

Summer 1940

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Recommended Citation

Dwight W. Rife, *Scientific Evidence in Rape Cases*, 31 *Am. Inst. Crim. L. & Criminology* 232 (1940-1941)

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SCIENTIFIC EVIDENCE IN RAPE CASES

Dwight W. Rife*

The usual absence of eye witnesses to the crime of rape makes it imperative for the police and the prosecution to place considerable reliance upon circumstantial evidence in their efforts to judicially establish the guilt of the perpetrator of such an offense. Obviously, therefore, scientific evidence becomes of paramount importance in cases of this nature.

It has been the practice of the New Mexico State Police in the investigation of cases of rape (and of sodomy, pederasty, and other forms of sexual perversion as well) to examine not only the victim but also the accused person himself. Every possible precaution is taken to insure a complete disclosure of all physical and scientific facts.

Examination of Victim

Careful notes are made as to the condition of the victim's clothing and all spots and stains (including mud and dirt) are examined microscopically and also under fluorescent light. Such examinations often disclose interesting facts about the scene of the alleged offense—the character of soil, the botany of the area, and also accidental inclusions. The location of teeth marks, scratches, bruises, etc., are noted and

photographs made when necessary. Lesions on or about the introitus, including the condition of the hymen or its remnants, are recorded, together with notations as to the time and date the examination is made.

Using normal salt solution, washings are taken from the vulva and perineum of the victim, collected separately, centrifuged and examined microscopically. Another washing is taken from the vaginal vault and careful inspection made of the interior of the vagina, the cervix, and fornices.

All of the accused person's clothing is examined carefully and all stains of whatever character are investigated. The person of the accused is carefully scrutinized. Our technique includes what we consider the most important step of all—the recovery of washings of the penis, especially around the frenum and corona and the rolled back foreskin. Washings are made by directing a fine stream of normal saline solution against the parts examined, using a small wash bottle with fine pipette attached. The wash bottle is of the same pattern as that used in any chemistry laboratory, but somewhat smaller so that it can be conveniently held in one hand. We use a 100 c.c. Florence flask

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Santa Fe District Attorney's office, for their cooperation and valuable aid in submitting the evidence in some of the cases described in this paper.)

with 24 inches of rubber tubing attached to the mouthpiece. Washings are collected in small glass stoppered bottles and labeled for subsequent examination. Many interesting inclusions are to be found in these washings which may have a distinct evidential value in the case.

Case Illustrations

We were impressed some years ago by the utter lack of careful examination by a police surgeon in a case of rape and murder. In his testimony at the trial of the accused, the police examiner, who had opportunity to examine the prisoner only one hour after the crime had been committed, on being questioned as to the appearance of the prisoner, merely stated that "there was moisture on the penis"; and that was all to which he could testify. In contrast to this inadequate procedure, a few weeks later a case of pederasty was brought to the attention of this department. The victim was a boy of 8 years who stated that the accused, an escaped convict from the State Penitentiary, had forced him into a coal yard as he was passing, and committed the act. Fortunately, officers apprehended the accused less than two hours after the crime was committed. Examinations of the victim and the accused resulted in the following disclosures: washings from about and inside the anus of the victim disclosed many live spermatozoa and many particles of coal dust. Washings from the penis of the accused contained a number of feebly motile spermatozoa, considerable coal dust, and particles of feces, the latter

identified by the presence of undigested meat fibers, starch granules, fatty acid crystals, and bacteria. When faced with this unanswerable microscopic evidence the accused confessed.

One of the most interesting cases that has come to our attention was a recent case of rape and incest. In the routine examination of the victim 6 hours after the crime, a large number of motile sperm were found together with a moderate number of vaginal parasites called trichomonads. Examination of washings from the penis of the accused, who had a long redundant foreskin, showed not only many spermatozoa but also a fair number of trichomonads, some of which were still actively motile. The presence of these vaginal parasites was of considerable evidentiary value in substantiating the charge against the accused. (Although these parasites frequently are present in prostatic secretions after a massage, and occasionally in a non-specific urethral discharge, they are never found *alive* and *under the* foreskin except in cases of recent exposure to their vaginal source.)

It is stated repeatedly in texts on forensic medicine that oftentimes these trichomonads have been mistaken for motile spermatozoa and vice versa. One with so superficial knowledge of microscopy as to make this mistake should not be permitted to make an examination of this nature or to pass an opinion on the findings. The examiner sufficiently well grounded in microscopy will not make this absurd error, since the size and appearance of one is quite foreign to the other.

Microscopic examination of the shirt front of the accused is often fruitful. A recent case examined in our laboratory is illustrative. The accused wore a white shirt. According to the victim, she was attacked three times, being forced to lie in an old deserted creek bed where her cries for help could not be heard. She wore a cheap rayon dress in imitation of cut velvet. On examination of the shirt front, hundreds of pieces of varicolored rayon threads were found embedded in the coarser weave of the shirt front. When compared under the comparison microscope with the material of the dress both were found to be strikingly similar in size and color. Further examination of dried mud spots on the knees of the accused man's trousers disclosed a micaceous clay similar to the mud in the creek bed, and totally unlike the red and pink quartzite sands at a spot several miles from the scene of the crime where the accused said he had been that same night.

Other investigators have described a rather unusual case in which an examiner found a piece of pine needle on the vulva of the victim and a similar piece on the penis of the accused! When examined under the microscope the fractured ends of the pine needle matched perfectly, linking the accused with the crime more certainly than the mere statement of an eye-witness. In one case, at least, we have been able to place the accused person at the scene of the crime by finding under his fore-skin pollen granules of a type peculiar to the locality in question.

Fingernail Scrapings

Fingernail scrapings should be utilized more often than at present. One of our latest rape cases was considerably strengthened by evidence obtained in this way. The victim had been attacked by a group of five young men, and during the encounter she had sustained a deep scratch running from the septum of the nose to the margin of the lip, together with other marks of violence. Because of the presence of such scratches it was deemed advisable to obtain fingernail scrapings from the accused persons.

Under the fingernail of one of the accused reposed a loose fragment of epidermis stained with lipstick. This flattened out nicely when mounted and cleared on a slide, and it was unmistakably epithelium foreign to the nail bed of the accused, since it was laying loosely in the nail debris and was removed from beneath the nail with no force nor attempt at scraping. This piece of carmine stained epidermis was discovered first by examining the nails with the binocular wide-field microscope, a routine procedure carried out before any attempt is made at removing fingernail debris for microscopic study. (This procedure is painstaking and time consuming, but it literally opens up a new world of investigation which sometimes yields amazing results.)

In addition to the finding of this piece of skin, the fingernail debris of three of the accused persons contained numerous fragments of cat hairs—a very significant bit of evidence in view of the fact that the victim was the owner

of a pet cat and a number of kittens, who were responsible for the presence of a large number of cat hairs among the wool fibers of the clothing worn by the victim at the time of the assault.

Thorough Search for Scientific Evidence

We believe that if the police examiner utilizes every means possible, especially the microscopic examination of all clothing and secretions of both parties involved, the crime of rape may be reconstructed rather completely. Law enforcement officers are constantly being faced with the accusation of the victim on one hand and the vigorous denial of the accused on the other. Anything in the way of scientific, con-

crete evidence, however fragmentary, may make for conviction or else clear an innocent man of a serious charge.

One should not be content with a gross examination made by the naked eye. When a torn, bleeding hymen or fourchette is found on the victim, as well as a torn or swollen frenum on the penis of the accused, both signs are highly suspicious. Too often these tell-tale injuries are not present, especially when the victim of rape is not a virgin or a child. Many cases for prosecution would be lost indeed, if the investigation should stop with simple inspection and questioning, or with a careless examination by an indifferent medical examiner.