

LEGACY OF HEROES



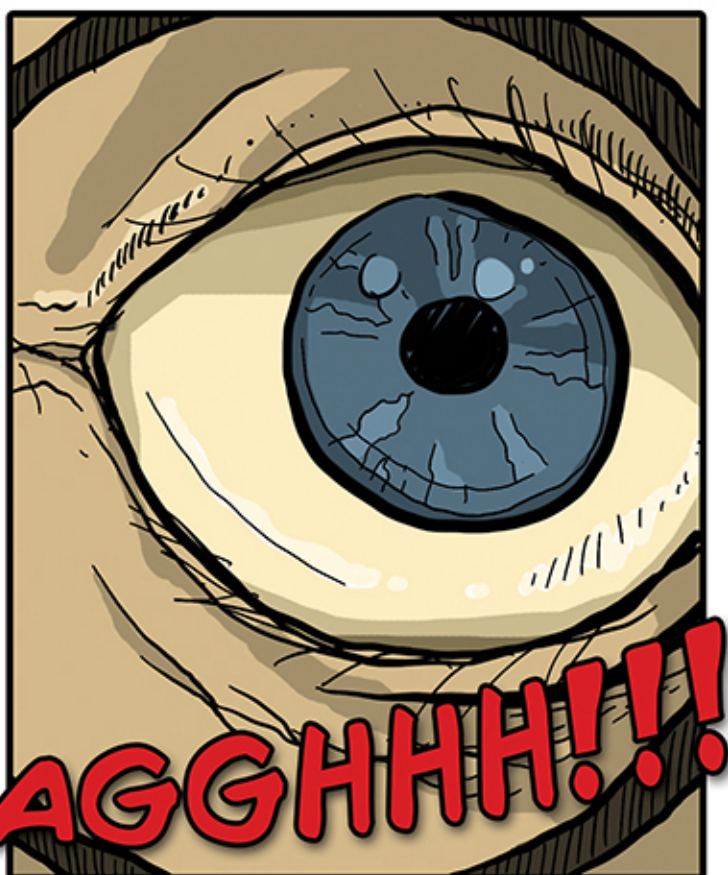
CRIME SCENE DO NOT CROSS



BEHOLD THE **PROOF**

CELEBRATING 100 YEARS OF CRIME SCENES INVESTIGATION UNIT





HORACE REYNOLDS. THE FIRST PERSON HIRED BY THE EDMONTON POLICE DEPARTMENT TO COLLECT AND CATALOGUE FINGERPRINTS.



DACTYLOSCOPY!
A CLASSIC, MY BOY,
A CLASSIC!

DAC-TY-LO-SCOPY?

IS IT A BOOK ABOUT
DINOSAURS?



Dactyloscopy
(Dak-tuh-los-kup-ee)
Greek Origin
dactylos : Finger
Skopein : to watch



DINOSAURS? BAH!
DUST AND BONES.
TELL ME, WHAT'S
YOUR NAME?

GEORGE.



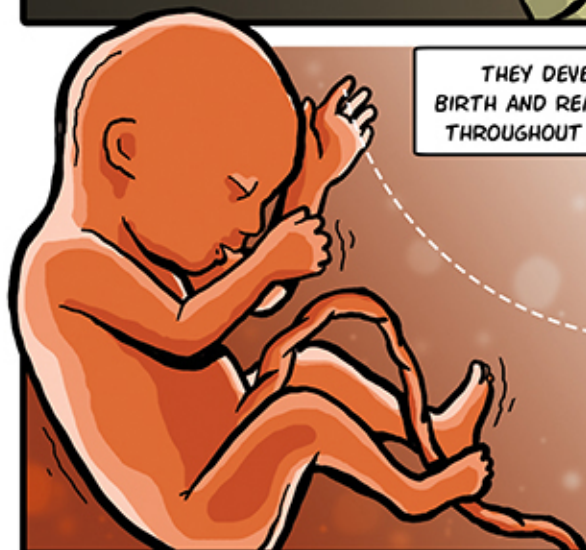
GLAD TO MAKE YOUR
ACQUAINTANCE, GEORGE!
MY NAME IS HORACE.
PULL UP A STOOL.

DACTYLOSCOPY IS THE
SCIENCE OF COMPARING
FINGERPRINTS TO ESTABLISH
A PERSON'S IDENTITY.

GEORGE, LOOK
AT YOUR HANDS.
YOUR FINGERPRINTS
ARE UNIQUE AND
PERSISTENT.



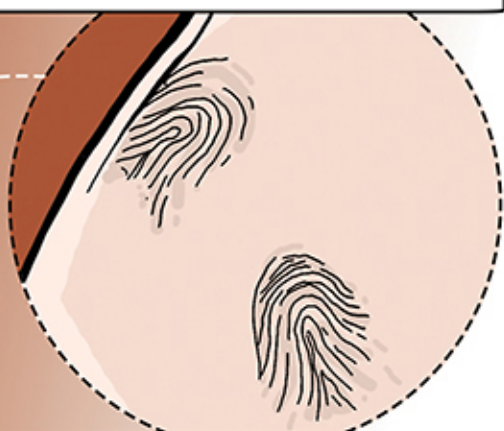
THEY DEVELOP BEFORE
BIRTH AND REMAIN UNCHANGED
THROUGHOUT YOUR LIFETIME.



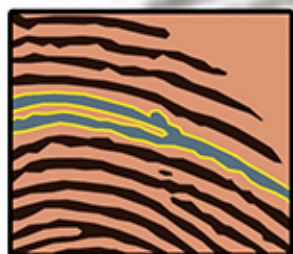
FINGERPRINTS HAD BEEN USED FOR
THOUSANDS OF YEARS TO SIGN
CONTRACTS AND PROVE PEOPLE'S
IDENTITIES WHEN HENRY FAULDS
CAME ALONG.



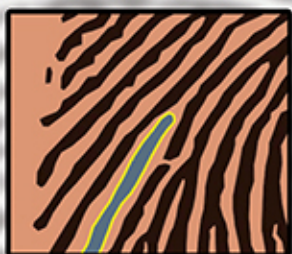
FAULDS WAS A 19TH CENTURY SCOTTISH PHYSICIAN AND MISSIONARY
WORKING IN JAPAN. IT WAS HERE, WHILE EXAMINING ANCIENT PIECES
OF POTTERY, THAT HE FIRST SUGGESTED SMALL FRAGMENTS OF
FINGERPRINTS COULD BE USED TO IDENTIFY CRIMINALS.



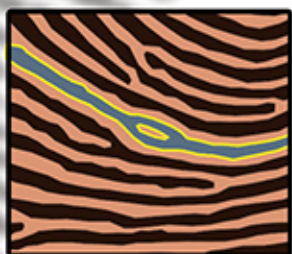
WHAT FAULDS HAD NOTICED WERE THE FINGERPRINT IMPRESSIONS
LEFT BEHIND HUNDREDS OF YEARS EARLIER BY THE POTTERS.



BIFURCATION



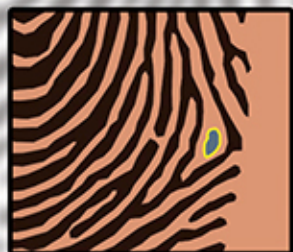
RIDGE ENDING



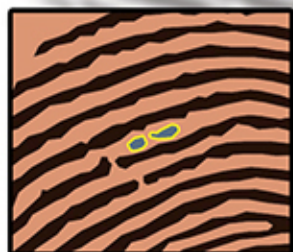
ENCLOSURE

GALTON'S GREATEST ACHIEVEMENT WAS THE REALIZATION THAT FINGERPRINTS ARE MADE UP OF FRICTION RIDGES.

THE DETAILS CONTAINED IN THE RIDGES ARE ONE OF THE MANY FEATURES THAT MAKE FINGERPRINTS UNIQUE. WE CALL THESE "GALTON DETAILS".



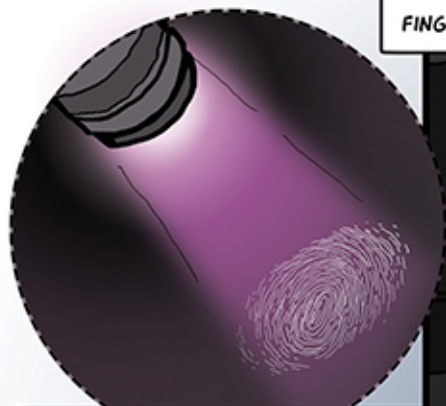
ISLAND



RIDGE DOT

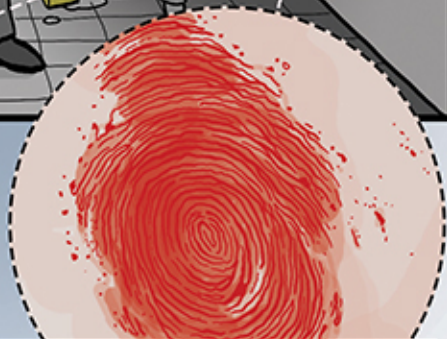
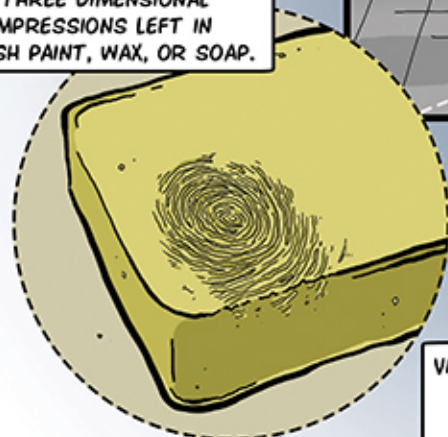


FINGERPRINTS CAN BE LATENT, MOLDED, OR VISIBLE.



LATENT PRINTS ARE ONLY VISIBLE USING SPECIAL FORENSIC LIGHT SOURCES, CHEMICALS, OR POWDERS.

MOLDED FINGERPRINTS ARE THREE DIMENSIONAL IMPRESSIONS LEFT IN FRESH PAINT, WAX, OR SOAP.



VISIBLE FINGERPRINTS ARE MADE WHEN A FOREIGN SUBSTANCE LIKE BLOOD OR DIRT ON SKIN COMES IN CONTACT WITH ANOTHER SURFACE, LEAVING AN IMPRESSION BEHIND.

THE MOST COMMON METHOD FOR DEVELOPING FINGERPRINTS IS DUSTING THEM WITH A FINGERPRINT BRUSH USING SPECIAL POWDERS.



THE POWDER CLINGS TO FINGERPRINT RESIDUE (SWEAT AND OILS) REVEALING THE FINGERPRINT.



THE FINGERPRINT IS PHOTOGRAPHED ...AND LIFTED USING A TAPE LIFTER. OVER THE YEARS DIFFERENT TECHNIQUES HAVE BEEN DEVELOPED TO HELP POLICE SEE LATENT PRINTS. IN 1932...

1932? BUT IT'S ONLY 1916.

THIS IS A COMIC BOOK, GEORGE!
WE CAN DO ANYTHING, GO ANYWHERE.

...IN 1932, POLICE USED
SILVER NITRATE TO REVEAL
FINGERPRINTS ON A LADDER
USED IN THE LINDBERGH
BABY KIDNAPPING IN THE
UNITED STATES.

THE SUPER GLUE OR CYANOACRYLATE
FUMING METHOD WAS FIRST USED IN 1977.
THE PROCESS TOOK DAYS.

THE CANADIAN INVENTION OF THE
CYANOACRYLATE VACUUM CHAMBER CUT
THE TIME DOWN TO TWENTY MINUTES!

TODAY, THE MOST COMMON METHOD
FOR REVEALING LATENT PRINTS ON
PAPER IS TO DIP THE PAPER INTO
NINHYDRIN, A SPECIAL CHEMICAL.

WHEN THE NINHYDRIN DRIES,
PURPLE COLOURED FINGERPRINTS ARE REVEALED.

IN THE MID-SIXTIES, THE EDMONTON POLICE DEPARTMENT DEVELOPED ITS OWN STORAGE AND RETRIEVAL SYSTEM FOR FINGERPRINTS CALLED THE CARD AND ROD SYSTEM.

SYSTEM INVENTED BY STAN STEVENS, TERRY DAFOE, AND ERWIN ANDERS, ALSO KNOWN AS THE KEYSEARCH LATENT FORM I.



GEORGE, I'D LIKE YOU TO MEET A FRIEND OF MINE. RETIRED POLICE INSPECTOR BARNEY STEVENS WORKED WITH THE CARD AND ROD SYSTEM WHEN HE WAS IN FORENSICS.

THE CARD AND ROD SYSTEM HELPED US COMPARE AN UNKNOWN PRINT WITH KNOWN PRINTS OF CRIMINALS.

HOLES WERE PUNCHED IN A SPECIAL CARD WITH A KNOWN SET OF FINGERPRINTS ON IT.



BARNEY STEVENS



THE HOLES IDENTIFIED EACH FINGER AND ITS GALTON DETAILS. CARDS OF KNOWN FINGERPRINTS WERE STORED IN DRAWERS, ONE DRAWER FOR EACH YEAR.

A FORENSICS OFFICER STUDIED THE IDENTIFYING FEATURES OF THE UNKNOWN PRINT, THEN LOOKED FOR KNOWN PRINTS WITH THE SAME FEATURES.



5000 FINGERPRINTS WERE KEPT ON FILE AT ANY GIVEN TIME.

WHEN A CRIME SCENE INVESTIGATOR COLLECTED A LATENT FINGERPRINT AT A CRIME SCENE, THAT PRINT WAS COMPARED TO PUNCH CARDS OF KNOWN CRIMINALS ALREADY ON FILE.



THE OFFICER WOULD TAKE A STACK OF CARDS OF KNOWN PRINTS, AND INSERT A ROD THROUGH THE SPOT WITH THE SAME IDENTIFYING FEATURES AS THE UNKNOWN PRINT.

ALL OF THE CARDS WITH THE SAME FEATURES FELL OFF OF THE ROD. THESE CARDS WOULD BE EXAMINED TO TRY TO MATCH A KNOWN PRINT WITH THE UNKNOWN PRINT.

GEORGE, I WANT YOU TO MEET ANOTHER FRIEND OF MINE ...AFIS!
AFIS AUTOMATICALLY SEARCHES UNKNOWN PRINTS AGAINST A DATABASE OF KNOWN PRINTS.




AFIS - AUTOMATED FINGERPRINT IDENTIFICATION SYSTEM

POLICE IN EDMONTON STARTED USING AFIS IN THE LATE EIGHTIES.



ONLY A FEW MINUTES AFTER IT WAS TURNED ON, AFIS HELPED POLICE IDENTIFY A KIDNAPPER AND LED TO THE RESCUE OF HIS YOUNG VICTIM!





EVEN TODAY, OVER ONE HUNDRED YEARS
AFTER ITS INVENTION, FINGERPRINTING
STILL PLAYS AN IMPORTANT ROLE IN
HELPING POLICE OFFICERS SOLVE CRIMES.

DACTYLOSCOPY
FOREVER!

EDMONTON
POLICE
SERVICE

CRIME SCENES INVESTIGATION UNIT
CELEBRATING 100 YEARS!
1916-2016

WRITTEN BY JEFF AWID. ILLUSTRATED BY JARED ROBINSON
SPECIAL THANKS TO CST. DINO PIZZI, CST. NANCY ALLEN, AND BARNEY STEVENS