung Monastery and is shown in photograph 1. (See series of photographs following the article).

Also called "Bearman", the "Yeti" or "Abominable Snowman" is a "mythical monster" supposed to inhabit the Himalayas at about the level of the snowline. No one has ever seen an "Abominable Snowman" alive or dead, but certain marks found in the snow have been attributed to it(1). The theory is that the marks are caused by falling rocks, lumps of snow or bears.

> "At certain gaits bears place the hind foot partly over the imprint of the forefoot, thus making a very large imprint that looks deceitfully like an enormous human footprint travelling in the opposite direction".(1)

This paper is not meant to prove or disprove the existence of such a creature, but to attempt to identify the species origin of the five hairs removed from the "Yeti" scalp.

MATERIALS AND METHODS

The standard methods of the Hair and Fibre Section were used in the preparation and observation of the unknown and comparison hairs. Whole mounts, cross sections and scale impressions of the unknown hairs were examined and compared to those of known animal families. Photomicrographs were taken using Polaroid Polapan 4 × 5 Type 52 Land Film and Kodak Vericolour II Type L 4 × 5 sheet film.

The five unknown hairs received were as follows:

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a) two complete hairs ie: root and tip present.
b) one hair with the tip broken off.
c) two hairs with the roots broken off.

Extensive examination and photography were conducted on the two complete hairs. Portions of the two hairs from (c) above were used for cross sections and the hair from (b) was used for scale impressions before it was whole mounted.

Comparison samples of hair were obtained from the following:

a) Himalayan Black Bear — Woodland Park Zoological Gardens, Seattle, Washington.
b) European Ibex — Alberta Game Farm, Sherwood Park, Alberta.
c) Serow — Los Angeles Zoo, Los Angeles, California.

RESULTS AND CONCLUSIONS

A. *Whole Mount*

The two complete hairs measured 9.5 and 8.2 centimeters in length. The roots of the hairs are arrowhead shaped with a diameter range of 200 to 210μ. Adjacent to the root the shaft narrows (150μ) and then widens (225-250μ). The medulla begins in the first centimeter of the shaft and widens rapidly. The medulla is continuous dark in the root area while the shaft is yellow in colour with thin, fairly smooth cuticle and powderlike streaky pigment (Photograph 2).

In the midshaft portion of the hairs the medulla remains continuous dark with translucent areas also present. The translucent medulla shows a cellular structure (Photograph 3). The colouration is yellow which becomes orange-red and medium rust. The pigment granules are powderlike and streaky with a scattered few coarse granules also present (Photograph 4). The cuticle remains thin and fairly smooth. The diameter range in the midshaft is 190 to 250μ. The range of medullary index is 0.44 to 0.67.

Nearing the tip of the hair, the colour becomes a dark red brown and the pigmentation consists of medium sized pigment granules with a streaky distribution as well as the powderlike granules (Photograph 5). The cuticle remains thin and fairly smooth but there are areas were the shaft is ragged. The medulla ends within the last centimeter of the hairs. The tips are eroded. One of the complete hairs and one tip fragment show tapering toward the tip while the remaining complete hair and tip fragment show no taper.

B. *Cross Section*

The hairs are oval on cross section with the medulla also roughly oval shaped (Photograph 6). As seen in the photograph the pigment in these sections shows no constant pattern of concentration.

C. *Scale Pattern*

The scale pattern adjacent to the root is type VI(2) (Photograph 7) while the midshaft scale pattern is type VII(2) (Photograph 8).

The characteristics of the hairs in whole mount, cross section and scale pattern overwhelmingly indicate that the unknown hair is of animal origin rather than human or human-like origin. The hairs were then compared to other animal families.

When the unknown hairs were compared to our animal hair standards, the characteristics of hairs from animals of the BOVIDAE family bore the closest similarity to the unknown hairs.

A set of comparison photographs of the hair from the Serow indicates similarities to the unknown "Yeti"

hair. (Photographs 9, 10, 11, 12, 13 and 14). The pigmentation, internal medullary characteristics, cross section and scale types all show similarities. The range of medullary index in the Serow hair is 0.59 to 0.73. The Ibex hair also shows the cellular type of medulla (Photograph 15).

The hair from the Himalayan Black Bear as well as hair from other members of the bear family did not show the same type of internal characteristics as the unknown hair. Whole mount comparisons with other animal families did not show as many distinct similarities as the BOVIDAE family. Therefore the hairs removed from the "Yeti" scalp are most indicative of BOVIDAE family origin.

DISCUSSION

The main problem with this project was obtaining standard hair from enough animals native to the Himalayan area; so at best, this is a superficial attempt to identify this hair. Zoo specimens of some of these animals are available, but these animals cannot be approached to obtain hair unless they are being handled for some other reason. I feel that if specimens of hair from the other animals could have been obtained, then the actual type of animal from which the hair originated may have been established. These hairs will now join the scores of others which reportedly originated from our legendary Sasquatch and will be used for comparison purposes when we receive more hair from such unknown mysterious sources.

Fig. 1. Yeti Scalp

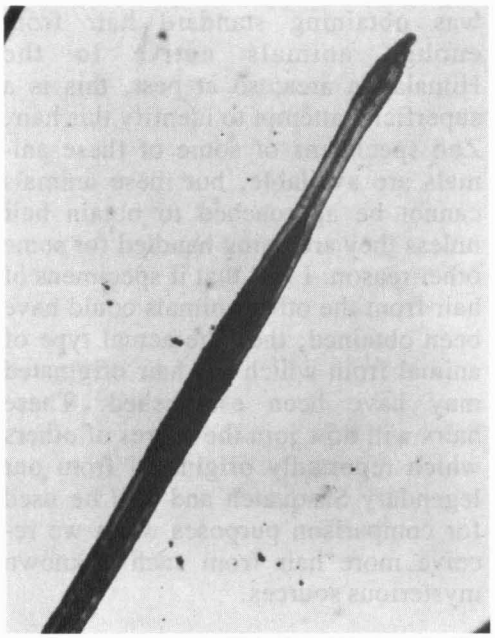

Fig. 2. Yeti-Root Area

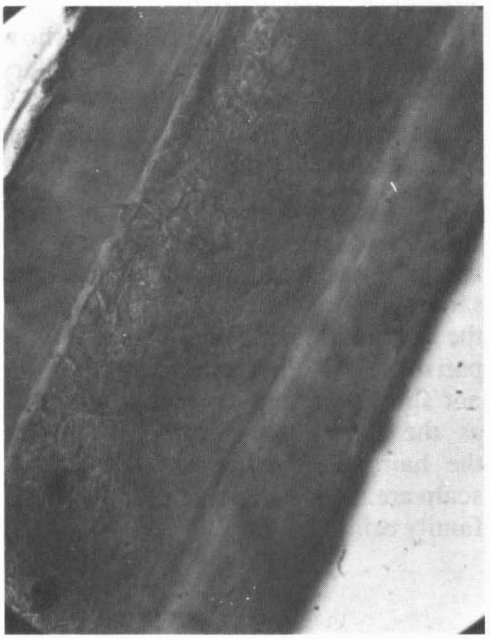

Fig. 3. Yeti — Structure of Medulla

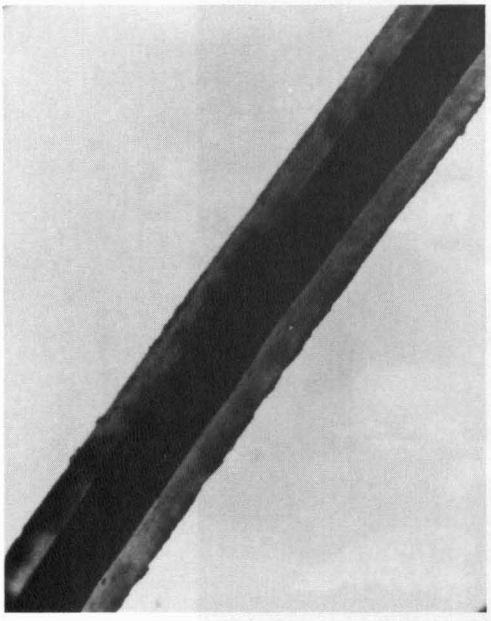

Fig. 4. Yeti — Midshaft Pigmentation

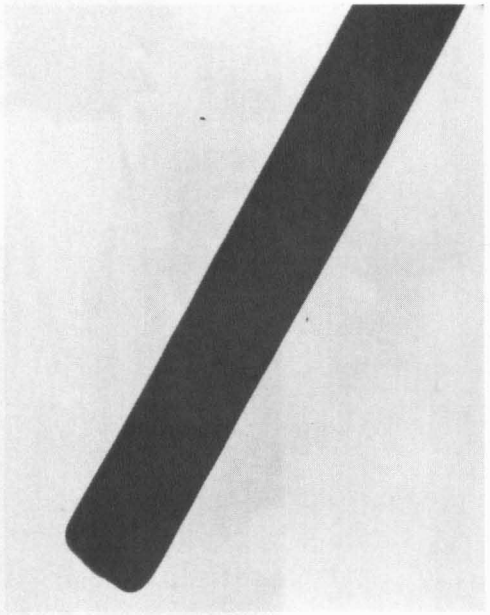

Fig. 5. Yeti — Tip

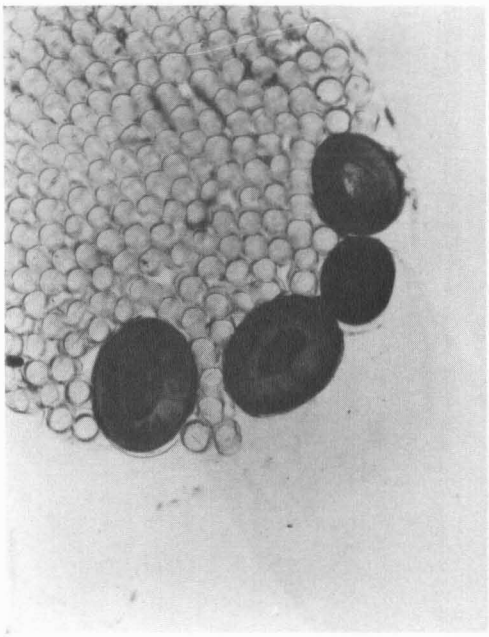

Fig. 6. Yeti — Cross Sections

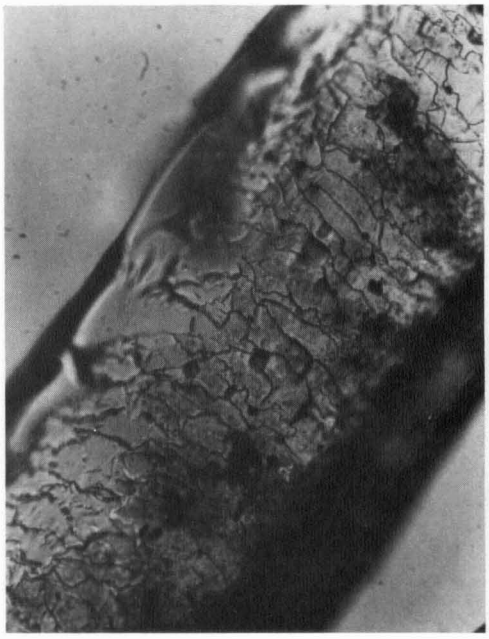

Fig. 7. Yeti — Scales Adjacent to Root

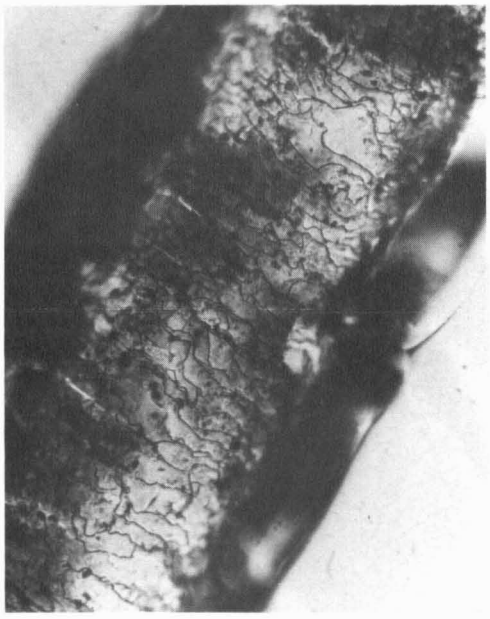

Fig. 8. Yeti — Scales Midshaft

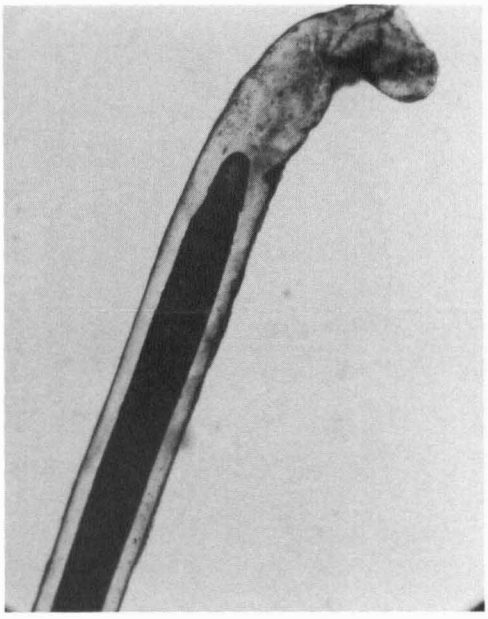

Fig. 9. Serow — Root

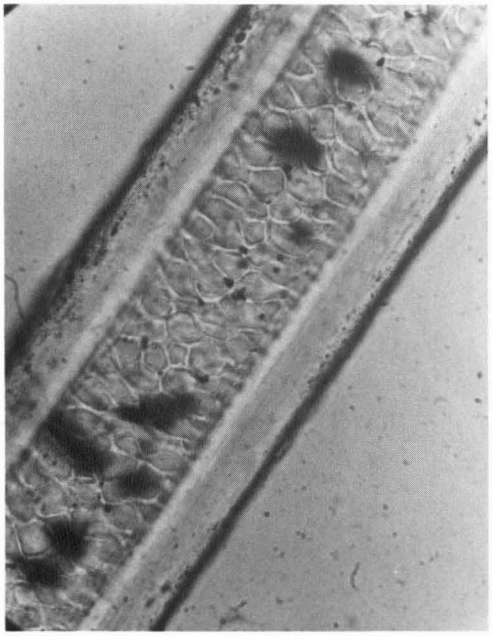

Fig. 10. Serow — Structure of Medulla

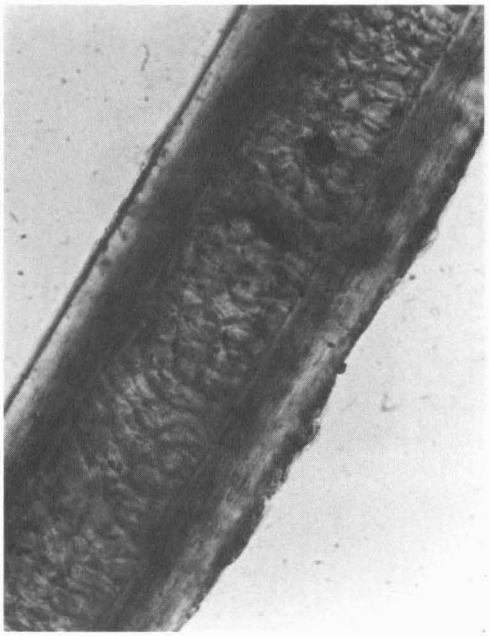

Fig. 11. Serow — Pigmentation and Structure of Medulla

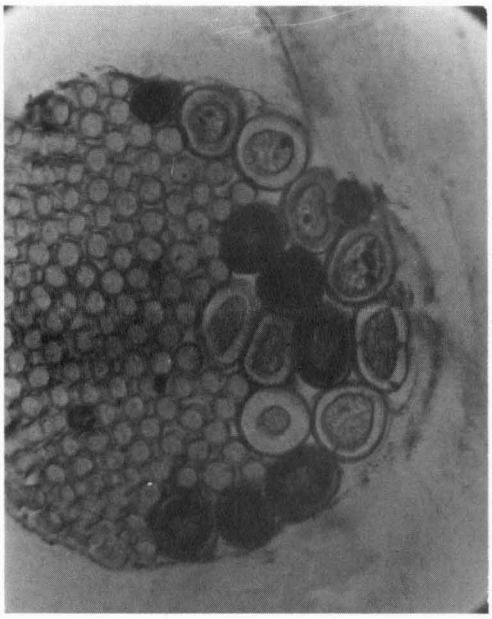

Fig. 12. Serow — Cross Sections

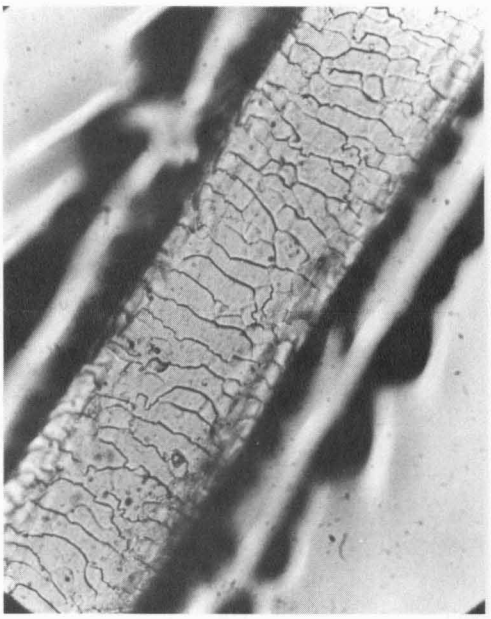

Fig. 13. Serow — Scales Adjacent to Root

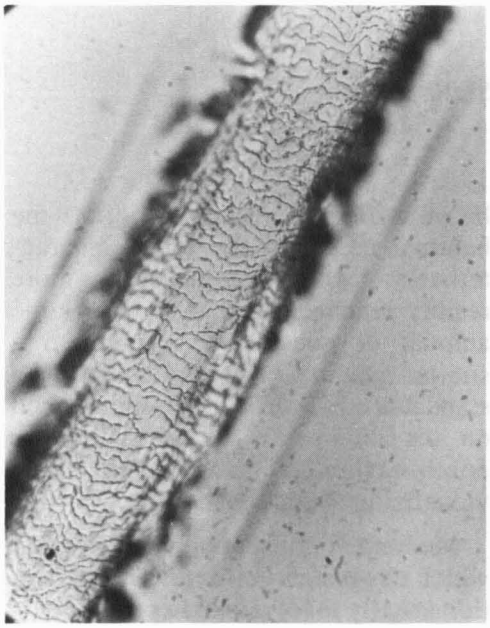

Fig. 14. Serow — Scales Midshaft

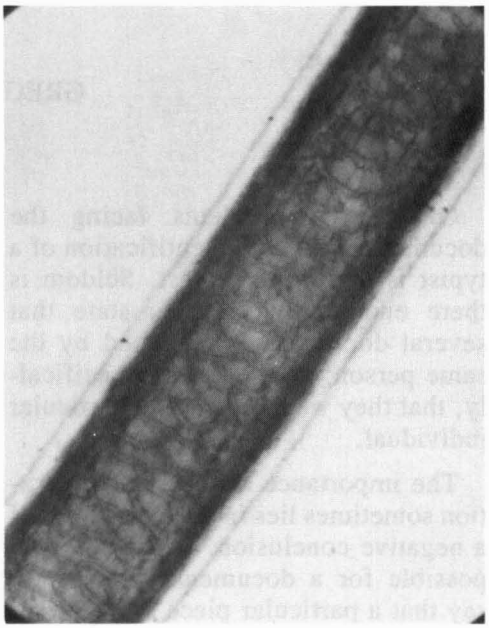

Fig. 15. Ibex — Structure of Medulla

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2. Recent Advances in Forensic Medicine by Sydney Smith and John Glaister. 2nd Edition. P. Blakiston's Son and Co. Inc. 1939.