# CLASSIFYING PALMPRINTS

## A COMPLETE SYSTEM OF CODING, FILING AND SEARCHING PALMPRINTS

HAROLD L. V. ALEXANDER

*Detective Sergeant*
*Liverpool and Bootle Constabulary*
*England*

This manual is the first reference published to contain a system of coding the papillary minutiae of the palmar surface . . . a reference long overdue and essential for the updating of this facet of Dactylography. Unlike most other publications discussing this science, it deals mainly with the various aspects of the palmprint.

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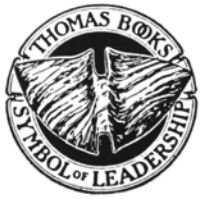


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# PREFACE

Since the early days of crime detection, scientists have realized that fingerprints are a positive means of identification. Much has been said and written about fingerprints and fingerprint classifications by many eminent anatomists and anthropologists. From the works of three such persons, Sir Edward Herschel, Sir Francis Galton, and Sir Edward Henry have evolved our present fingerprint classifications.

Of palmprints and palmprint classifications, very little has been said or written; this must be considered a serious omission in these days of advanced scientific detection. Often, when the only latent print discovered at the scene of a crime is that of a palmar impression, the only means of identifying the owner is by a suggested name.

The palmar classification system was introduced to the Fingerprint Department of the Merseyside Criminal Record Office at Liverpool, England, in 1965, mainly because of the lack of palmprint identifications. In the ensuing five years, there was a substantial increase in the number of latent palmprints submitted to the bureau for examination and over 250 of these prints were identified. These facts furnish indisputable evidence that the presence of an efficient palmprint system is a necessary and an integral part of the modern-day bureau.

*Classifying Palmprints* is one of the first references published on the subject. It has been written, primarily, for the students and members of the public interested in the field of dactylography, that they may more easily understand the intricacy of papillary classification. This manual contains many of the facts collated during the period of study and research which greatly assisted in the compilation of the system. Aspects of coding, taking, searching, and filing, as well as a unique method of coding deltas and loop core formations are graphically discussed. Various tables such as the disposition of pattern types on the palmar surface, delta types and loop core ridge variations, and a chart indicating the mode, pattern type, and palmar section of identifications are included to assist in the forming of filing systems. The palmprint classification system and statistics will no doubt be of valuable assistance to the experts universally engaged in dactylography, dermatoglyphic research, laboratories, hospitals, and universities researching into the relationship between serious illness and the areas of the human body bearing papillary ridges.

HAROLD L. V. ALEXANDER

# INTRODUCTION

Prior to the introduction of the classified system and in common with many other fingerprint bureaus, the Merseyside Criminal Record Office at Liverpool had many thousands of palmprints on official forms which were filed in numerical order only.

Consequently, the searching of palmprints found at scences of crime was an almost impossible task, and the scenes of crime collections contained many palmprints which remained undetected.

In order to make better use of palmprints found at the scene of crime, I devised this system of classifying, filing, and searching a palmprint collection which is essentially simple in operation. The time taken to classify a palmprint form is variable, but is 2½ minutes at the maximum. Furthermore, the growth of the palm will not alter the classification.

It is true to say that a palmprint nearly always contains sufficient detail to be used in court proceedings, whereas this cannot be said in respect of fingerprints, owing to the fact that a palmprint clearly contains the greater area of scrutiny. The average palmprint contains some 14 square inches of papillary minutiae, and the ridges traverse the surface in many directions, creating patterns and deltas. The disposition of the various pattern types determines the classification.

It is important to note that it is not necessary for a complete palmprint to have been found at a scene of crime in order that a search of this system be carried out. The classification is so devised that a scene-of-crime mark containing a pattern can be quickly searched in its respective area of the palm, viz. hypothenar, thenar, or triradiate.

The system is divided into four parts:

1. *Primary*. Patterns disclosed in any of the three sections are given a numerical value. This has the effect of segregating the sections—those with patterns and those without.
2. *Secondary*. Describes those patterns disclosed in the hypothenar section.
3. *Tertiary*. Describes those patterns disclosed in the thenar section.
4. *Quaternary*. Describes those patterns disclosed in the triradiate section according to their disposition.

Preference has been given to the section most frequently found at a scene of crime, namely the hypothenar, but by the elimination of certain of the primary

classifications, it becomes a simple matter to search a pattern which occurs in the thenar or triradiate sections.

Three subclassifications are used to speed the search of the more congested parts of the classifications:

1. Two sets of ridge count when a single loop or tented arch formation is disclosed in the triradiate section.
2. A delta classification when the hypothenar section is devoid of pattern—about 62 percent of palmprints recorded.
3. A core classification based on the number of ridge characteristics within the core of a single loop formation disclosed in the hypothenar section—about 20 percent of palmprints recorded.

Subclassifications 2 and 3 were incorporated into the system in 1968. It is worthy of note, to those persons interested in dermatological research, that each classification bears its own main line of configuration. Palmprints filed in classification order will group together the many varied lines of configuration, making it a simple matter to retrieve any line of configuration under review.

H. L. V. A.

# ACKNOWLEDGMENTS

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H. L. V. A.

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# CLASSIFYING PALMPRINTS

*Chapter I*

# BASIS FOR CODING

For the purposes of the classification, the palmar area is divided into three sections as shown in Figure 1.

*Hypothenar.* Area beneath the triradiate section on the little finger side. It is bounded by the distal transverse crease on the top and the radial longitudinal crease on the side.

*Thenar.* Area beneath the triradiate section on the thumb side. It is completely enclosed by the radial longitudinal crease.

*Triradiate.* Otherwise known as the interdigital area, is situated beneath the base of the fingers and is enclosed by the metacarpo phalangeal creases and the distal transverse crease.

To provide a base for coding this system of classification, the flow of ridges as disclosed in Figure 2 is considered to be *normal* in that no pattern is disclosed. The inverted arch formation at the base of the ring finger in the triradiate section is not considered to be a pattern.

### *Normal Flow*

1. In the hypothenar section the ridges tend to flow in a near horizontal manner at the base and then in an upward slant which approaches the perpendicular when the ridges merge with the thenar section.

2. In the thenar section the ridges tend to flow in a near perpendicular curve, similar to a large arch formation.

3. In the triradiate section the ridges tend to traverse the palm in a near horizontal manner except at the deltas where the three ridge streams meet.

Any deviation from the flow depicted in Figure 2 will be recorded as a pattern according to the definitions.

DEMARCATION OF PALMAR SURFACE

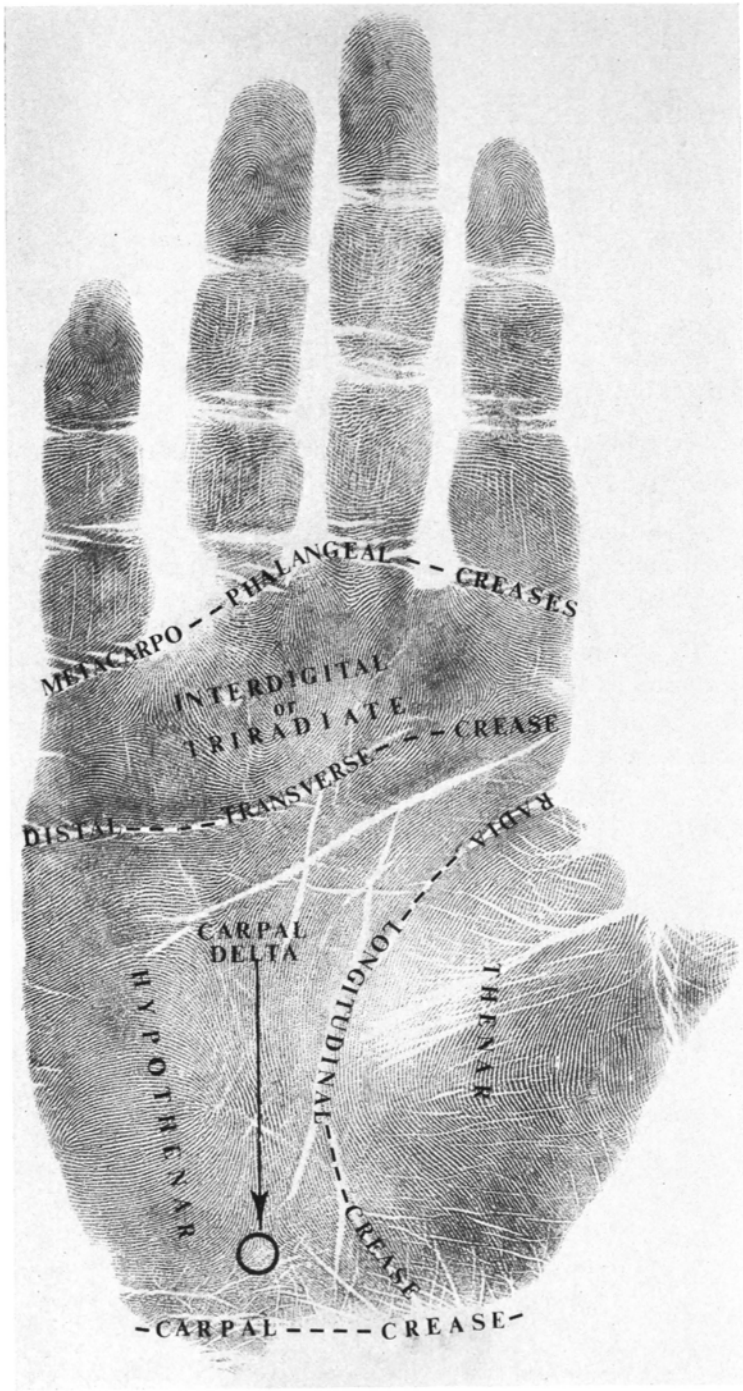


Figure 1.

Figure 2. The basic palm. Left palm devoid of patterns.