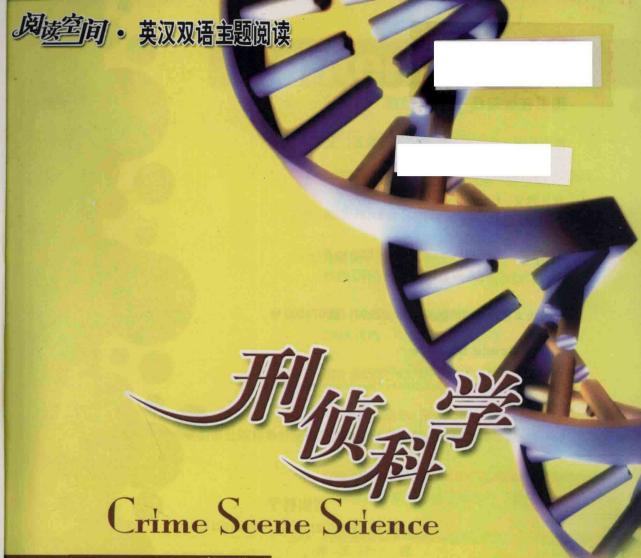
阅读空间 • 英汉双语主题阅读







王新i

京权图字 01-2004-4522 图书在版编目 (CIP) 数据

刑侦科学/美国凯勒斯出版公司编著;王新译. 北京:中国电力出版社,2005 (阅读空间·英汉双语主题阅读) 书名原文: Crime Scene Science ISBN 7-5083-2702-0

I.刑··· Ⅱ.①美···②王··· Ⅲ.英语 - 阅读教学 - 高中 - 课外读物 Ⅳ.G634.413

中国版本图书馆 CIP 数据核字 (2004) 第 074800 号

Crime Scene Science

Copyright © 2004 by Carus Publishing Company.

Chinese Translation Copyright © 2004 by China Electric Power Press

All rights reserved.

《阅读空间·英汉双语主题阅读》由美国北极星传媒有限公司授权出版。

刑侦科学

原著: Kathiann M. Kowalski等

翻 译: 王 新

责任编辑:游媛 李宝琳

出版发行:中国电力出版社

社 址:北京市西城区三里河路6号(100044)

网 址: http://www.centuryoriental.com.cn

印刷:北京世艺印刷有限公司

开 本: 178 × 226

印 张: 3

字 数:57千字

版 次: 2005年1月第1版, 2005年1月第1次印刷

书 号: ISBN 7-5083-2702-0

定 价: 8.90元

据权所有 副部队政事

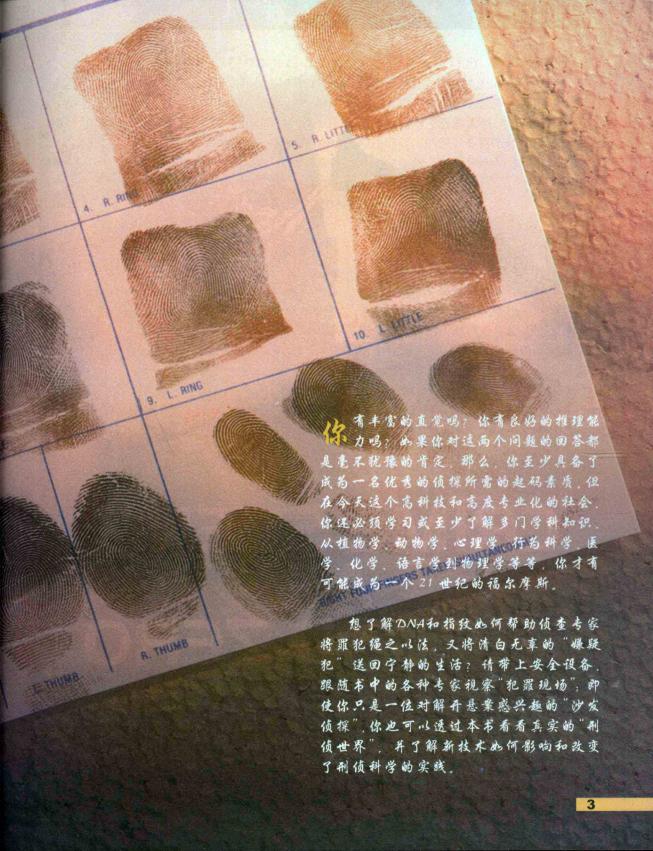
如有印装质量问题。出版社员资调模。联系电话。010-62783493



Contents 目录

- 2 Editor's Message 编辑手记
- 4 Crime Scene at Ground Zero 灾难中心的犯罪现场
- 10 More Forensic Science Specialties 刑侦科学专业细分
- 13 Your DNA Profile: The Identity You Can't Escape 你的 DNA 档案: 你难以逃脱的身份
- **DNA 建档:** 一门不完善的科学
- 27 DNA Basics DNA 入门
- 22 "Facing" Jack the Ripper: Forensics Then and Now "面对"碎尸犯杰克、刑侦学今昔
- 29 Criminal Profiling:The "Face" of Forensic Psychology 勾画罪犯肖像: 刑侦心理学的 "面孔"
- 30 I am Jack"... fl Hoax? 我就是杰克……—场骗局?
- 32 Fingerprints on Trial 指纹受审
- 37 Try Your Hand at Fingerprint finalysis 试用你的手作指纹分析
- 38 The Bottlebrush & Hibiscus Get Their Man 天花菜和木槿抓住了罪犯
- 45 Teacher's Guide & Activity 教师指导与活动





CRIME SCENE AT GROUND ZERO

On Sept. 11, 2001, terrorists committed the most vicious crime in America's history. Two hijacked jets flew into New York's World Trade Center. A third plane smashed into the Pentagon. A fourth hijacked jet crashed in Somerset County, Pennsylvania. Over 3,100 people perished. Local, state, and federal agencies rushed to the scenes.

2001年9月11日,恐怖分子犯下了美国历史上最凶残的罪行。两架被劫持的飞机撞入纽约市的世界贸易中心。第三架飞机撞向了五角大楼。第四架飞机在宾夕法尼亚州的萨默塞特市坠毁。3100多人失去了生命。地方、州级和联邦机构的人员都奔向犯罪现场。

WORKING A CRIME SCENE

"The single most important aspect of working a crime scene is organization, having a plan," says Max Houck, director of West Virginia University's Forensic Science Initiative. While he was with the FBI's Trace Evidence Unit, he worked on the Pentagon crash. In a house burglary, the plan may be to make sure that no one is hurt, secure the site, and then methodically search for evidence. The Sept. 11 crime scenes were bigger than anything anyone had ever faced before.

"Where you have such a huge site, it may seem hopeless," says Houck, "but it's really just a matter of scale." Many agencies worked together at the scenes. Hundreds of volunteers helped too, by bringing fresh supplies, water, and food. "Sometimes they [volunteers] can be as important as the most highly trained individual," notes Houck.

Rescue crews searched and searched, aided by robots and dogs. Sadly, they found few survivors. Next came searches for evidence.

"No matter how big, you have to do a search of the scene," notes Edward Robinson, an Arlington, VA, police officer and assistant professor at George Washington University's forensic science department. Typically, officers take detailed notes. They measure and diagram the crime scene. They photograph and

在犯罪现场工作

马克思·胡克是西弗吉尼亚大学刑侦科学项目主任。他说:"在犯罪现场进行工作,最关键的一点就是组织工作。要制定一个计划。"他同联邦调查局线索证据部门一起调查五角大楼被撞案。在入室盗窃案中,做计划就是要确保没有人受到伤害,保护现场,然后认真系统地搜索证据。9·11惨案的犯罪现场比任何人遇到过的任何现场都要大。

胡克说:"当你遇到这么大的现场的时候,你可能感到没希望了。但这实际上不过是问题的大小而已。"许多机构的工作人员一同协作,在现场展开工作。成千上万的志愿者也加入到其中,带来了新鲜的物品、水和食物。胡克注意到:"有时,他们(志愿者们)同经过良好训练的人员一样重要。"

在机器人和警犬的帮助下,营救人员 开始搜索。不幸的是,他们几乎没有找到几 位幸存者。接下来,他们开始搜寻证据。

爱德华·罗宾逊是弗吉尼亚州阿灵顿市的一名警官,身兼乔治·华盛顿大学刑侦系的助理教授。他提出:"不论现场有多大,你都要对它进行搜查。"通常,警官们在搜查过程中都做详细的记录。他们对现场进行测量,并画出现场图。他们

measure any evidence in place and in relation to fixed features of the scene.

"Sometimes not just what it is, but where it is makes a difference," explains Robinson. Officers then "bag" and label evidence. Labels and chain-ofcustody records link evidence back to the scene. At small crime scenes, one officer can do all these tasks.

"As the scene gets more important or more elaborate," says Robinson, "specialization is more efficient." At the Pentagon crash site in Arlington, searchers walked methodically along grid lines. They flagged anything they found: victims' remains, plane parts, personal possessions, and so on. Other workers would then photograph the evidence. Technicians packaged things in paper, plastic, or other materials to best preserve them.

"You've got an enormous amount of tedium and repetition, but it's all critical," stresses Robinson. Thanks to their thoroughness, for example, searchers found identification for all five hijackers on American Airlines Flight #77 that crashed into the Pentagon.

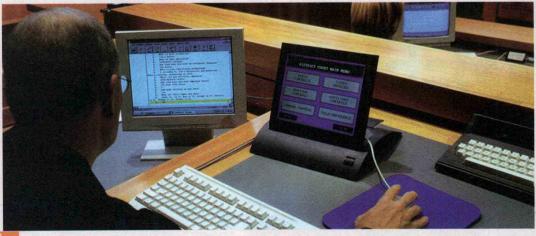
Such a search was not an option at the 16block World Trade Center crime scene. Two 102story buildings, two planes, other building debris, and more materials collapsed into a huge mound. 拍摄并测量现场的所有证据的位置,以及它们与现场中其他固定物体之间的相对位置。

罗宾逊解释说:"有的时候重要的不是物体本身,而是它所处的位置。"警官们随后将证据"装起来",并且贴上标签。这些标签和一系列的羁押记录就会把证据同现场联系起来。在小的犯罪现场,一名警官就可以做到这一切。

罗宾逊说:"随着现场变得越来越重要和复杂,专门化的分工就更为有效。撞向五角大楼的那架飞机坠落在阿灵顿市。在那里,搜查人员沿坐标方格线有规律地来回巡视。他们把发现的任何东西都插旗标记:遇难者的遗骸、飞机的碎片、乘客的个人财物等等。另外一些工作人员则对这些证据进行拍照。为了能最好地保存这些证据,技术人员把证物用纸、塑料袋或其他包装材料收藏起来。

罗宾逊强调说:"你面对的是大量单调和重复的工作,但这种工作是至关重要的。"正是由于他们所进行的彻底搜查,搜查人员才确认了撞向五角大楼的美洲航空公司#77航班上的全部五名劫机者的身份。

这样的搜查在跨越 16 个街区的世贸中心现场,就不是一个选择了。两座 102 层高的楼、两架飞机、其他建筑的残骸和另外更多的材料都在一刻内崩溃,成了一堆巨大的



Rescue officers searched for survivors and retrieved some remains. But a complete search was impractical.

"Rule #1 in processing a crime scene is flexibility," stresses Houck. "You have to be flexible and think about what's going to be sufficient to get the job done efficiently." To allow a thorough search, the Army Corps of Engineers set up a system to move the material by barge to the closed Fresh Kills landfill on Staten Island.

"There, all the debris was put on sorters or raked through several times by law enforcement agencies, trying to find clues — anything they could use to identify victims," explains Wayne Stroupe of the Army Corps of Engineers. Human remains went into 18 refrigerated trailers. "It was probably some of the most gruesome work that had to be done," says Stroupe. "But they did it, and they did it in a lot less time than people had guessed it would take."

IDENTIFYING VICTIMS

Most victims' remains were scattered. Fires burned lots of evidence, too. Identifications at the Pentagon and Pennsylvania sites had very high success rates. But the World Trade Center had thousands of victims. Only ten of them were recognizable by sight.

Forensic odontologists studied victims' teeth. They compared findings to missing persons' dental records. Fillings, signs of teeth extractions, size and shape of teeth, and pulp cavities (soft areas within teeth) all gave clues.

DNA analysis faced huge challenges. Examiners collected almost 20,000 remains from the World Trade Center site. They came from almost 1,500 people. But scientists got complete DNA samples for only about half the cases.

"These bodies were sitting in very hostile conditions for about three weeks," notes Charles Brenner, 废墟。救援官员们只能搜寻幸存者和收 集一些残骸。要进行全面的搜寻是不实 际的。

胡克强调说:"处理犯罪现场时,首 先要注意的就是工作的灵活性。你必须 非常灵活,要考虑将足以有效地完成工 作之事。"为了要进行全面的搜索,军队 工程师们用驳船采用一种系统的方法将 废墟运到斯塔腾岛上全封闭的环保垃圾 场里。

韦恩·斯托普是一名参加救援的工程师。他解释道:"在那里。所有的残片都被放到分类机上,或由执法机构的人员对废墟堆进行多次过滤清查,目的是设法找出线索,即任何可以确定遇难者身份的东西。人体的遗骸被放入18辆冷冻车上。斯托普说:"那也许是必须完成的最可怕的工作了。"然而,他们却完成了这项工作,并且所花费的时间比人们预想的要少得多。

确认遇难者的身份

大多数遇难者的遗体都散落四处。 大火也烧毁了许多证据。在五角大楼和

度夕法尼亚州飞机失事的地点,人们所进行的遇难者身份确认工作的成功率非常高。然而,世界贸易中心那里的遇难者有几千

名。只有十名遇难者的身份可以用肉眼识别出来。刑侦牙医对死者的牙齿进行研究。他们把发现的线索同失踪人员的牙科病历进行比较。补过的牙、拔过的牙、牙齿的大小和形状、齿窝(牙齿里面柔软的部分)都可能提供线索。

DNA分析遇到了巨大的挑战。调查

referring to smoldering fires at Ground Zero. 者从世界贸易中心现场搜集到了大约二万份 Brenner is a forensic mathematics consultant who 死者的遗骸碎片,它们来自1500名遇难者。然 wrote computer programs used in the World 而,科学家们收集到的完整的DNA样本还

Trade Center DNA identifications.

When prior samples of victims' own DNA weren't available for comp-arison, examiners got relatives' DNA. One of Brenner's programs screened cases and gave priority to the least difficult DNA analyses. It also flagged which victims' samples to compare with which families. Another program by Brenner determined if the variable parts of vic-

tims' DNA were simultaneously consistent with a missing person's parents, children, or other relatives. Thus, examiners could identify more people quickly.

Advances in sensitivmitochondrial ity and experimentation with a new technique let labs analyze some DNA samples that might otherwise have been useless. Labs also looked at

mitochondrial DNA. Sometimes this stays intact even after DNA from the cell nucleus is unusable.

Examiners used other technologies, too. Fingerprints helped a lot, says Houck. Serology compared blood types and other body fluids, where possible. Documents from the debris, like driver's licenses, backed up findings also.

不到一半。

查尔斯·布莱纳尔 说:"这些尸体在极其恶 劣的条件下保存了长 达三周。"他指的是灾 DISTRICT COURT MAIN MENU 难现场燃烧的余火。 布莱纳尔是刑侦数 学顾问。他为世界 贸易中心 DNA 鉴 定工作设计了电 TELECONFEREN

> 当人们无法获 得遇难者以前的DNA 样本来讲行对比时,调 查人员取来了他们亲属 的DNA样本。布莱纳尔的其中

脑程序。

一个程序是对各种情况进行筛选。对于 那些相对简单的 DNA 分析案例给予优先。这 一程序还标出了哪些遇难者的DNA样本要同 哪些家庭的 DNA 样本进行比较。他设计的另

> 一个程序能够确定遇难者的不同部 分的 DNA 是否同失踪人员的父母、 儿女或其他亲属的 DNA 相一致。 这样,调查人员就能更快地确定更 多人的身份。

> > 随着检验灵敏度的提高和对

于新技术的实验,现在实验室中可以对以 前被认为是无用的 DNA 样本进行分析。在实 验室中,人们还要研究线粒体 DNA。有的时 候,即便是细胞核中的 DNA 已经不能用了, 线粒体还是完好无损的。

调查人员还使用了其他的一些技术。胡 克说,指纹鉴定也给他们带来了很大的帮助。 在可能的情况下,人们利用血液学对血型和

for it

Relating to mitochondria,

which are tiny bodies inside

a cell that produce eneryg

LOOKING AHEAD

Several hundred World Trade Center victims remain unidentified. The medical examiner's office will dry and preserve their remains. Future technological advances might yield more answers.

No one ever wants to face another tragedy like the Sept. 11 attacks. But the lessons learned from careful crime scene investigations on this huge scale will be helpful to all areas of forensic science in the future.

其他的体液进行对比。一些文件的碎片,比如 驾驶执照等也会证实发现的线索。

向前看

还有几百名世界贸易中心的遇难者的身份难以确定。医学检测部门将这些遗体弄干并保存。未来科技的发展可能会给人们提供更多的答案。

没有任何人想再面对一次像9·11事件一样的惨剧。但我们从对这一巨大规模的犯罪现场的细致侦查中所学到的教训,将对未来刑侦科学的各个方面有所帮助。

So, You Want to Be a Forensill Sellentist?

Are you:

- honest?
- fair, impartial, and objective?
- methodical?
- analytical?

Do you:

- · have an enquiring mind?
- like science?
- like doing puzzles?
- pay attention to detail?

你是否

- 诚实?
- 公平、公正和客观?
- 有条理?
- 善于分析?

你

- 有一个善于探究的头脑吗?
- 喜欢科学吗?
- 喜欢玩拼图吗?
- 关注细节吗?

那么。你想成为一名测侦专家吗?

MORE Forensia Schenge Specialties

Crime scene investigator (identification officer/technician) — Documents evidence at crime scene. Collects and notes location of evidence, may take measurements and photographs and make diagrams.

犯罪现场侦查人员(身份鉴定官/技术人员)——在犯罪现场记录证据。搜集并且记录证据所处的位置。可能还要进行测量、拍照和画图。

Criminalist — Forensic scientist who collects and examines physical evidence: fibers, hair, fingerprints, residues, soil, weapons, body fluids, glass, paint, and so forth.

犯罪学家——搜集和研究实物证据的刑侦学家。 这些证据包括:纤维、毛发、指纹、残留物、土壤、 武器、体液、玻璃、油漆等等。

Forensic pathologist — Medical doctor who conducts autopsies, looking at soft tissues to identify the circumstances, cause, time, and manner of death.

刑侦病理学家——即法医,他们对尸体进行解剖,观察体内的软组织,以便确定死亡的环境、死因、死亡时间和致死的方式。

Medical examiner/coroner — Responsible for seeing that the cause and manner of death are

determined; decides whether an autopsy is necessary. The medical examiner is a medical doctor (often a forensic pathologist); the coroner is a government official and may not be a doctor.

医学检验员/验尸员——负责确定死亡的原因和致死的方式。他们决定是否要进行尸体解剖。医学检验者是一名医生(经常是刑侦病理学家);而验尸员一般是一名政府官员,可能并不是一名医生。

Forensic radiologist — Interprets X-ray evidence.

刑侦放射学医师——解释X光照射出来的证据。

Forensic psychologist — Provides opinions about the mental state of defendant, jury behavior, risk of violence, witness accuracy, etc.

刑侦心理学家——就被告的心理状况、陪审团的行为、暴力风险、证词准确性等方面的问题提供见解。

Forensic serologist (hematology) —

Examines blood to identify source through blood — typing and DNA analysis.

刑侦血液专家(血液学)——检查血样,通过辨别血型和 DNA 分析来判断其来源。

Forensic odontologist (dentist) — Studies teeth, dental records, and bite marks to identify suspects or victims.

刑侦牙科专家 (牙医) ──同研究牙齿、牙科记录和咬过的痕迹来确定犯罪嫌疑人或受害者的身份。

Forensic chemist — Analyzes chemical evidence: paint chips, dyes, bomb fragments, ashes, and other chemicals.

刑侦化学家——分析化学方面的证据:油漆碎片、染料、炸弹碎片、灰烬和其他的化学物质。

Forensic toxicologist — Examines blood and other body fluids looking for drugs, poison, alcohol, and other chemicals.

刑<mark>侦毒物学家</mark>——检查血液和其他体液,在其中寻找毒品、毒药、酒精和其他的化学品。

Forensic anthropologist — Recovers and examines bones and skeletons to help identify bodies and determine manner of death.

刑侦人类学家——复原和检查骨头和骨架,帮助确定死者的身份和致死的方式。

Forensic geologist — Examines rock and soil evidence to determine, for example, whether the soil on a suspect's shoe is the same as that at a crime scene.

刑侦地质学家——通过研究岩石和土壤来确定嫌疑人鞋上的土是否同犯罪现场的土壤一样,以及类似的问题。

Forensic entomologist — Studies insect activity (e.g., on a dead body to estimate time of death).

刑侦昆虫学家——研究昆虫的活动。比如,通过研究昆虫在尸体上的活动来确定死亡时间。

Forensic engineer — Examines failure or behavior of equipment or structures such as buildings or bridges.

刑侦工程师——检查各种设备的运行和故障 情况,以及房屋和桥梁等结构的情况。

Forensic botanist — Examines plant evidence to ascertain, for example, where a body has been, and how long it has been there.

刑侦植物学家——从植物中寻找证据,以确定尸体曾在某个地方出现并滞留了多长时间等问题。



刑侦科学参亚细分



Forensic dendrologist — Examines wood evidence to determine origin. (Did this sliver come from that table?)

刑侦树木学家——检查一些木质证据以确定某一物体的来源。(这一小片木头是从那张桌子上掉下来的吗?)

Forensic palynologist — Uses plant pollen and spores found to link suspect, victim, location, and evidence.

刑<u>侦花粉学家</u> 利用植物的花粉和孢子把嫌疑人、死者、地点和证据联系起来。

Wildlife forensic scientist — Examines evidence when the victim is an animal, as in the case of poaching and illegal trade of animal products (e.g., identifies species based on body parts, examines firearms, prints, pesticides, etc.).

野生动物刑侦科学家——当受害者是动物的情况下搜寻证据,比如在偷猎案和非法买卖野生动物案中。(通过动物的身体部位来判断它的种类,还要调查火枪、脚印和杀虫剂等线索。)

Forensic ecologist — Examines environmental evidence (e.g., illegal dumping and hazardous waste).

刑侦生态学家——从环境中寻找证据(例如, 非法乱倒废物和危险的垃圾)。 Forensic artist and sculptor — Creates composite drawings or three — dimensional facial reconstruction to help identify a suspect or victim.

刑侦艺术家和雕塑家——画出结构图和三维面部特征来帮助确定嫌疑人和死者的身份。

Forensic linguist — Examines word patterns used in written and spoken communication (syntax) to determine who, from a short list of suspects, may have been the author or speaker.

刑侦语言学家——分析书面或口头交流中的用词规律(句法)。从而在为数不多的嫌疑犯中,确定谁可能是说话者或文字的作者。

Polygraph examiner — Tries to determine if someone is telling the truth by measuring changes in their sweat gland activity, breathing, and blood pressure.

刑侦测谎专家(波动描记器检测员)——通过测量人们汗腺的活动、呼吸和血压的变化,确定被检测人说的是不是真话。



Your DAIM

Profile: The Identity You Can't Escape

by Ellen Butts and Joyce Schwartz

Discover what a DNA profile is and how it's created.
The story below is fiction, but the science is fact.
The names have been changed to protect the innocent.

探索什么是DNA档案,了解它是如何被意见起来的。 下面的故事是虚构的,但其中的科学道理就是事实。 为了保护当事人,其中的一些人名已被变动。

你的 DNA 档案。

你难以逃脱的身份

THE SCENE OF THE CRIME

A call from Mrs. George to police headquarters reports an unfamiliar car that has been parked for two days on an isolated road near her home. Police Officer Adams responds immediately. He pulls up behind the car, and cautiously approaches it

A woman's limp body is stretched across the front seat. Her head hangs off the passenger's side, its long hair trailing from the partly open door. The officer's eyes quickly focus on the dark bruise around the victim's neck. "Looks like a homicide," he thinks, as he calls the station for help.

After pulling on the protective clothing investigators wear to prevent contamination — a Tyvek suit, latex gloves, booties, and mask — Officer Adams checks the body for a pulse and finds none. Then the officer cordons off the crime scene to protect the evidence.

Inspector Tate and Ms. Clark, a forensic photographer, arrive within minutes. After they suit up, they inspect the body. Officer Adams enters their observations into a laptop: trampled grass near the car, a woman's body squeezed between the back of the seat and the gearshift, crumpled newspapers, a baseball cap lying in the grass several yards away.

Inspector Tate puts the baseball cap into a paper bag and ropes off the additional area. When Ms. Clark finishes photographing the body, the team carefully removes it for transport to the chief medical examiner's office.

Inside the car, the team dusts for fingerprints, inspects for hairs, removes the newspapers that have some small brownish spots on them, and

犯罪现场

乔治太太给警察总部打电话,说她发现在 她们家附近的一条荒僻的道路上有一辆不认识 的车。这辆车停在那里已经两天了。亚当斯警 官立即作出反应。到了那里后,他把警车停在 那辆车的后面,然后小心翼翼地靠近。

一名女子纤弱的尸体瘫在前座,她的头倒向旁边的乘客位,长长的头发从略开的门中垂了下来。警官的双眼立刻盯住了死者颈周围黑色的疤痕。"看来像是凶杀",他心里在想。然后,他给警察局打电话,寻求帮助。

警官亚当斯穿上了侦查人员用的防感染的防护服——一套泰威克合成纤维服,加上皮靴、乳胶手套和口罩。他开始检查女子的脉搏,发现没有任何脉动。然后,为了保护证据,警官封锁了犯罪现场。探查人员塔特和刑侦摄影师卡拉克女士几分钟后也到达了现场。穿上防护衣后,他们对尸体进行了检验。亚当斯警官把他们观察到的结果输入了笔记本电脑中:车旁被践踏的草地、一名妇女的尸体被塞在座位靠背和变速器之间、揉成一团的报纸、几米外草地上发现的一顶棒球帽。

侦查员塔特把棒球帽放到了纸袋里,并把 周围的一些区域也用绳子圈了起来。当克拉克 女士对尸体拍完照后,大家小心翼翼地把尸体 移出汽车,并送往主任法医的办公室。

在汽车里,专案组的成员们通过清理灰尘 来发现指纹,寻查毛发,收起上面带有一些褐

