

CENTRAL INTELLIGENCE AGENCY

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COUNTRY: UNIDENTIFIED  
DATE: 4 MAY 1966  
SUBJECT: Exploitation of Metallic Fragment from Unidentified Flying Object  
EXPLOITATION OF METALLIC FRAGMENT FROM UNIDENTIFIED FLYING OBJECT

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On file in CIA Library is an exploitation report on a metallic fragment approximately 2"x2"x1", recovered near Kerekene, Republic of the Congo. The fragment was recovered by ground search after a UFO fell to earth in the area. The report concludes that the fragment was originally part of an electrical component and was constructed of 0.010-inch thick silicon-steel laminate.

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EXPLOSION REPORT

FRAGMENT, METAL, RECOVERED IN THE REPUBLIC OF THE CONGO,  
BELIEVED TO BE AN UNIDENTIFIED FLYING OBJECT  
(COUNTRY UNIDENTIFIED) (U)  
REF: 25500

SECTION I. (C) Purpose (U)

1. (C) The purpose of this report is to present the results of the exploitation of a metallic fragment recovered near the town of Kerkennah in the Republic of the Congo. The recovery was the result of a ground-level search which was conducted after an unidentified flying object exploded and fell to earth in the area. The sighting and recovery took place sometime between 10 and 15 October 1963. Other than a reported east-to-west direction of flight for the UFO, specific observation and recovery details are lacking.

SECTION II. (C) Description (U)

2. (C) Details concerning the exact location and characteristics of impact are unknown. However, the appearance of the fragment indicated exposure to high temperatures prior to impact (earth). The impact of the specimen had little or no effect on its final condition or appearance. The fragment weighed 0.11g, had an indefinite density of approximately iron and measured 2.25 x 1.75 x 1.0 inches. The top and side views of the specimen were rounded and appeared to have been shaped by heating and melting. This is illustrated in Figures 1 and 2. The V-shaped groove, visible in Figure 1, is the outline of an insert of plastic that differs materially from the rest of the specimen. Figure 3 shows the side view of the specimen shown in Figure 1.

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and was composed of six machined or formed shaped fins extending along the major axis of the fragment.

SECTION III. (C) Conclusions

3. (C) The fragment was originally part of an electrical component and could be identified as a motor, generator armature, or associated electrical regulator or control device.

4. (C) The fragment was constructed of .010-inch thick silicon steel laminates stacked on a central mild steel core or shaft.

5. (C) Materials, processes, dimensions, etc., as such, prevent determination of exact origin (country).

6. (C) Surface appearance and microstructure of the specimen indicates exposure to temperatures in excess of 2850° F.

SECTION IV. (C) Explanation

7. (C) The recovered fragment was 1.61 grams and had a density closely approximating that of iron. The fragment was found on heavy oxide was subjected to temperatures in excess of 2850° F. While there are no indications of impact, the deformed metal, as shown in Figures 4 and 7, would substantiate the conclusion that the fragment was moving at a high velocity when it was hot.

8. (C) Fabrication of the fragment was accomplished utilizing more or less standard procedures for fabricating electric motor armatures. Armature laminates were stamped (punched) from approximately .012-inch sheet steel, copper-plated, and assembled on a mild steel shaft approximately .435 inches in diameter. Following assembly, the laminates were joined by soldering or diffusion-bonding of the copper.

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placing. This can be accomplished by slightly compacting the laminate assembly and heating in a furnace. Temperature required for bonding of the copper depends upon the degree of compaction or pressure; the higher pressures requiring proportionately lower temperatures.

9. (C) A cross-section (transverse to length of the specimen) is shown in Figure 5. The light-colored lines are the edges of individual laminates, caused by cutting at an angle to, instead of parallel to, the laminates. These light-colored lines or petals are "T" shaped. This shape is used to help holding wire in place and is found on high RPM motors. The melted condition of some of the "T's" is indicative of the high heating conditions experienced. The outer surface of the armature shaft is serrated to prevent axial slippage of the laminates.

10. (C) The lamination or stacking of individual laminates is clearly illustrated in Figure 6. The space between laminates on the fin at the top of the photograph is due to the melting and slumping of the copper during the high temperature exposure of the specimen. Some of the copper has been removed from the fin at the bottom of the photograph. A representative cross-section of this area is shown in Figures 7 and 8.

11. (C) Another result of intense heating was the increased grain size of the steel laminates' microstructure. The microstructure of the laminates shown in Figures 9 and 10 illustrates grain sizes that are comparable to Category 2 of ASTM G-10.

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intense heat and then cooled at a comparatively slow rate.

12. (C) The light material between the laminations in Figure 9 is plated copper that melted and flowed between the laminations when the entire specimen was hot. A photomicrograph of this is shown in Figure 11.

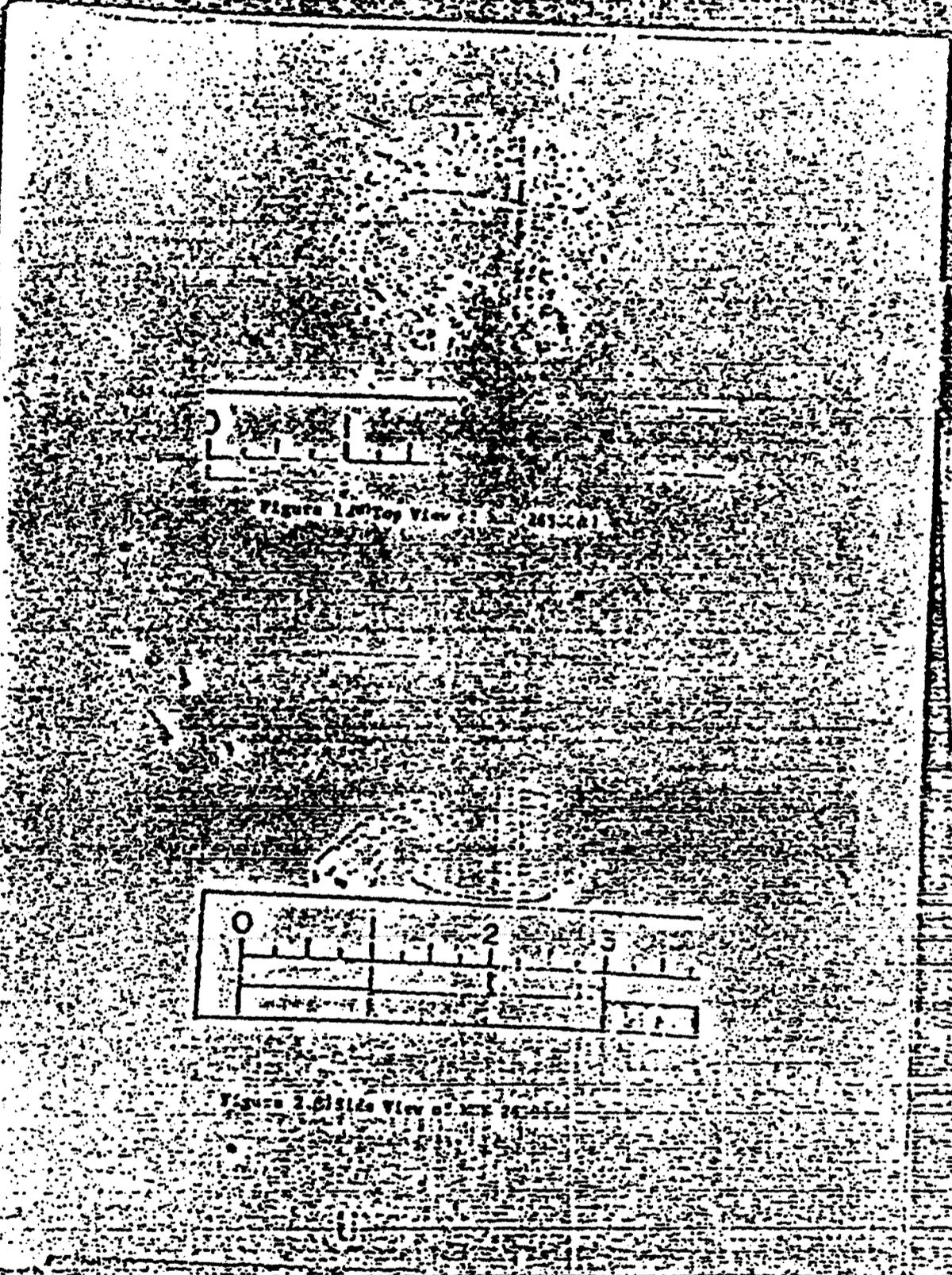
13. (C) Analysis of the steel discloses the following:

Element	Percent Present (Weight)
Carbon	
Manganese	
Silicon	
Nickel	less than 0.10
Chromium	0.87
Molybdenum	less than 0.01

14. (C) Chemical composition of the steel laminations was as follows:

Element	Percent Present (Weight)
Manganese	less than 0.25
Silicon	(0.5)
Nickel	less than 0.10
Chromium	
Molybdenum	less than 0.01

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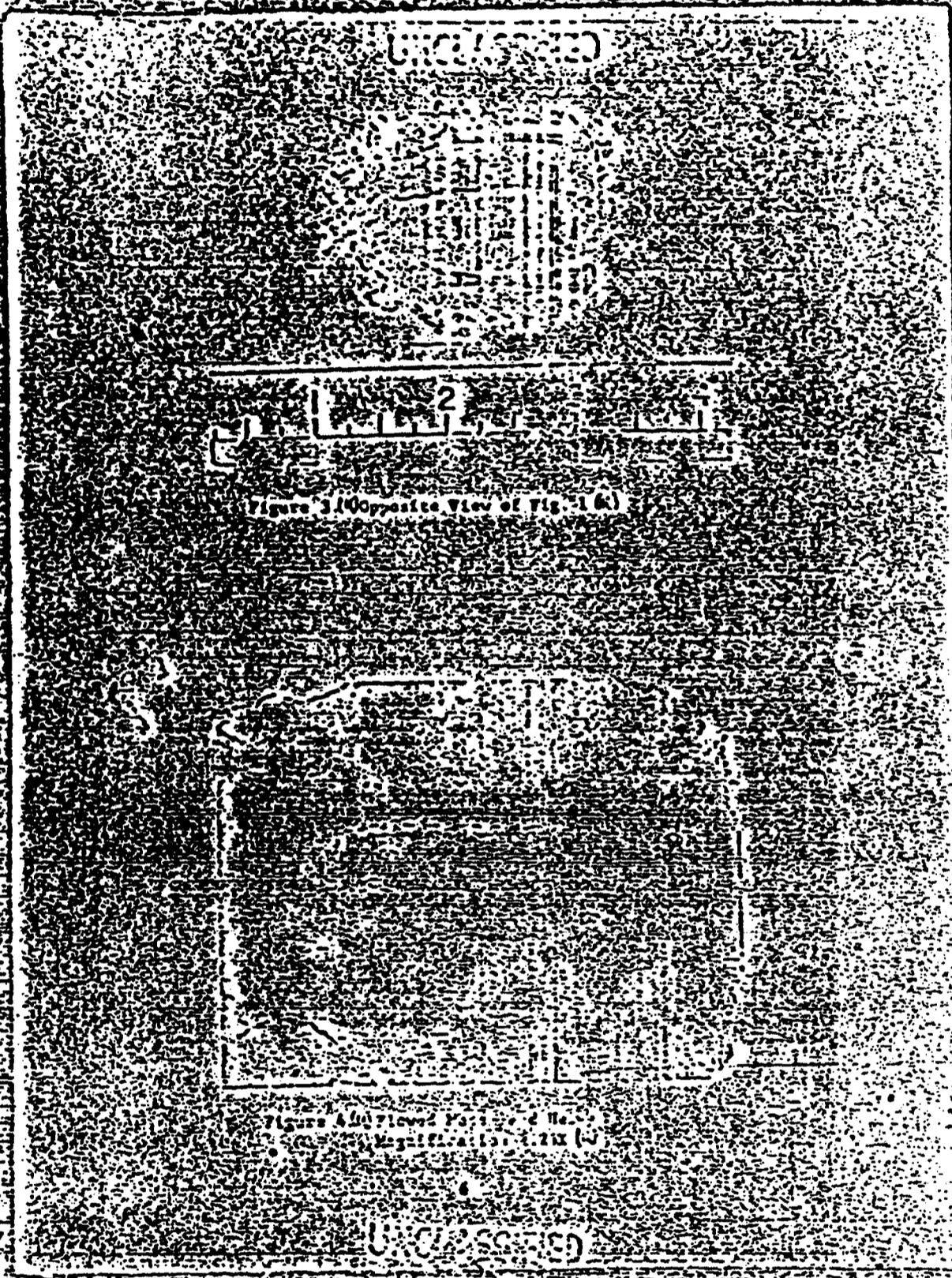


Figure 3 (Opposite View of Fig. 1 A)

Figure 4 (Opposite View of Fig. 1 B)

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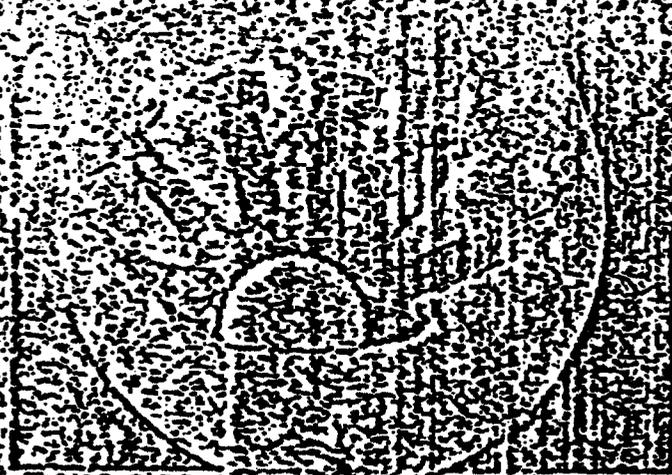
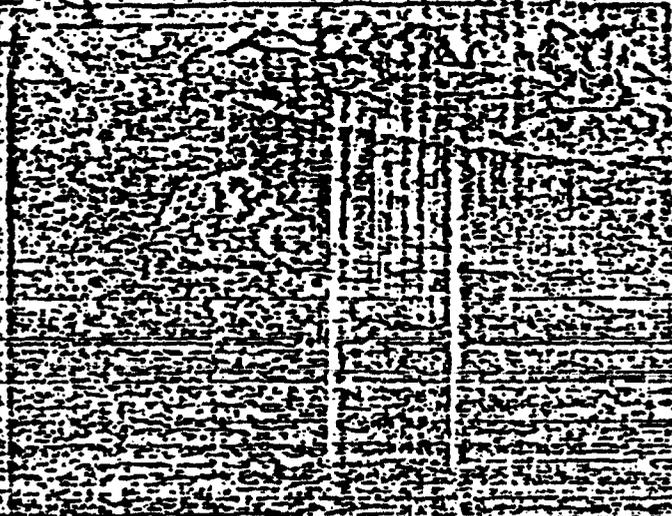


Figure 3. Cross-section (compare to the length of the Specimen) Magnification X 40



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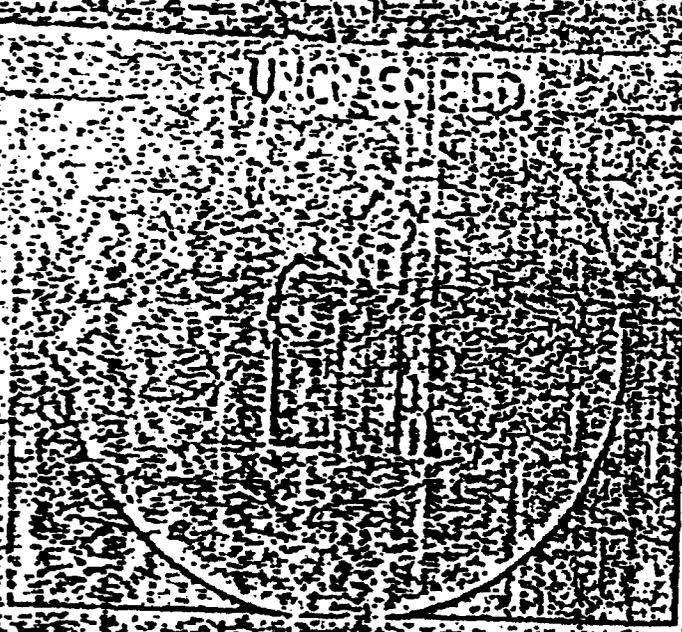


Figure 7 Micrograph cross-section of  
lensed area  
Magnification 7,731 X

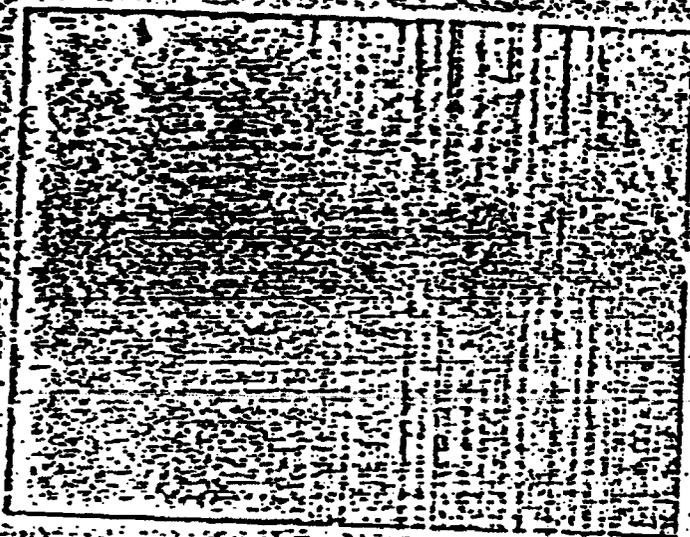


Figure 8 Micrograph cross-section of  
lensed area  
Magnification 7,731 X

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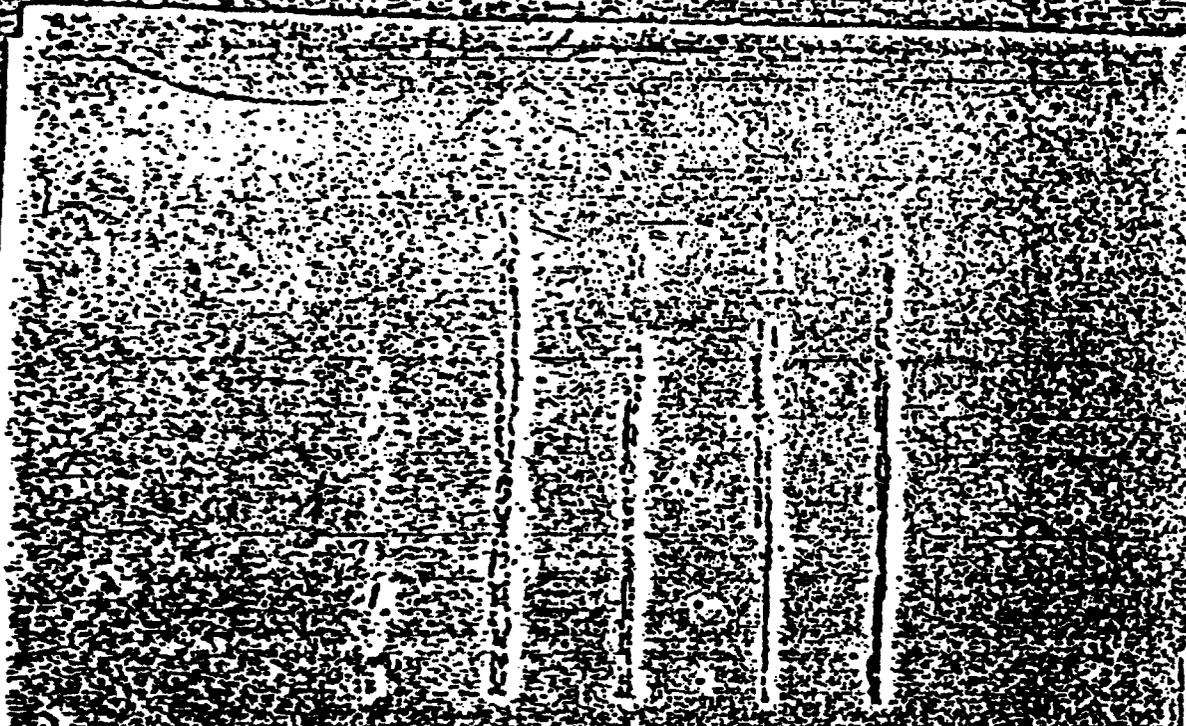
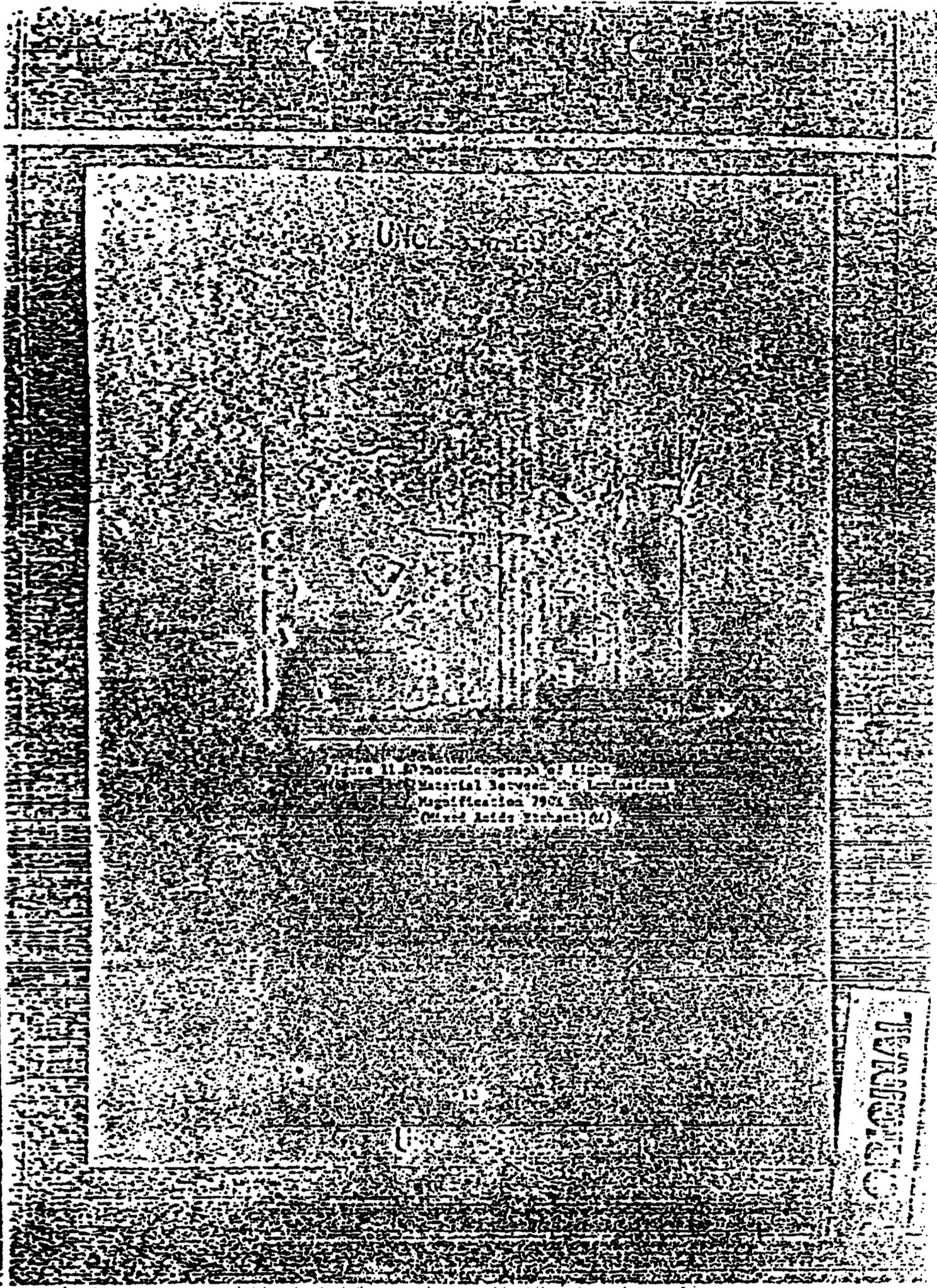


Figure 9.10 Micrograph of  
 Laminated Structure  
 Magnification 65x  
 (X-ray Microscopy)

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Figure 11. Photomicrograph of the  
 Material Between the Lamellae  
 Magnification 790x  
 (Mixed Acid Etchant) (X)

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