

Contents

Introduction	7
Chapter I. Evidence	11
1. Evidence in comparative view. Classification and functions of evidence. Acts of taking evidence	11
1.1. Notion of evidence, its legal characteristics	11
1.2. Basic meanings of the word "evidence"	16
a) A source of evidence	16
b) Means of evidence	18
2. Classification of evidence	20
2.1. Testimonial and physical evidence	20
2.2. Notional and sensual evidence	23
2.3. Direct and circumstantial evidence	25
2.4. Primary and derivative evidence	27
2.5. Certain and uncertain evidence	30
3. Evidential action and their kinds	31
Chapter II. Documents	34
1. Documents, notion, kinds and functions. Notion of document in Polish criminal law and forensic science	34
1.1. Notion of document	34
1.2. Notion of document in Polish criminal law	37
1.3. Notion of document in Polish criminal procedure law and forensic science	40
2. Types of documents	48
2.1. Primary and secondary documents	48
2.2. Official and private documents	50
2.3. Procedural and extra-procedural documents	51
2.4. Documents issued directly by a person and documents issued with the use of mechanical equipment	52
Chapter III. Expertise	55
1. Procedural and forensic issues	55
1.1. Definition of expertise	55
1.2. Subject of expertise	63
1.3. Object of expertise	66
1.4. Scope of expertise	68
2. Preliminary consultation of the criminal proceedings authority with the person possessing special knowledge	71
3. Admissibility of expert evidence	75
4. Supervision over expert's qualifications	77
5. Components of expertise	82
5.1. Examination	82
5.2. Report	83

5.3. Visual documentation as a component of the report	84
5.4. Conclusion	87
Chapter IV. Selected methods of technical examination of documents and their efficiency . . .	88
1. Components of a traditional document	88
1.1. Paper as the base of the document. Structure and properties of paper	88
a) Paper from natural fibres	91
b) Paper from synthetic fibres	92
1.2. Paper products and possibility of their examination	95
1.3. Protection of paper products	100
1.4. Writing materials	113
a) Inks	116
b) Ball-point inks	119
1.5. Writing materials as a kind of protection	122
2. Methods used in technical examination of documents	131
2.1. Physical-optical, spectral methods	131
2.2. Optical methods	133
2.3. Luminescence method	136
2.4. Spectral methods	138
a) Absorption spectra	138
b) Reflection spectra	140
c) Fluorescent spectra	140
d) Oscillation spectra	141
2.5. Spectroscopy in infrared ATR (Attenuated Total Reflection)	143
3. Use of non-destructive methods in technical examination of documents. Equipment used in non-destructive examination	144
3.1. Video Spectral Comparator	144
3.2. Raman Spectral Comparator	146
3.3. Electron Scanning Microscopy	147
3.4. Electrostatic Document Analyser	147
4. Examination of documents' age. Contemporary methods used in the examination of documents' age	151
4.1. Dating of writing materials by relative ageing. Dynamic methods	152
4.2. Dating of writing materials by comparing with the standard; dating by detecting markers. Static methods	156
4.3. Examples of dynamic methods	158
a) Method examining gradual disappearance of solvent in time. Examination by means of gas chromatography (GC)	158
b) Method examining changes of non-volatile ink components in time. Examination by means of high-performance liquid chromatography (HPLC) . .	159
c) Examination by means of thin-layer chromatography (TLC)	160
d) Method measuring extractability of ink as a function in time	161
4.4. Examples of static methods	164
5. Value of technical examination of documents as evidence	164
5.1. Differentiation of writing materials	164
5.2. Experiments	166
5.3. Discussion of results	373
5.4. Examples of technical examination of documents	411
Conclusions	435
Literature and sources of law	442