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CENTRAL INTELLIGENCE AGENCY 15127-66

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[redacted] [redacted]

COUNTRY	UNIDENTIFIED 4 MAY 1966	REPORT NO.	[redacted]
SUBJECT	Exploitation of Metallic Fragment from Unidentified Flying Object	DATE DISTR.	4 MAY 66
	EXPLOITATION OF METALLIC FRAGMENT FROM UNIDENTIFIED FLYING OBJECT	NO. PAGES	1
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DATE OF INFO.	APRIL 1966		
PLACE & DATE ACQ.			

THIS IS UNEVALUATED INFORMATION

SOURCE: [redacted]

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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7649 NUMBER

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EXPLOITATION REPORT

[illegible] FRAGMENT, METAL, RECOVERED IN THE REPUBLIC OF THE CONGO, [illegible] BELIEVED TO BE AN UNIDENTIFIED FLYING OBJECT (COUNTRY UNIDENTIFIED) (U

MCN-[illegible]5500

SECTION I. (C) Purpose (U

1. (C) The purpose of this report is to present the results of the exploitation of a metallic fragment recov[illegible] near the town of Kerakana in the Republic of the [illegible]. [illegible] recovery was the result of a ground-level search which was co[illegible] 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 1965. Other than a reported east-to-west direction of flight for the UFO, specific observation and recovery details are lacking.

SECTION II. (C) Description [illegible]

2. (C) Details concerning the exact l[illegible] and characteristics of impact are unknown. However, the appearan[illegible] of the fragment indicated exposure to high temperatures prior [illegible] (earth). [illegible] impact of the specimen had li[illegible] or no effe[illegible] its final condition or appearance. The fragment weighed [illegible] and 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 [illegible] shaped groove, visible in Figure 1, is the outline of an insert of [illegible] that differs [illegible] from the rest of the specimen. Figure 3 shows the [illegible] the end shown in Figure 1

GROUP [illegible]
[illegible] YEAR INTERVALS
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and was composed of six machined or formed "T" 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 armature, generator armature, or associated electrical regulating [illegible] device.

4. (C) The fragment was constructed of .010-inch thick silicon steel laminate 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 2800° F.

SECTION IV. (C) Exploitation [illegible] (U)

7. (C) The recovered specimen weighed [illegible].61 grams and had a density closely approximating [illegible] cu cm. Flowed metal on heavy oxide was indicative of [illegible] temperatures in excess of 2800° F. While there are no indications of impact, the flowed metal, as shown in Figures 4 and 7, would substantiate the conclusion that the item was moving at a high velocity when it was hot.

8. (C) Fabrication of the item was accomplished utilizing more or less standard procedures for fabricating electric motor armatures. Armature laminates were stamped (punched) from approximately .012-inch sheet steel, copperplated, and assembled on a mild steel shaft approximately .425 inches in diameter. Following assembly, the laminates were joined by [illegible] or diffusion-bonding of the copper-

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

9. (C) A cross-section [illegible] to [illegible] length of the specimen) is shown in Figure 5. The light-colored, [illegible] lines are the edges of individual laminates, caused by [illegible] a [illegible] angle to, instead of parallel to, the laminates. [illegible] that [illegible] fins or petals are "T" shaped. This shape is used to help [illegible] winding 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 [illegible] individual laminates is clearly illustrated in Figure 6. The [illegible] between laminates on the fin at the top of the photograph is due [illegible] the melting and [illegible] of the copperplating during the high temper[illegible] of the [illegible] specimen. Some of the copper [illegible] been [illegible] the fin at the bottom of the photograph. A [illegible] cross-section of this area is shown in Figures 7 and 8.

11. (C) Another result of intense heating was the enlarged grain size of the steel laminates' microstructure. The microstructure of the laminates shown in Figures 9 and 10 [illegible] grain sizes that are comparable to Category 2 of [illegible] [illegible]. Large grain also [illegible] [illegible]

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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 [illegible] disclosed the following:

Element	Percent [illegible] (Weight)
Carbon	[illegible]
Manganese	[illegible]
Silicon	[illegible]
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	[illegible] 25
Silicon	([illegible] .5)
Nickel	[illegible] 0.10
Chromium	[illegible]
Molybdenum	less than 0.01

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Figure 1 [illegible] Top View of [illegible]

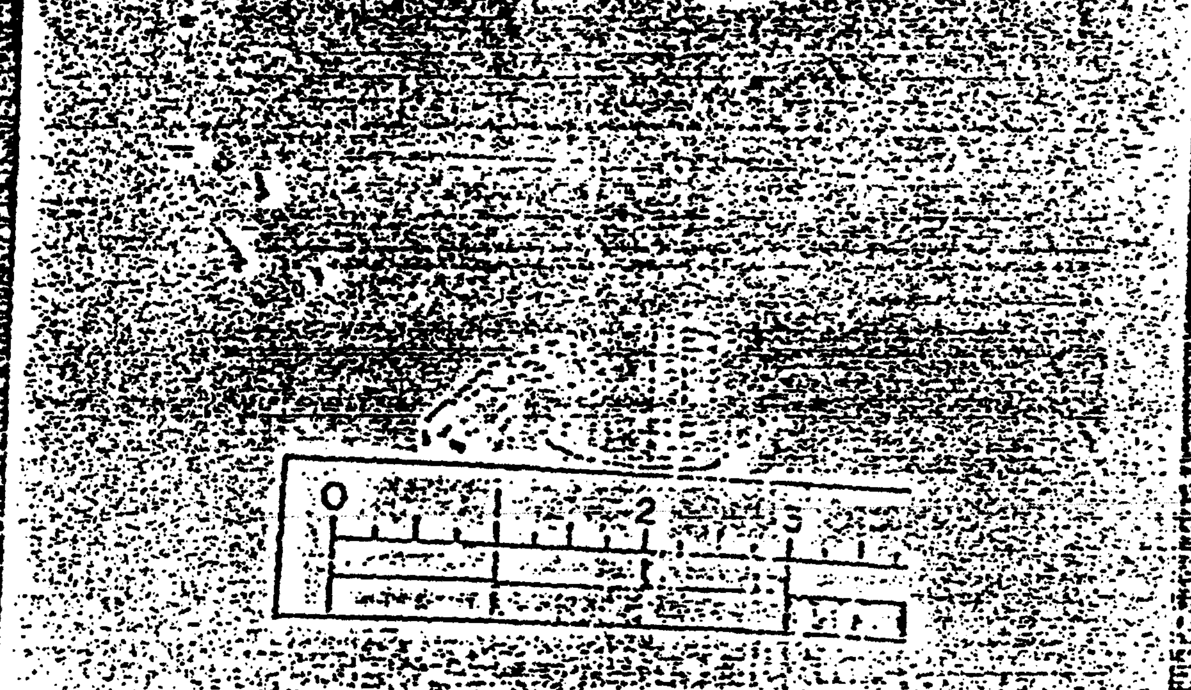

Figure 2 [illegible] Side View of [illegible]

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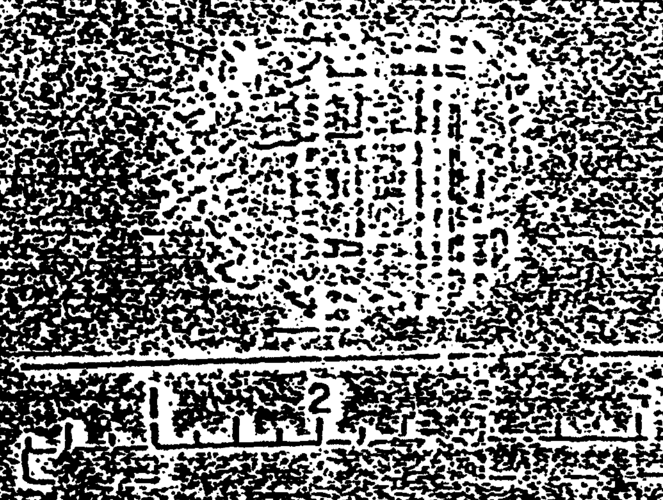

Figure 3 (U) Opposite View of Fig. 1 (U)

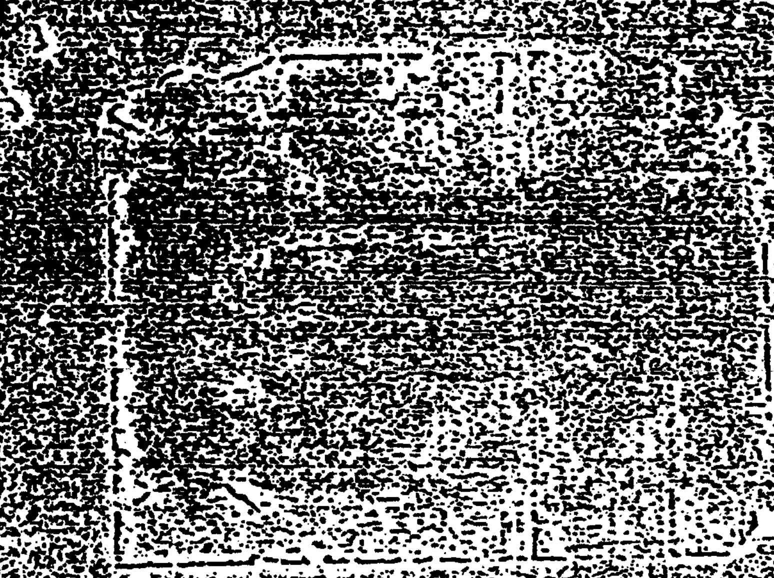

Figure 4 (U) Flowed Portion of Ne- [illegible]
Magnification 1.21X (U)

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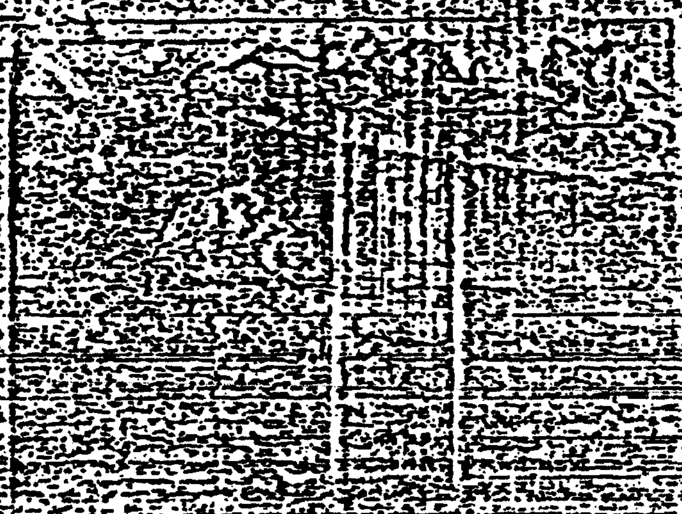
Figure 3 Cross Section (Transverse to the Length of the Specimen) Magnification X [illegible]



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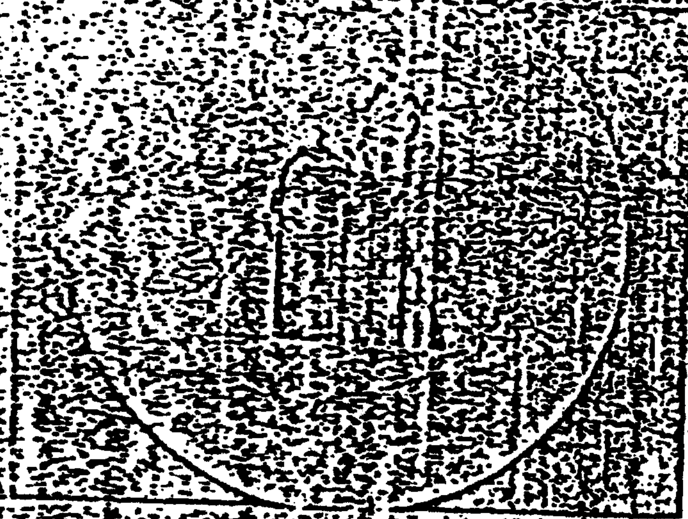

Figure 7 Micrograph Cross-Section of Laminated Area

Magnification [illegible]

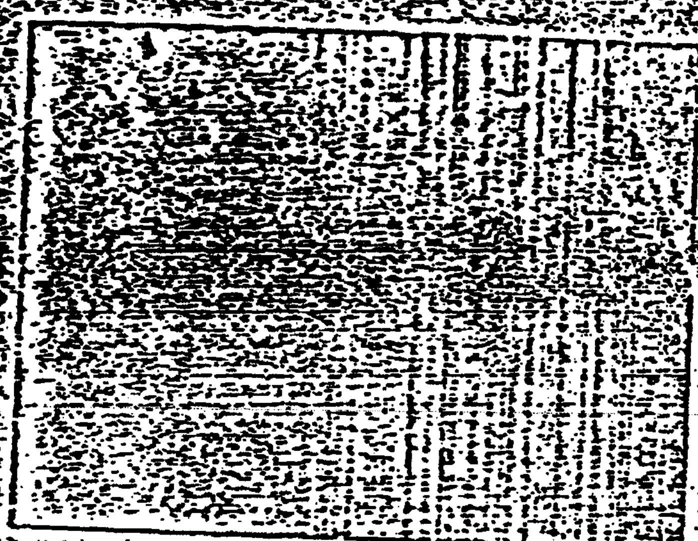

Figure 8 Micrograph Cross-Section of Laminated Area

Magnification [illegible]

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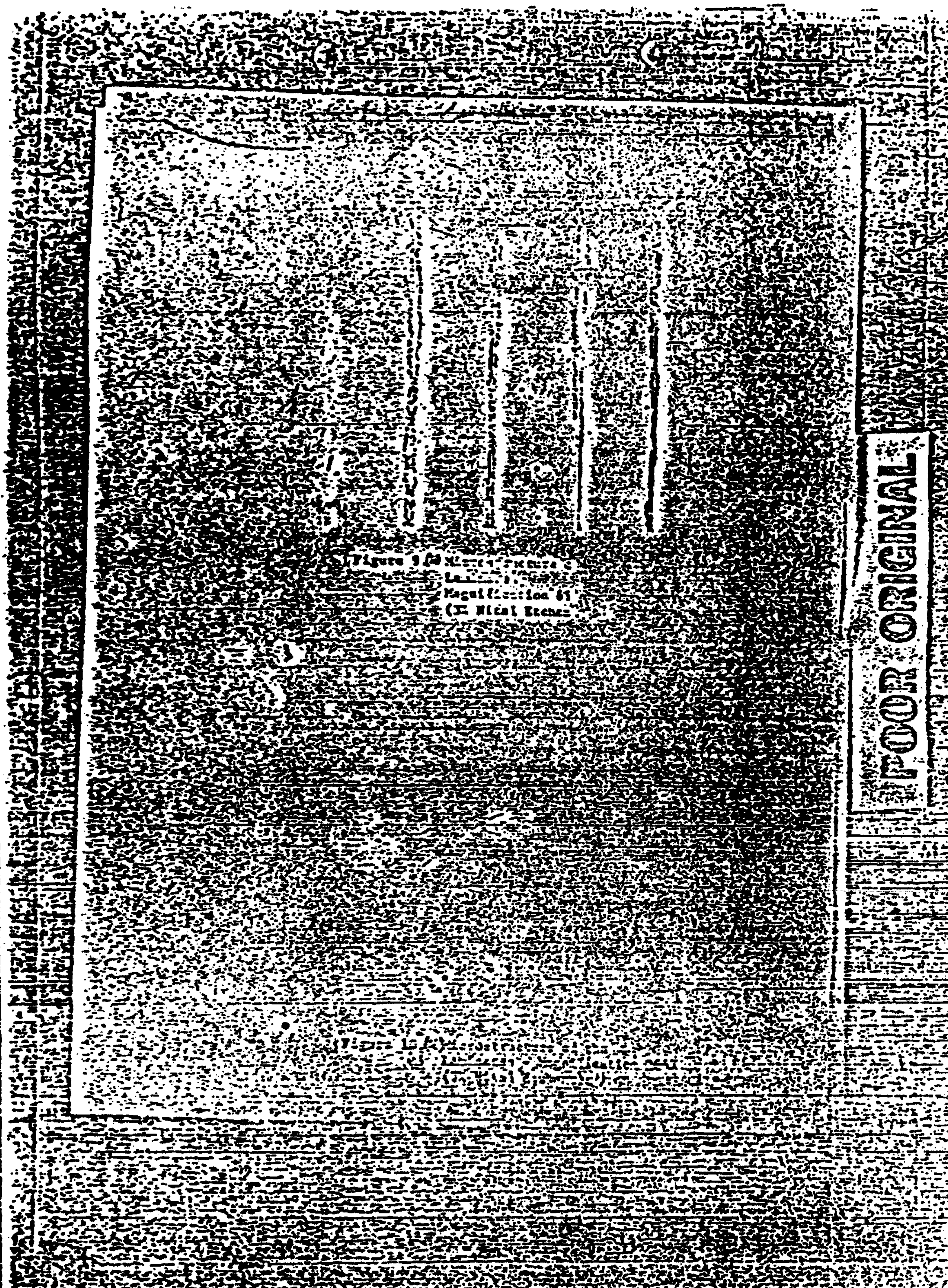

Figure 9 (a) [illegible]
[illegible]
Magnification [illegible]
(% Nital Etchant)

Figure 10 (a) Microstructure [illegible]

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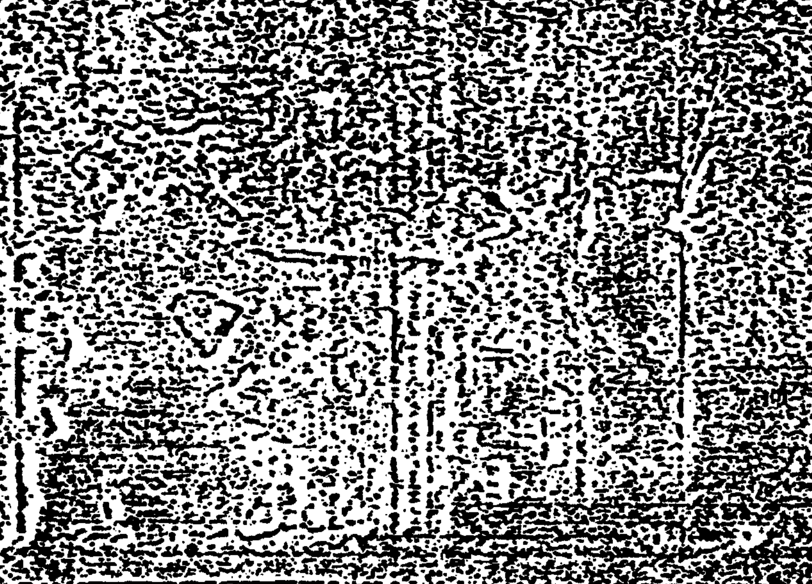

Figure 11. (U) Photomicrograph of Light [illegible] Material Between the Laminations [illegible] Magnification 790X [illegible] (Mixed Acids Etchant) (U)

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