Three authors, two from the Soviet Union and one from Canada, present the results of an analysis of the famous 1967 film by Roger Patterson, made in the presence of his friend, Robert Gimlin. While most of the scientific community ignored or downplayed the significance of this movie, those who have seriously studied it are seemingly all in agreement that it actually represents a real Sasquatch. The authors describe here much of the reasoning and observations that convinced them, and several Soviet experts, of the film's validity.

Their study showed the actual filming speed to have been 16 frames per second, rather than 24 frames per second (Patterson did not remember). This confirms the observation of Grover Krantz that the scowex 16 FPS gives the arms and legs a natural, "pendulum," swing while the faster speed is unnaturally jerky and perhaps impossible.

Many more details of the posture and movements agree remarkably with the observed size and proportions of the subject. Their conclusion is simply that the film is consistent in what it purports to show, and would be totally inconsistent with any form of fakery.

One might add that if the film were faked, it is curious that Patterson (and Gimlin who had to be involved) did not produce more. If he had the appropriate suit and the large man, he could have earned so much more money and drawn major medical attention himself. Instead, he spent most of his fortune on further investigations, then died of Hodgkin's Disease.

This article should be read in conjunction with the author's other article, "Eyewitness Reports and Footprints: an Analysis of Sasquatch Data." The two were submitted as a single item, but were separated by the editor for this book.

# ANALYSIS OF THE PATTERSON-GIMLIN FILM, WHY WE FIND IT AUTHENTIC

by
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## *Introduction*

Our knowledge of the present-day existence of relic hominoids is based on three kinds of evidence:

1. Eyewitness reports;
2. Hominoid footprints;
3. The Patterson-Gimlin film.

The three kinds of evidence are considered by us not in isolation but in connection with the historical data on the relic hominoids and are interpreted in the light of the theoretical concepts of Professor B.F. Porshnev (1974:449-456) and Bayanov and Bourtsev (1976:312-318).

Some say the Patterson-Gimlin film is of no significance since we don't physically possess what is portrayed in it. This argument seems invalid to us. Do the close-ups of the surface of Mars or Venus lose value because man has not yet touched samples of rock from these planets? Or, citing a strictly earthly example, does a film showing a suspect on the scene of a crime become less important because the suspect is still at large?

Undoubtedly, the film is of the greatest importance to science, on condition of its authenticity, and that is why we deem it imperative to establish the truth in this matter. (See Plate 13)

Shot in 1967, and thanks to the efforts of René Dahinden, the film has been studied and found authentic in the Soviet Union by Bayanov, Bourtsev and Donskoy (Hunter and Dahinden 1973). Dr. Don Grieve has expressed the impression of some scientists who have seen the film:

> My subjective impressions have oscillated between total acceptance of the Sasquatch on the ground that the film would be difficult to fake, to one of irrational rejection based on an emotional response to the possibility that the Sasquatch actually exists. This

***A Frame From the Patterson-Gimlin Film***

**Plate 13**

seems worth stating because others have reacted similarly to the film (Napier 1973:220).

The photographic evidence, as is known, may exist in two forms: in the form of snapshots and in the form of a movie. To take a good picture of Sasquatch you have to be close enough to the creature, lighting conditions should be favorable enough and the hand must be steady enough—all of which have a very low probability of occurrence.

Not so with a movie camera. What is more, a movie image of the Sasquatch can show how the creature moves about, which random snapshots cannot do.

To test the film we have to examine it in three aspects:

1. The footage itself from a technical point of view.
2. The subject it shows from a morphological point of view.
3. The subject's movements from a biomechanical point of view.

### *Technical Characteristics of the Movie Footage*

It is a 16 mm color filmstrip, 715 cm long in the part showing the scene in question, which numbers 951 frames, most of which contain the image of the creature under discussion.

No "special effects" have been detected in the film; that is to say it shows what actually happened in front of the camera. The footage was shot without a break from the moment the creature appeared on film and to the end of the roll.

Good frames alternate with not so good ones and in some the view is blurred altogether. According to Patterson, he shot part of the film while pursuing, and, indeed, in part of the movie objects of the scenery, such as trees and logs, appear and disappear in a consecutive order, showing that the film-maker was moving along.

In many frames the image is in good focus. The movie was shot with an ordinary lens and the camera was never near enough to the filmed subject for a close-up. Photographed at a distance of 40 m at the nearest, the creature left a 1.2 image on film which loses sharpness when blown up the size of a screen for the mere reason of enormous enlargement.

Nonetheless, an attentive observer can discern a surprisingly great number of details in the film's subject. Even a more detailed portrait of the creature than can be seen on the screen was obtained by us through printing the frames on photographic paper with different characteristics.

One can be of two minds regarding the implication of the photographic quality of the Patterson film. On the other hand, if the first documentary of a purported Sasquatch were of the quality of a feature film shot in a studio, it would elicit nothing but distrust.

*Framing speed of the movie.* The exact knowledge of this characteristic is necessary for judging the speed of movement of the film's subject. Patterson told John Green that the film must have been shot at 16 frames per second but he was not absolutely sure. To our mind, there is nothing suspicious in that, being an amateur photographer and in the heat of the event, Patterson did not make sure what speed he used in filming, while his avowal of this definitely speaks in his favor.

The speed of the subject's movements is such an essential characteristic so that, regardless of Patterson's word, it demanded an objective evaluation. In solving this problem we were guided by the following idea: when Patterson pursued the creature, his hand-held camera must have made vertical oscillations in rhythm with his steps and, since the camera was shooting all the time, these oscillations must have affected the film. The frequency of these oscillations must correspond to the frequency of Patterson's steps. If we can find this frequency in the film, we will know the frequency of Patterson's steps and, since the possibilities of human performance in this respect are well known to the discipline of biomechanics, Patterson's own speed can be used as a standard to judge the speed of his camera. To find and study the said oscillation in the film each frame was viewed on a screen with a network of coordinate lines on it, allowing the fixing of the position of an object (a twig, for example) in the foreground of the frame.

A detailed study of the frames with this technique made it possible to draw up diagrams of alterations in the position of objects in the frames which revealed vertical oscillations in that part of the film which was shot on the move. The frequency of these oscillations was found to be in the range of one per four frames to one per seven frames. As to horizontal oscillations, these were not found in any regular pattern.

The inference from this is that the more frequent oscillations (one per four frames) correspond to Patterson's running, while the less frequent ones (one per seven frames) were caused by his walking. Finally, an absence of oscillations in a certain part of the footage indicates that it was shot from a standing position. If the movie was shot at 16 frames per second (fps), then in running

Patterson made four steps per second (sps) (16:4) which compares favorably with the sprinter's frequency of 4.3 sps. In walking Patterson must have made 2.3 steps per second (16:7) which is a little faster than the norm for walking (2 sps) and below the figure for long distance running (2.8 sps).

If we suppose that the movie was shot at 24 fps, then in running Patterson must have made six steps per second (24:4) which exceeds the sprinter's performance and therefore has to be definitely excluded.

Thus is has been established that the framing speed of the Patterson movie was indeed 16 fps. In solving this important problem Patterson's oft regretted filming on the run turned out to be a blessing in disguise.

### *Morphology of the Creature Shown in the Film*

*General appearance*. "Roger Patterson's filmstrip shows a hairy man-like creature, walking erect, having well developed breasts and buttocks. The last three points. . .indicate that it belongs to the Hominid, not the Pongid (apes) line of evolution of higher primates" (Hunter and Dahinden 1973:173). This is also the opinion of Dr. Osman Hill, Director of Yerkes Regional Primate Research Center: "The creature portrayed is a primate and clearly hominid rather than pongid" (Sanderson 1968:29).

*Body size and weight*. To determine the creature's size we used the formula $H/L=h/f$, where H is the height of the creature, L is the distance between the creature and the camera, h is the height of the creature's image on film in a certain frame, and f is the focal length of the camera. But first the place of the camera on the filming site had to be established for that particular frame, which was done with the help of the same formula and the measurements of distances obtained by René Dahinden on the filming site.

According to our calculations, the nearest point of the camera to the creature was at a distance of 40-42 m; the image on film shot from that distance was a height of 1.2 mm; the focal length of the camera lens used by Patterson, as established by Dahinden, was 25 mm. Using these figures in the formula we find the creature's height to be 190 cm. If we take into account the fact that the creature is photographed in a forward-leaning stance with its legs bent, we can suppose it reaches a height of 200 cm when straightened up as much as its anatomy can allow.

A height of 190-200 cm is in agreement with the figures received by other investigators using different methods of computation: 200

cm, (Green 1968:73) or 196 cm. (Grieve in Napier 1973:94) and corresponds to the creature's stride length of 106 cm as measured by Patterson and Gimlin on the sandbar where tracks were found, for in certain frames the stride length appears to be approximately half as long as the creature's height.

All investigators note the unusual breadth of the creature, which we estimate to be 40% greater than the average for a man of that height. Using average data for human beings we calculate the weight of a man 200 cm high and 40% broader than average to be in the vicinity of 220 kg. Since the film creature's shoulders are higher than a man's and it has a barrel-like torso, its weight is expected to be in excess of that figure.

And now to some details of the subject's morphology.

*The face.* "The movie is not sharp enough to show facial detail. . ." wrote John Green (1968:52). This was only true until 1973 when the best frame, number 344, showing the creature's profile was "discovered" in Moscow by printing the stills on photographic paper of suitable characteristics (Bayanov and Bourtsev 1976:40)

Frame 344 gave us a quite detailed view of the face, almost in profile, with its low forehead and protruding brow ridge, a black hole of the right eye socket, a wide nose with a low bridge, the jutting jaws with a thin line of the mouth and a heavy chinless mandible. Also in relief are the right cheekbone (os zygomaticum) and the powerful chewing muscle (musculus masseter). The ear is not clearly in view being covered with hair which forms a bulge at the place where the ear should be. The rest of the face is either hairless or covered with such short hair that it does not conceal the features.

It follows from the above that the face has all the classic features of a pre*sapiens* hominid. What is more, the profile gives a good idea of the relation in size between the facial part and the brain part of the skull in the sagittal plane, and this proportion is of a definitely non-human i.e., pre*sapiens* character, though not as different from human as in apes.

At the same time the creature's portrait perfectly fits the eyewitness descriptions.

On the whole, we learned from frame 344 that the subject's face is more human than simian, whereas prior to the discovery of this frame all the investigators had the impression from the film that the creature's face was more ape-like than human-like, which seemed to contradict the extent of human qualities in the other part of the creature's anatomy.

Finally, a few words are in order concerning the light this episode sheds on Patterson's role in the whole affair. In our analysis we employ an objective approach, as befits science; that is, we examine the objective qualities of the film, regardless of its authorship. Strictly speaking, the latter cannot be ascertained in an objective manner, and we accept Patterson's authorship simply because we have no reason to doubt his and Gimlin's word plus there are no claims from other people in this respect. We have as yet to present other objective arguments for the authenticity of the film, but to counter William Montagna's (1976:7-9) charge that "Patterson and friends perpetrated a hoax," we can offer at this juncture an argument of a psychological nature. Patterson died in 1972, while the best frame from his film, showing the face of the filmed creature in a true light, became known to investigators in 1973. If we are to believe Montagna, that Patterson was able to perpetrate a hoax of that complexity, is it conceivable that he would have failed to his death to present the best frame of his film which could have explained away a contradiction exploited by the movie's critics?

*The legs.* These, apart from their hair covering, appear to be human in shape and proportions though, of course, very big and massive in an absolute sense. What is really different from human is the character of their movements in locomotion which we shall discuss in the next section. Still, there is at least one difference from human anatomy which is of paramount importance. In a certain phase of the stride a bulge is noticeable on the thigh which appears and disappears in a regular fashion and in rhythm with the steps. There can be no doubt the bulge corresponds to the tone of the big thigh muscle—m. rectus femoris—in man, but this muscle in humans never attains such prominence. What is also very significant is that this feature has never been reported by witnesses. And no wonder, for it is noticeable only when viewed at a certain angle, and then it is not such a striking characteristic for a casual observer to behold as, say, an absence of the neck. The significance of this feature will be explained in the next section, when we deal with the specimen's locomotion.

*The feet.* What is telling about the feet is this:

1. The sole is actually seen to be "hourglass" shaped! (see frame 265).
2. There is a hint of an arch in the foot, or at least the sole is not as flat as it appears in footprints (frame 265), corroborating our idea that the Sasquatch foot is less rigid than in man.