The Use of Photography
for Recovery of Northwest Coast Painted Designs

A Report from

The University of British Columbia
Museum of Anthropology

By Mila Cotic

ABSTRACT

At the Museum of Anthropology in Vancouver, British Columbia, experimental photographic techniques are being used to reveal early Northwest Coast designs found on traditional, painted artifacts. These techniques are important in making early Northwest Coast designs accessible for study, and their continuation would make possible the repatriation of Northwest Coast painted designs on artifacts from museums around the world.

For the past several years the U.B.C. Museum of Anthropology has been involved in photographing Northwest Coast painted artifacts with infrared film, as well as developing other photographic techniques to reveal early Northwest Coast painted designs not visible to the naked eye. Infrared photography has been used for many years on European and North American paintings to uncover the layers of paint below their surfaces; however, the use of infrared on Northwest Coast painted artifacts is an exciting new process. For four months during the spring and summer of 1984 a project[1] was carried out at the Museum of Anthropology where Northwest Coast bent wood boxes and other Northwest Coast painted artifacts were photographed with infrared film. One of the box designs was also transferred onto acetate, a process which has isolated the design from the box, making it accessible for study and examination.

Infrared film has been found to be more effective than other types of film in capturing the faded design details of traditional painted Northwest Coast artifacts. This type of film is sensitized to the infrared radiation which "the subject producing the image reflects or transmits... when illuminated with visible light" (Eastman Kodak, 1972:3). In the light spectrum infrared rays are found beyond the red region, in an invisible region where temperatures and

[1]This project, conducted by the author under the supervision of the Museum of Anthropology's designer, Bill McLennan, was funded by the B.C. Heritage Trust Student Employment Program.

wavelengths are greater than those at the opposite end of the spectrum (Gibson, 1978:1-9).

Paints vary in their pigments and mediums, and thus, will absorb, reflect, and transmit infrared radiation in different ways (Eastman Kodak, 1972:53). Different paints will be recorded differently in comparison to one another on infrared film, and will also appear differently on infrared film than on other types of film.

The artifacts photographed for this project consisted of bent wood boxes, bent wood bowls, basketry hats, and a chief's ceremonial seat. They were photographed with a four by five inch camera (240 mm lens) using two photographic lights (tungsten) which illuminated the objects from each side. For all the artifacts except the basketry hats the camera was set up parallel to the subjects and levelled to have as little distortion as possible of the painted designs. When photographing the hats, the camera was tilted downwards towards the subject which caused the least distortion of the designs for these artifacts.

The lights were similar in their floor positions for each object, this being a forty-five degree angle to the camera axis. The vertical angle of illumination on each light, however, was fixed separately for each object depending on which angle best revealed the painted design. No filter was used over the camera lens since previous experiments revealed no difference between using a filter and not using one. After testing various combinations of lens openings and exposure times, an f-stop of 64 with a shutter speed

of four seconds was found to give the best results for the boxes, bowls and chief's seat. The hats were photographed at a lens opening between f 45 and f 64 with a shutter speed of half a second. Kodak's instructions on infrared film suggest that "for best definition take all infrared pictures at the smallest lens opening that conditions permit" (Eastman Kodak, 1980). Photographs of all four sides of each artifact were taken and the negatives were contacted on one eight by ten inch sheet, giving a complete view of all the sections of painted design on a given artifact.

Some of the artifacts were photographed with panchromatic film as well as infrared film. The panchromatic film was used for two different reasons: For a few of the bent wood containers panchromatic film was used as a comparison with infrared film. This film records only visible light; therefore, taking a photograph of a painted object with panchromatic film would show an object as it appears to the naked eye. The infrared film, however, is able to reveal hidden painted designs because, unlike the panchromatic film, it penetrates certain materials, such as the dirts and oils which appear to be the substances covering the painted design on one box, A6335, in the Museum of Anthropology's collection (see figures 1 and 2).

Panchromatic film was also used in a number of cases where the red paints had not photographed well on infrared film. The red paints were quite varied in their reactions on infrared film. This indicates that there are differences in their make-up, in terms of their pigments and mediums, since they seem to be absorbing and reflecting infrared radiation

in different ways. The implication here being that the red paints and thus, the artifacts may originate from different regions of the Northwest Coast.

For two of the boxes photographed neither the infrared nor the panchromatic film gave complete details of the painted designs, especially the red paint (see figures 4 and 5). These boxes were also photographed with Kodalith Ortho film, type 3, which produced a clearer record of the red design details (see figure 6). The films are all useful in that a combination of all three is necessary to produce a complete design for these boxes.

The second phase of this project involved transferring a box design onto acetate. The bent wood box design which was chosen (see figure 2) was the most dramatic example in this project of what infrared film could reveal. As previously stated, the painted design was hidden beneath what appears to be a layer of oil and dirt; it was this recovery of the design along with its innovative and unique nature within the Museum of Anthropology's collection, which made this an exciting discovery. The steps involved in transferring the design included: photographically enlarging all four sides of the box to full scale size, tracing the designs onto acetate sheets with a pencil, "painting" the pigmented areas with a permanent felt marker, and lastly, photographing these traced designs with Kodalith film, using the four by five inch camera. Now it is possible to use these negatives to make photographs of the painted designs which can then be easily studied by interested artists and scholars (see figure

3). Isolating a painted design from the artifact on which it appears is an important step because it enables one to concentrate wholly on the design itself. As Bill McLennan, photographer/graphic designer at the Museum of Anthropology, has noted, "it is difficult to talk in terms of the design elements and what the artist was trying to achieve without being dominated by the work on which the design appears" (Forrest, 1982:18).

Certain information about the artifacts themselves was noted as they were photographed. The tonal quality of the red pigment on all artifacts was recorded since this was found to vary significantly, whereas the black pigment did not. Only a small number of artifacts had the blue pigment, so this quality could not be used as a form of comparison between artifacts. For the bent boxes, details of structure such as kerfing techniques and the carving or knifing characteristics on the inner walls and bottom pieces were also noted. All of these observations may be important clues in attributing art work to different artists and regions of the Northwest Coast, one of the obvious objectives of the study of Northwest Coast design. This is not to say that the cultures to which the artifacts belong are unknown, though for some there is very little data; rather, this is an attempt to begin gathering information which will aid in defining the regional design styles of the Northwest Coast area.

Northwest Coast pieces have been photographed with infrared film on a continuing basis at the Museum of Anthropology. One project initiated by McLennan and dealing

with a collection of Tsimshian House Screen boards[2] involved infrared photography as well as other photographic techniques. Infrared film was only successful in revealing the designs on some of these boards because many of them contained only traces of pigment. McLennan discovered, however, that the original painted design had weathered less than the non-painted wood surface because the paint had served as a protective layer to the wood underneath. This resulted in the original painted design being slightly raised above the non-painted surface. In order to record these designs, McLennan raked light across the surface of the houseboards to bring out the design, and photographed them with orthochromatic (high contrast) film. These techniques were extremely successful, and sections of the Tsimshian Screen designs have been transferred onto acetate (see figures 7 and 8).

It is evident that the photographic techniques being carried out at the University of British Columbia Museum of Anthropology have revealed important pieces of Northwest Coast design, and have prevented them from becoming lost forever. These experimental techniques need to be continued and publicized so that other examples of traditional Northwest Coast design can be recovered and made accessible for study and enjoyment. When more work of this kind is accomplished, design styles and pigment characteristics leading to the regional attribution of artifacts could be accurately defined.

[2]This project was funded by The Explorations Program, Canada Council, and has been described in "Rediscovering a Masterpiece," Heritage West, Fall 1982, Volume 6, Number 3.

This type of work is obviously important for the understanding and revival of Northwest Coast Indian painted design, as well as for the preservation of Northwest Coast Indian heritage. If the photographic techniques described here continue to be developed and expanded throughout the museum world, then the repatriation of Northwest Coast designs could become a reality.

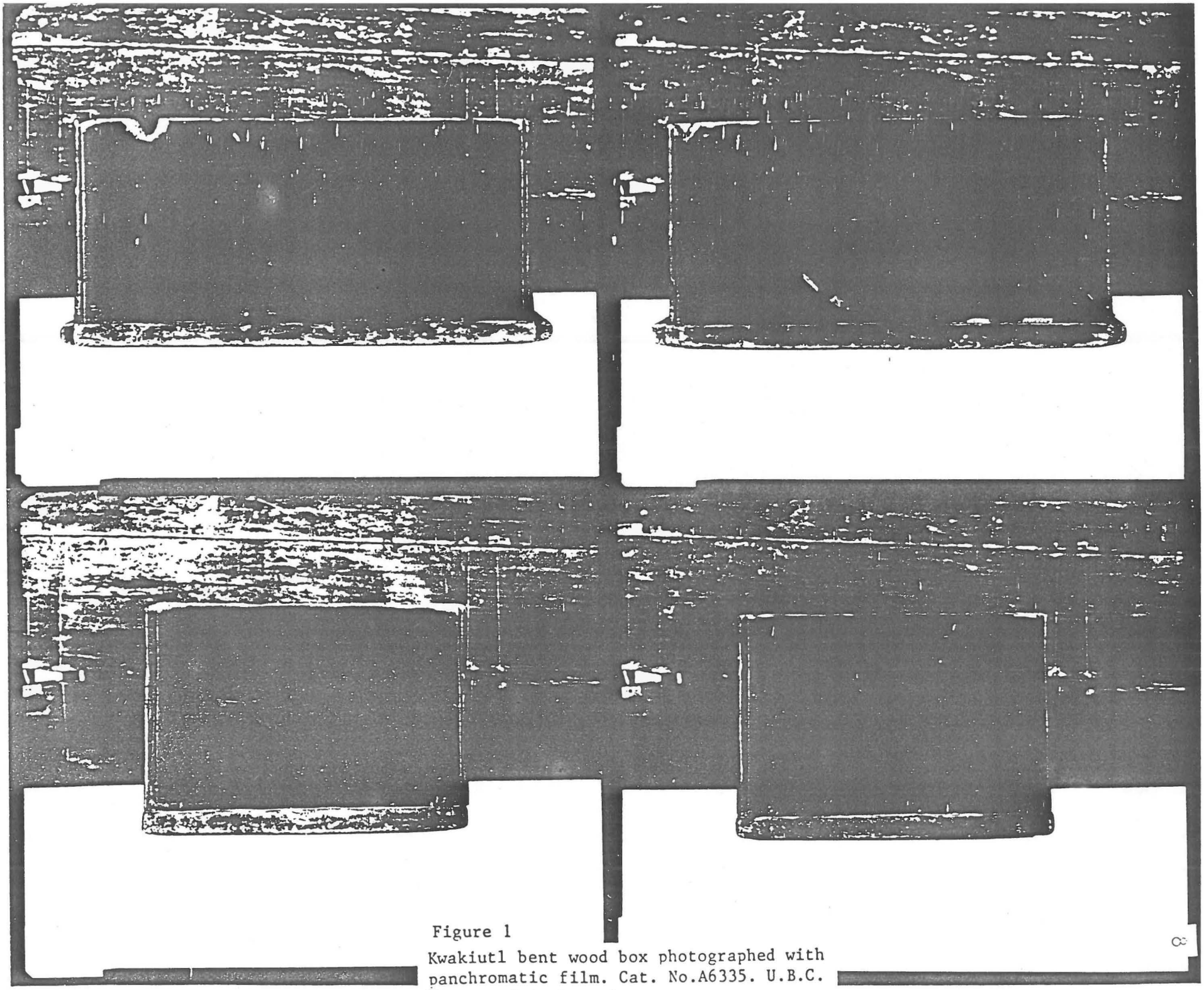

Figure 1

Kwakiutl bent wood box photographed with panchromatic film. Cat. No.A6335. U.B.C. Museum of Anthropology.

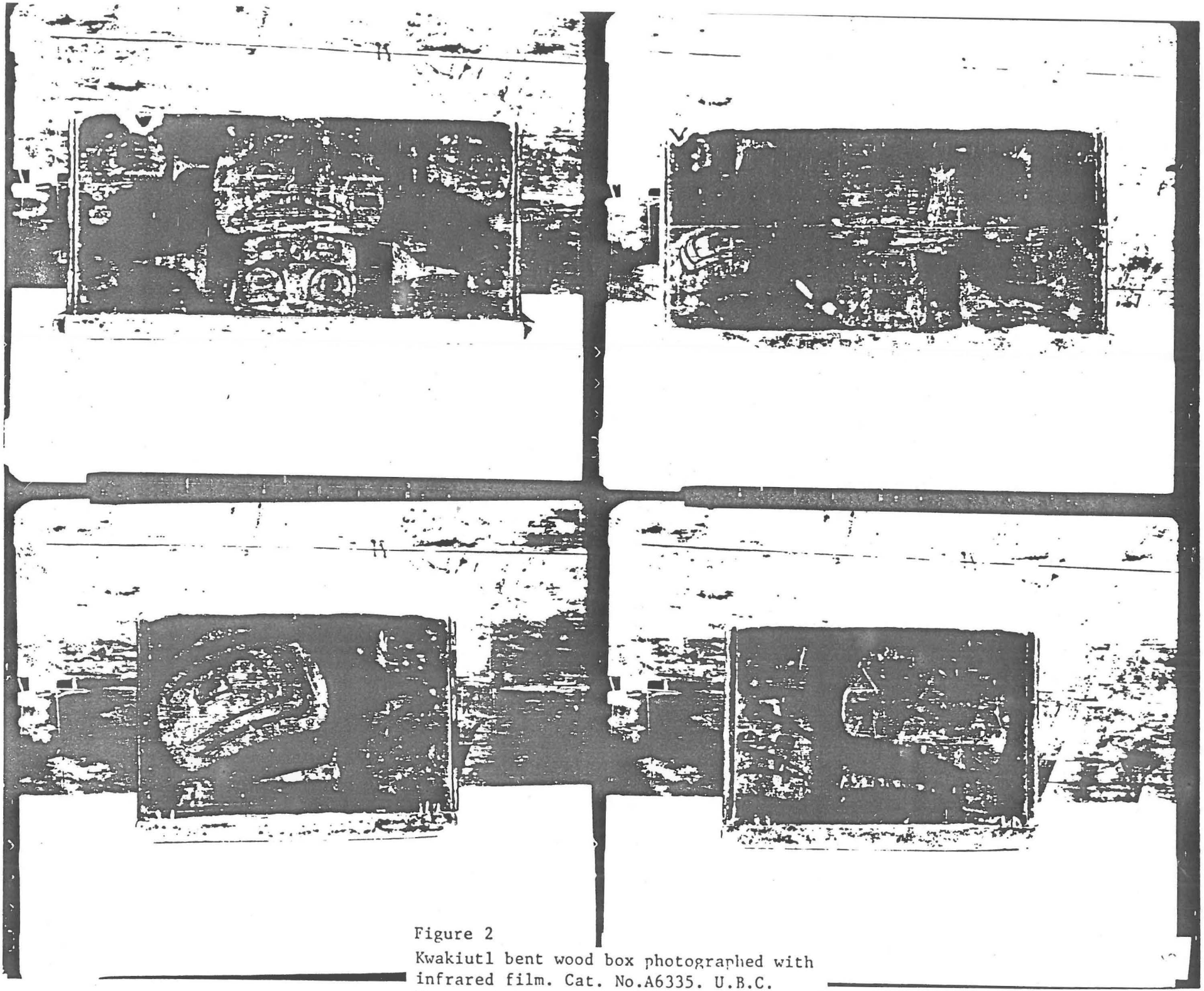

Figure 2
Kwakiutl bent wood box photographed with infrared film. Cat. No.A6335. U.B.C. Museum of Anthropology.

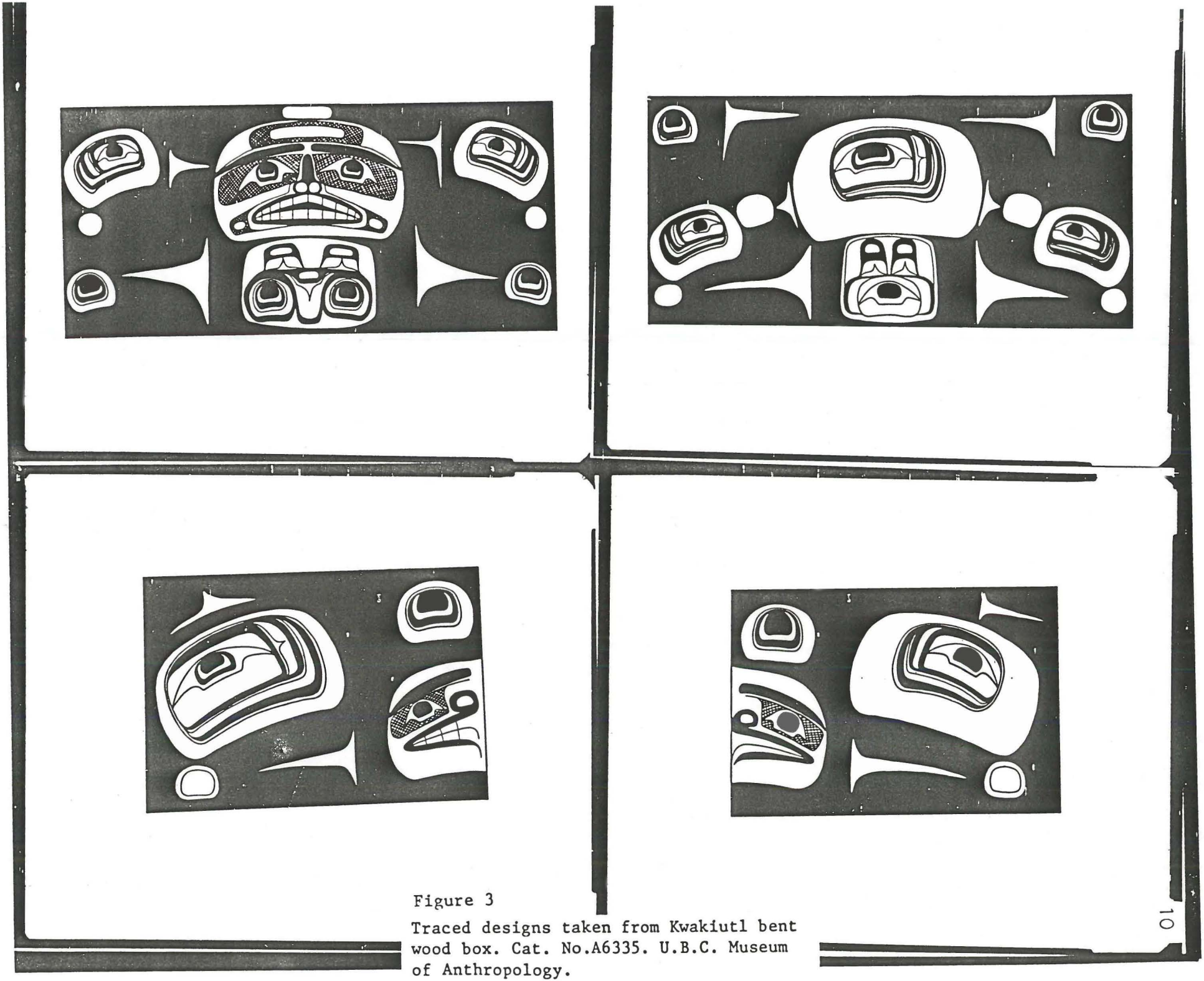

Figure 3

Traced designs taken from Kwakiutl bent wood box. Cat. No.A6335. U.B.C. Museum of Anthropology.

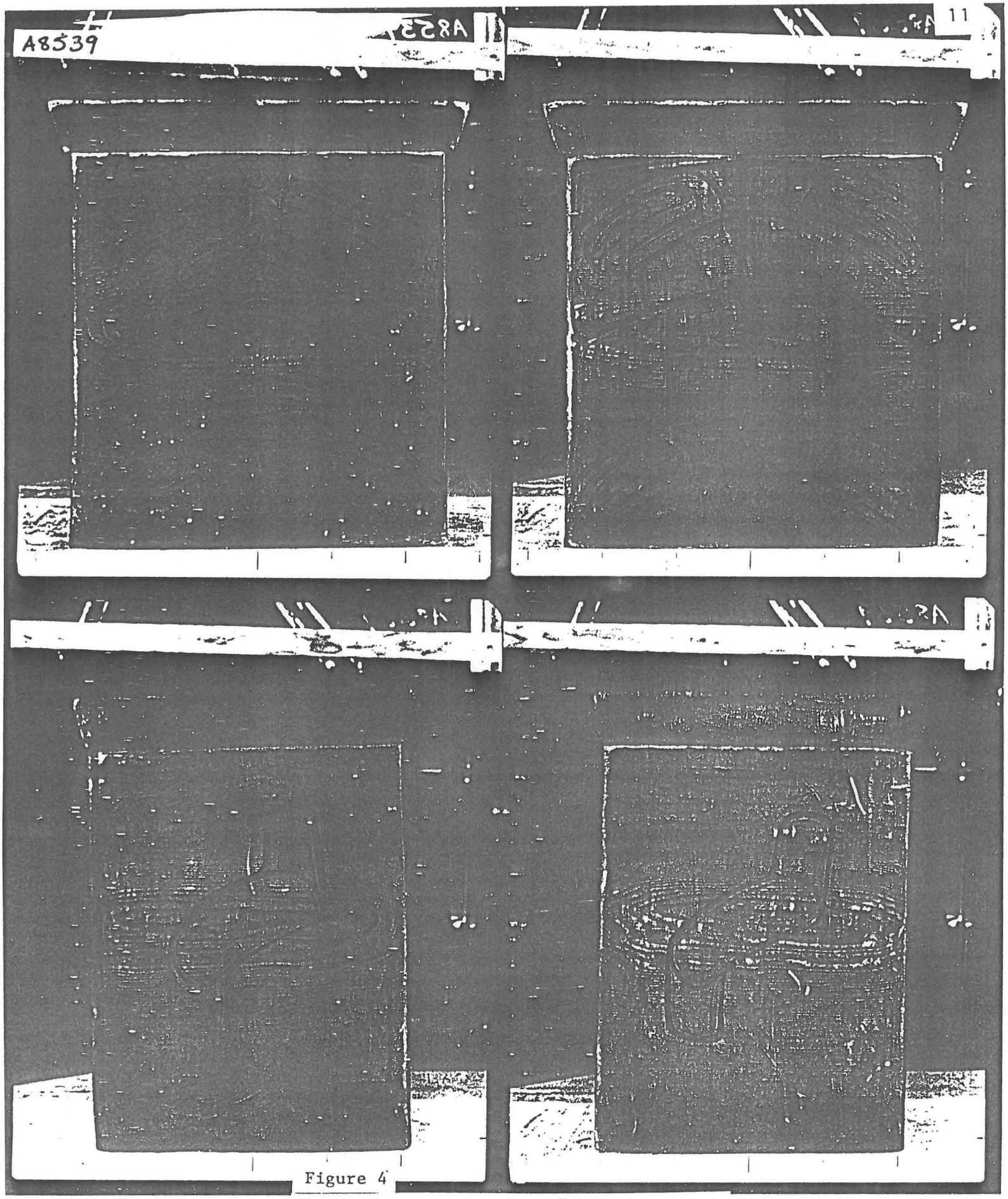

Figure 4

Coast Tsimshian bent wood box photographed with panchromatic film. Cat. No.A8539. U.B.C. Museum of Anthropology.

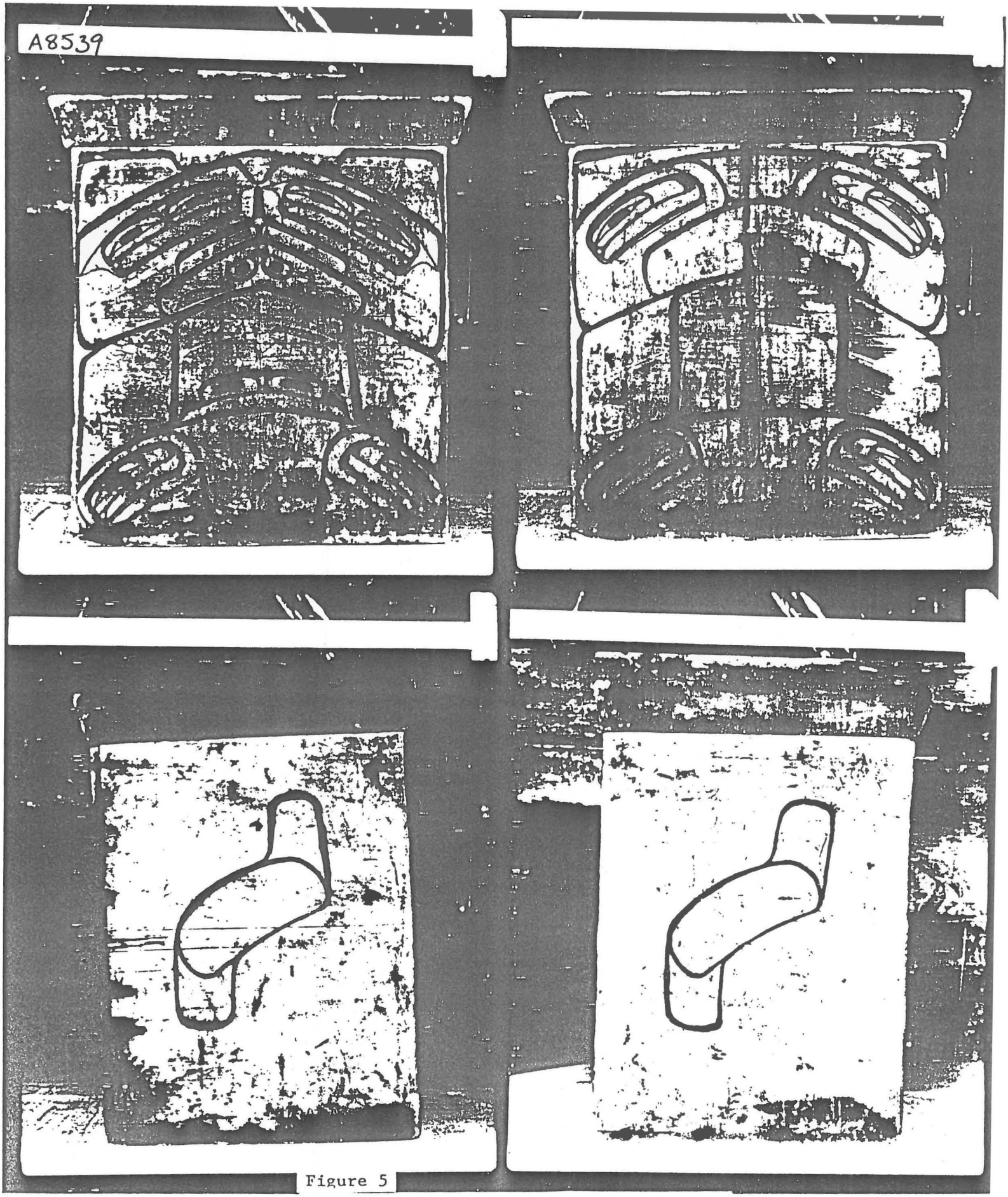

Figure 5

Coast Tsimshian bent wood box photographed with infrared film. Cat. No.A8539. U.B.C. Museum of Anthropology.

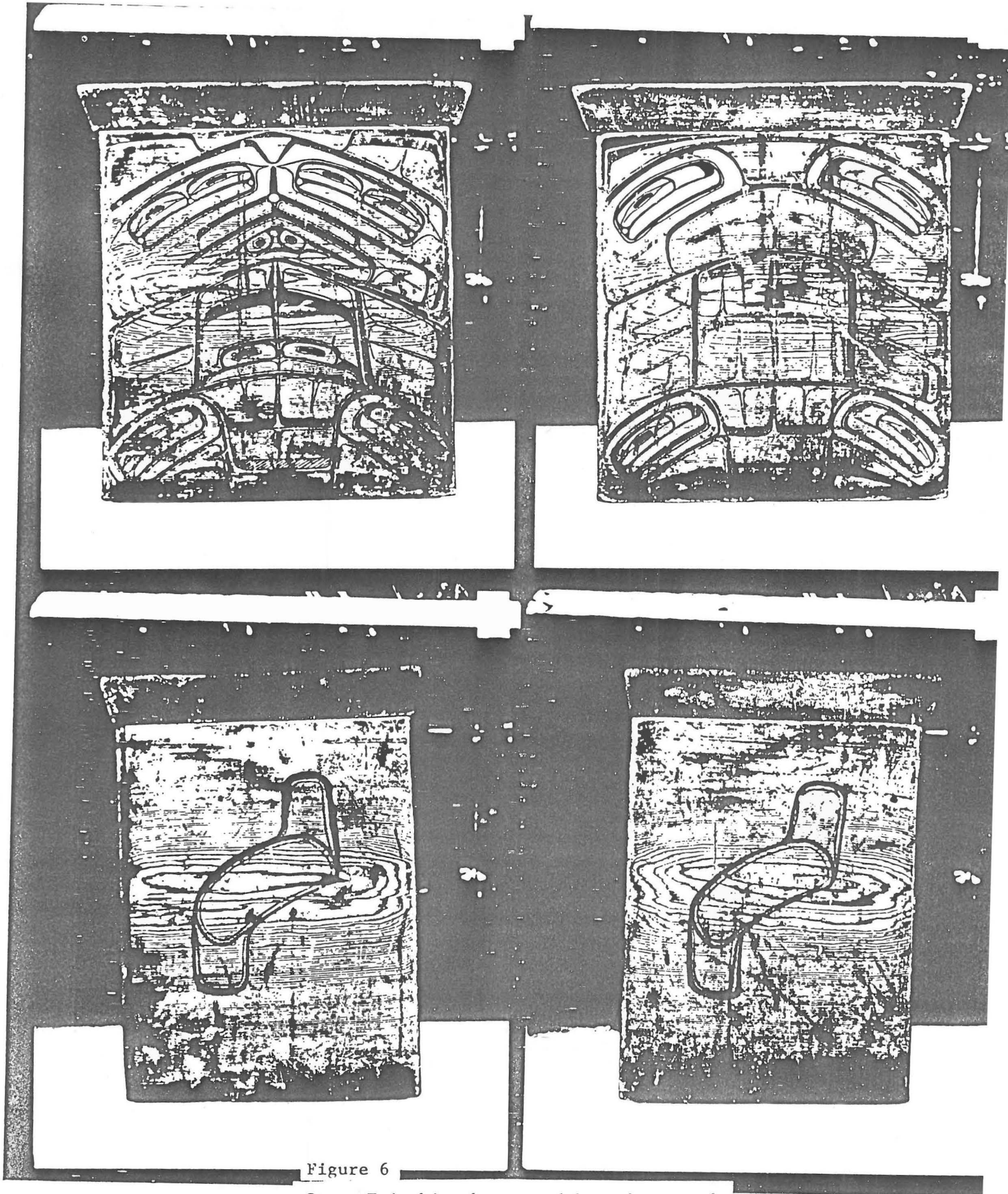

Figure 6

Coast Tsimshian bent wood box photographed with Kodalith ortho film. Cat. No. A8539. U.B.C. Museum of Anthropology.

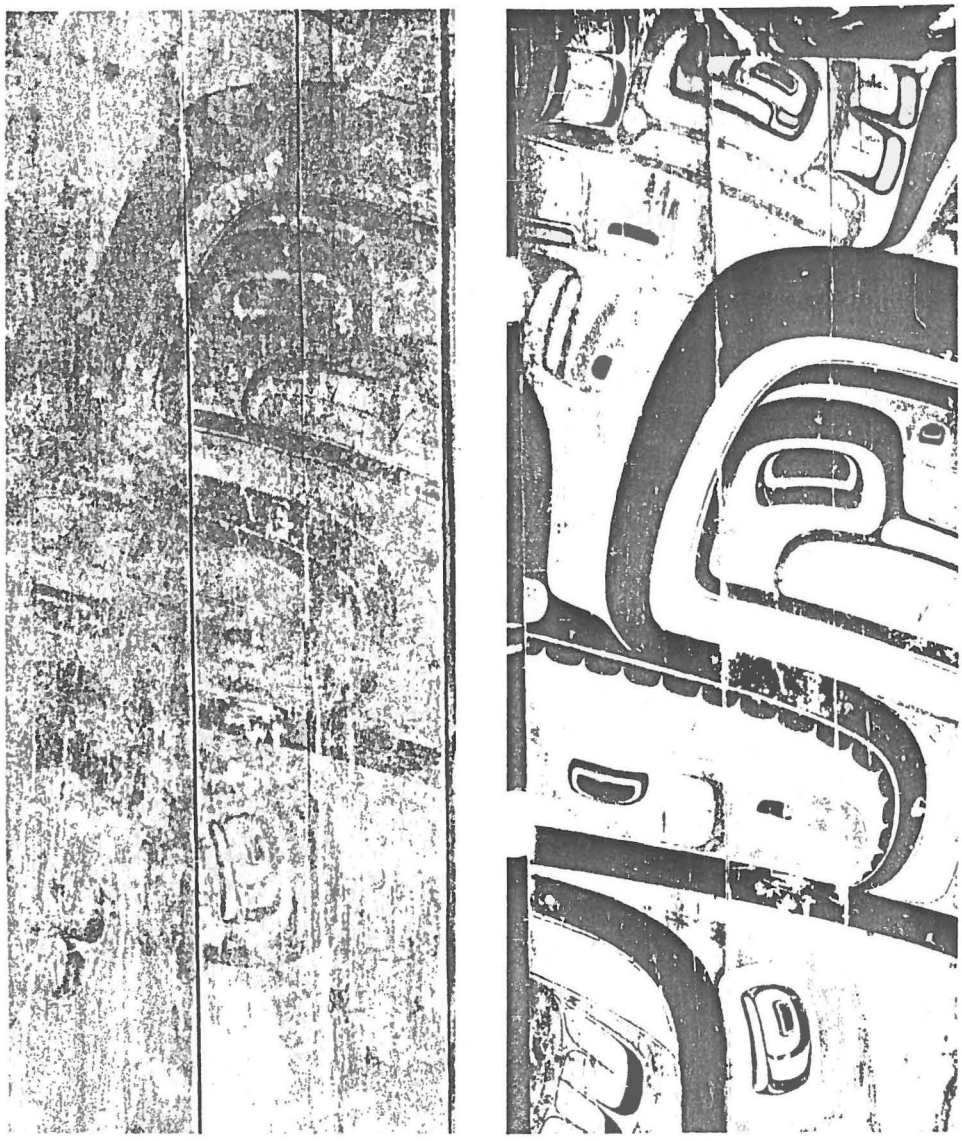

Figure 7

Three Tsimshian House Screen boards photographed with panchromatic film(left) and infrared film(right). U.B.C. Museum of Anthropology.

Figure 8

Graphic Designer, Bill McLennan, is shown here tracing a Tsimshian house screen design. To his left are high contrast orthochromatic photographs. U.B.C. Museum of Anthropology.

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