

**Pathological catalogue of the museum of Guy's Hospital : bones, joints, muscles, tendons, aponeuroses, bursae, etc. / Revised with numerous additions from the original catalogue of Dr. Hodgkin by Samuel Wilks.**

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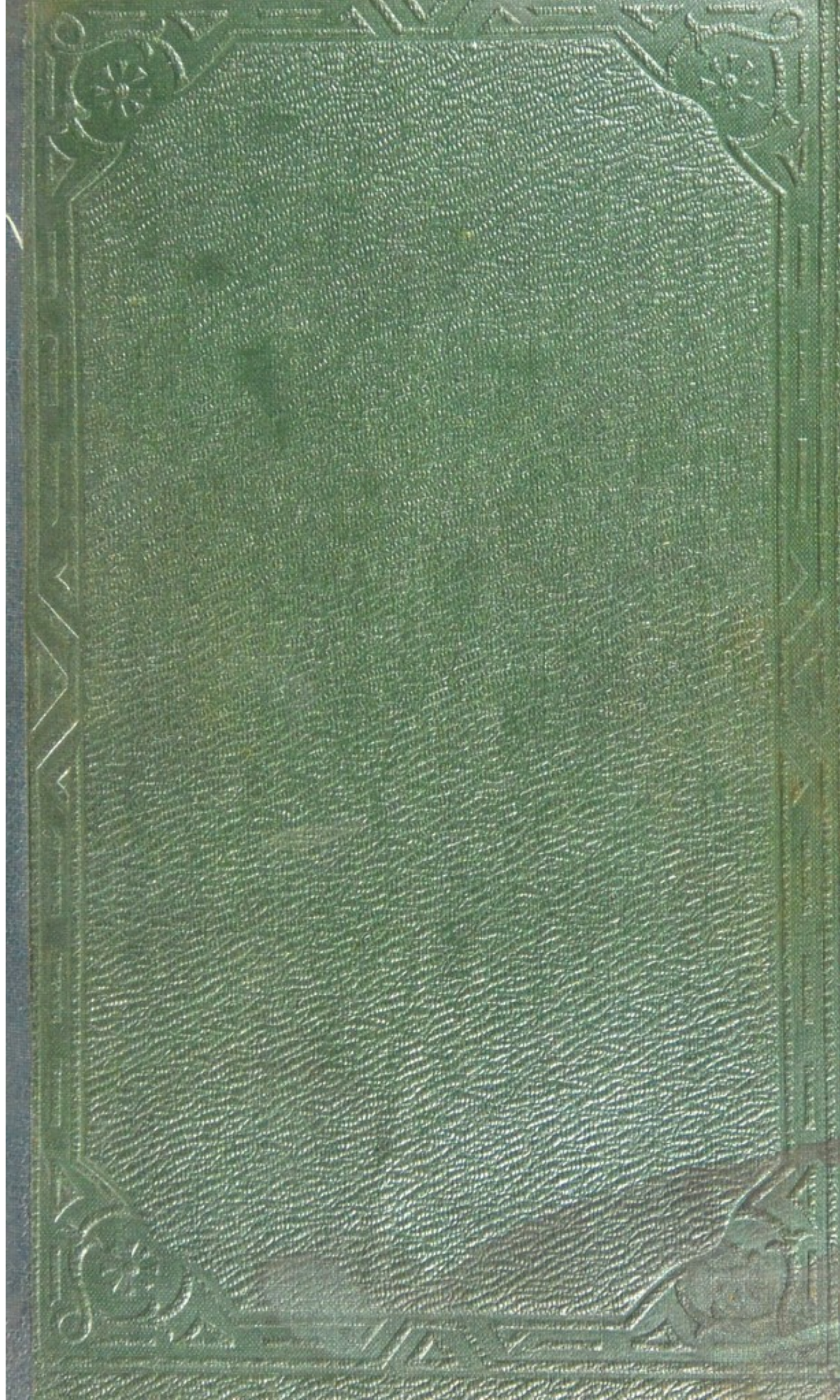
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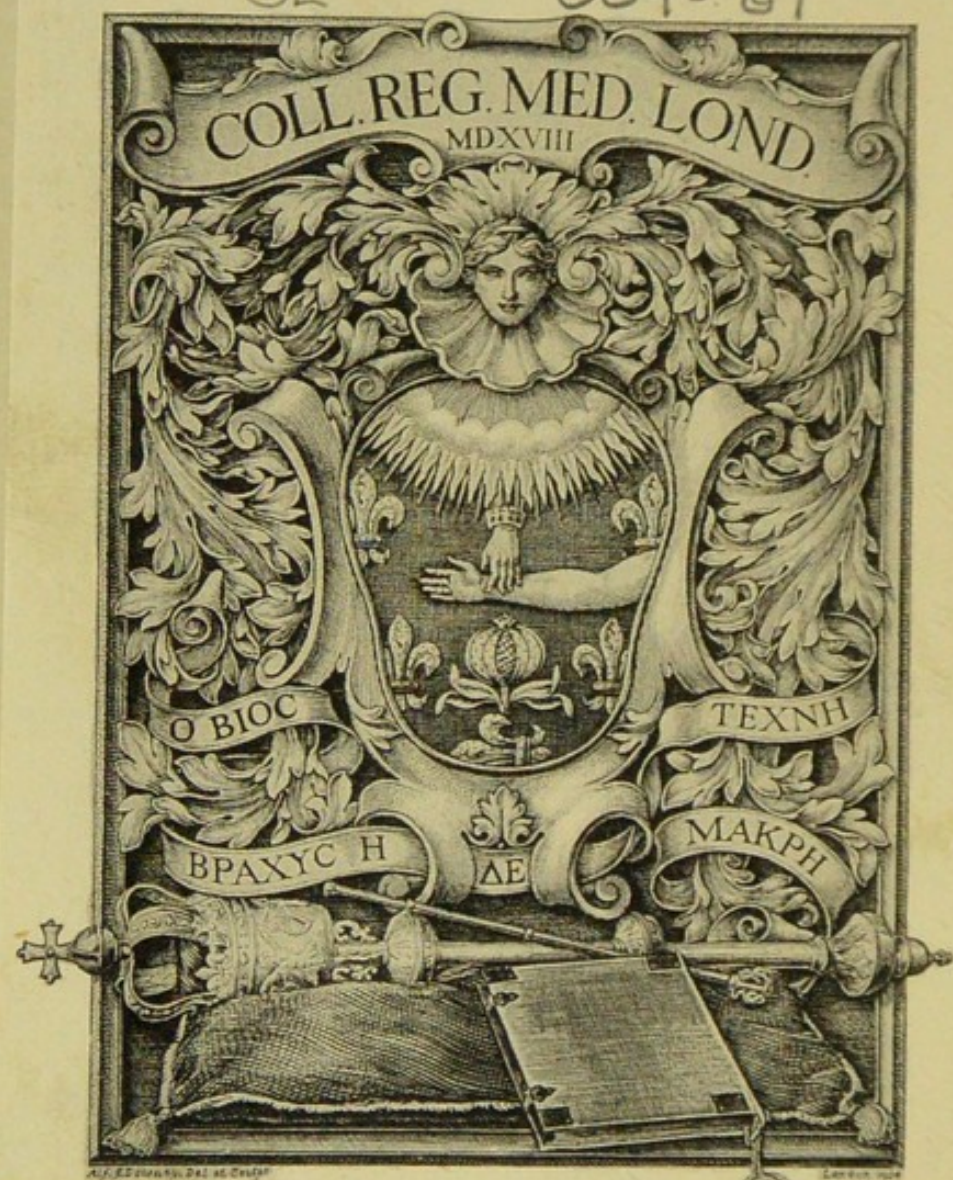
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PATHOLOGICAL CATALOGUE

OF THE

MUSEUM OF GUY'S HOSPITAL.

BONES, JOINTS, MUSCLES,  
TENDONS, APONEUROSES, BURSÆ, &c.

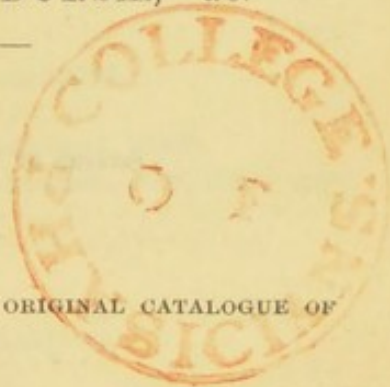
REVISED, WITH NUMEROUS ADDITIONS, FROM THE ORIGINAL CATALOGUE OF  
DR. HODGKIN, F.R.S., &c.,

By SAMUEL WILKS, M.D., LONDIN.,

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LONDON:

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# ANALYTICAL INDEX.

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## BONES.

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### SPINE.

#### MALFORMATION.

- Spina bifida, 1001, 1001<sup>40</sup>, 1001<sup>50</sup>, 1002<sup>60</sup>, 1003, 2546<sup>15</sup>.  
Spina bifida, combined with malformed skull, 2540<sup>20</sup>, 2540<sup>30</sup>, 2540<sup>47</sup>, 2540<sup>60</sup>,  
2541<sup>65</sup>, 2541<sup>70</sup>, 2541<sup>75</sup>, 2542<sup>15</sup>, 2557<sup>54</sup>.  
Spina bifida combined with hydrocephalus, 2551<sup>60</sup>, 2551<sup>63</sup>, 2551<sup>72</sup>.  
Atlas divided, 1000<sup>90</sup>, 1008<sup>62</sup>.  
Axis bifid, 1010<sup>60</sup>.  
Cervical and dorsal vertebræ divided and ankylosed, 1004<sup>92</sup>.  
Dorsal vertebræ, supernumerary, 1000<sup>60</sup>.  
Lumbar vertebræ, supernumerary, 1006<sup>90</sup>; last malformed, 1000<sup>60</sup>.  
Sacrum open posteriorly, 1004, 1004<sup>60</sup>; curved forwards, 1009, 1010; upper  
piece malformed, 1027.

#### HYPERTROPHY.

- Atlas, 1008<sup>51</sup>; sacrum, 1132<sup>60</sup>.

#### EXOSTOSIS, 1007<sup>5</sup>, 1017<sup>25</sup>, 1017<sup>50</sup>, 1017<sup>70</sup>, &c.; and see Ankylosis.

#### ATROPHY.

- Atlas, 1008<sup>60</sup>; and several others, from disease.

#### ABSORPTION BY PRESSURE OF ANEURISM, 1004<sup>75</sup>, 1004<sup>80</sup>, 1004<sup>85</sup>, 1489<sup>30</sup>, 1490<sup>21</sup>, 1490<sup>70</sup>, 1491, 1494.

#### ANKYLOSIS.

- Skull and atlas, 1007<sup>35</sup>, 1071, 1071<sup>35</sup>, 1071<sup>70</sup>, 1072, 1089<sup>60</sup> F.  
Atlas and axis, 1007<sup>35</sup>, 1071<sup>70</sup>.  
Cervical, 1007<sup>5</sup>, 1007<sup>35</sup>, 1011, 1011<sup>60</sup>, 1072.  
Dorsal, 1004<sup>92</sup>, 1006<sup>40</sup>, 1006<sup>63</sup>, 1007<sup>35</sup>, 1014<sup>35</sup>, 1014<sup>36</sup>, 1015, 1020<sup>70</sup>, 1021, 1024<sup>60</sup>,  
1047, 1048.  
Lumbar, 1000<sup>40</sup>, 1007<sup>35</sup>, 1015, 1017<sup>60</sup>.  
Lumbar and sacrum, 1000<sup>40</sup>, 1007<sup>35</sup>, 1009, 1017<sup>70</sup>, 1128<sup>25</sup>.  
Sacrum and ilium.—See Pelvis.

#### SUPERFICIAL ANKYLOSIS.

- Cervical, 1007<sup>10</sup>, 1011<sup>25</sup>.  
Dorsal, 1005, 1006, 1006<sup>66</sup>, 1007<sup>20</sup>, 1007<sup>30</sup>, 1007<sup>40</sup>, 1007<sup>50</sup>, 1007<sup>75</sup>, 1007<sup>80</sup>, 1011<sup>25</sup>,  
1014<sup>30</sup>, 1289<sup>40</sup>, 1289<sup>42</sup>.  
Lumbar, 1000<sup>25</sup>, 1006<sup>90</sup>, 1017, 1017<sup>25</sup>, 1017<sup>70</sup>, 1022<sup>40</sup>, 1022<sup>60</sup>.



ANKYLOSIS OF VERTEBRÆ TO RIBS.—See Ribs.

ULCERATION OR CARIES.

Cervical.—Atlas, 1018, 1018<sup>15</sup>.

Axis (odontoid process), 1010<sup>75</sup>, 1011, 1012, 1078<sup>66</sup>, 1078<sup>67</sup>.

Other vertebræ, 1018<sup>35</sup>, 1018<sup>40</sup>, 1030<sup>40</sup>, all of which, together with 1018<sup>15</sup>, open into œsophagus.

Dorsal, 1018<sup>62</sup>, 1018<sup>70</sup>, 1018<sup>77</sup>, 1018<sup>85</sup>, 1020<sup>15</sup>, 1020<sup>35</sup>, 1020<sup>40</sup>, 1020<sup>70</sup>, 1021, 1021<sup>30</sup>, 1021<sup>40</sup>, 1021<sup>50</sup>, 1022, 1022<sup>20</sup>, 1026<sup>52</sup>, 1026<sup>60</sup>, 1027<sup>40</sup>, 1289<sup>40</sup>, 1289<sup>42</sup>, 1289<sup>43</sup>, 1290, 1291, 1292, 1292<sup>5</sup>, 1560.

Lumbar, 1000<sup>40</sup>, 1020, 1022<sup>40</sup>, 1022<sup>60</sup>, 1022<sup>80</sup>, 1022<sup>90</sup>, 1022<sup>95</sup>, 1024<sup>78</sup>, 1026<sup>60</sup>, 1027, 1027<sup>35</sup>; tr. processes, 1026.

Sacrum, 1004<sup>55</sup>.

Disease of intervertebral cartilage.—See Joints.

CARIES UNDERGOING CURE.—See Angular Curvature, &c.

NECROSIS, 1018<sup>15</sup>, 1018<sup>70</sup>, 1018<sup>77</sup>, 1022<sup>40</sup>, 1022<sup>60</sup>, 1022<sup>80</sup>, 1022<sup>95</sup>, 1024<sup>78</sup>, &c., and several other cases of caries.

ANGULAR CURVATURE, 1006<sup>50</sup>, 1006<sup>70</sup>, 1006<sup>75</sup>, 1020, 1021<sup>50</sup>, 1022, 1022<sup>20</sup>, 1023, 1024<sup>50</sup>, 1024<sup>62</sup>, 1024<sup>75</sup>, 1024<sup>76</sup>, 1024<sup>85</sup>, 1024<sup>86</sup>, 1026<sup>55</sup>, 1026<sup>60</sup>, 1029<sup>25</sup>, 1290, 1292<sup>5</sup>.

LATERAL CURVATURE, 1000<sup>25</sup>, 1004<sup>32</sup>, 1005, 1006, 1006<sup>40</sup>, 1006<sup>60</sup>, 1006<sup>63</sup>, 1006<sup>68</sup>, 1006<sup>80</sup>, 1006<sup>90</sup>, 1007, 1026<sup>50</sup>.

In fœtus, 2540<sup>60</sup>.

SCROFULOUS DISEASE.—See Caries.

CHRONIC RHEUMATIC ARTHRITIS (?), 1007<sup>5</sup>, 1010<sup>7</sup>, 1011<sup>25</sup>, 1017.

MOLLITIES OSSIUM, 1004<sup>88</sup>, 1004<sup>89</sup>; sacrum, 1129<sup>20</sup>.

HYDATID, 1029<sup>30</sup>.

CARCINOMA, 1027<sup>70</sup>, 1028, 1028<sup>50</sup>, 1028<sup>60</sup>, 1029<sup>18</sup>, 1029<sup>20</sup>, 1029<sup>25</sup>, 1037, 1037<sup>5</sup>.

Sacrum, 1292<sup>20</sup>, 1292<sup>21</sup>.

INJURIES.

Fracture and displacement, 1030, 1030<sup>50</sup>, 1031, 1032, 1033, 1034<sup>35</sup>, 1034<sup>40</sup>, 1034<sup>70</sup>, 1034<sup>84</sup>, 1035, 1035<sup>25</sup>, 1035<sup>50</sup>, 1036.

Simple fracture, 1030<sup>40</sup> (?), 1037 (?); sacrum, 1134, 1134<sup>16</sup>.

Simple dislocation, 1030 (?), 1292<sup>60</sup>, 1292<sup>65</sup>, 1292<sup>70</sup>.

STERNUM.

MALFORMATION.

Ill shape, 1038<sup>35</sup>, 1038<sup>70</sup>.

Ossified ensiform cartilage and bifid, 1039, 1039<sup>50</sup>, 1040, 1041, 1041<sup>50</sup>.

Episternal bones, 1038<sup>20</sup>.

INFLAMMATION AND ABSCESS, 1041<sup>75</sup>.

ANKYLOSIS TO RIBS, 1038<sup>82</sup>, 1038<sup>83</sup>, 1038<sup>85</sup>, 1038<sup>90</sup>.

ABSORPTION BY ANEURISM, 1481, 1485<sup>50</sup>, 1485<sup>55</sup>, 1486.

CARCINOMA, 1042, 1042<sup>50</sup>.

FRACTURE, 1043, 1043<sup>15</sup>, 1043<sup>40</sup>.

DISLOCATION, 1043<sup>30</sup>.

OS HYOIDES.

OSSIFICATION OF STYLO-HYOID LIGAMENT, 1043<sup>47</sup>, 1043<sup>50</sup>, 1074<sup>68</sup>, 1074<sup>69</sup>.

## RIBS.

### MALFORMATION.

- Deficiency, 1044.
- Tenuity, 1044<sup>60</sup>.
- Supernumerary (cervical and others), 1045, 1045<sup>70</sup>.
- Bifid, 1046, 1046<sup>65</sup>, 1294<sup>60</sup>.
- Various alterations in shape.—See Thorax.

### INFLAMMATION AND RESULTS.

- Cyst in rib, 1044<sup>40</sup>.
- CARIES AND NECROSIS, 1041<sup>75</sup>, 1020<sup>15</sup>, 1044<sup>87</sup>, 1049<sup>60</sup>, 1049.

### ANKYLOSIS.

- To vertebræ, 1005, 1006<sup>63</sup>, 1006<sup>40</sup>, 1006<sup>66</sup>, 1024<sup>62</sup>, 1047, 1048.
- To sternum, 1038<sup>82</sup>, 1038<sup>83</sup>, 1038<sup>85</sup>, 1038<sup>90</sup>.
- To one another, 1006<sup>66</sup>; and see Fracture.

### OSSIFICATION OF CARTILAGES, 1294<sup>60</sup>, 1294<sup>68</sup>, 1294<sup>69</sup>.

### ABSORPTION BY ANEURISM, 1044<sup>75</sup>, 1294<sup>25</sup>, 1481, 1486, 1486<sup>90</sup>, 1490<sup>70</sup>, 1491, 1494.

### CARCINOMA, 1050, 1050<sup>35</sup>, 1050<sup>40</sup>, 1098<sup>10</sup>.

### SCROFULA, 1000<sup>20</sup>.

### MOLLITIES OSSIUM, 1000<sup>30</sup>, 1044<sup>62</sup>, 1098<sup>60</sup>.

### FRACTURE, 1044<sup>62</sup>, 1050<sup>65</sup>, 1051, 1051<sup>25</sup>, 1051<sup>36</sup>, 1051<sup>60</sup>, 1051<sup>90</sup>, 1052, 1052<sup>6</sup>, 1053, 1054, 1054<sup>20</sup>, 1054<sup>30</sup>, 1762<sup>44</sup>.

### DISLOCATION OF RIB, 1034<sup>40</sup>.

## THORAX.

In lateral curvature of spine, 1000<sup>25</sup>, 1006<sup>66</sup>, 1006<sup>80</sup>; also portions of chest, 1006<sup>40</sup>, 1006<sup>60</sup>, 1006<sup>63</sup>.

In angular curvature, 1006<sup>70</sup>.

In rickets, 1000<sup>10</sup>, 1000<sup>35</sup>.

In mollities ossium, 1000<sup>30</sup>, 1044<sup>62</sup>.

## CRANIUM.

### MALFORMATION.

Deficient in cases of anencephalus and encephalocele, 1055, 1055<sup>25</sup>, 2540<sup>55</sup>, 2540<sup>60</sup>, 2541, 2541<sup>25</sup>, 2541<sup>60</sup>, 2541<sup>65</sup>, 2541<sup>60</sup>, 2541<sup>80</sup>, 2541<sup>85</sup>, 2542, 2542<sup>35</sup>, 2542<sup>50</sup>, 2542<sup>55</sup>, 2542<sup>70</sup>.

The same combined with spina bifida, 2540<sup>20</sup>, 2540<sup>30</sup>, 2540<sup>17</sup>, 2540<sup>50</sup>, 2541<sup>65</sup>, 2541<sup>70</sup>, 2541<sup>75</sup>, 2542<sup>15</sup>, 2551<sup>64</sup>.

Want of symmetry, 1055<sup>60</sup>, 1055<sup>75</sup>, 1062<sup>60</sup>, 1087<sup>24</sup>.

Frontal suture, 1062, 1063, 1084<sup>34</sup>, 1086, 1089<sup>50</sup> D.

Spine on os frontis, 1057<sup>40</sup>.

Wormian bones (ossa triquetra), 1059, 1060, 1060<sup>60</sup>, 1061, 1061<sup>35</sup>, 1061<sup>70</sup>; also in the various specimens of hydrocephalus, particularly 1000.

### HYDROCEPHALUS, 1000, 1056, 1057, 1057<sup>30</sup>, 1057<sup>50</sup>, 1057<sup>75</sup>, 1065, 2551<sup>63</sup>.

With spina bifida, 2551<sup>60</sup>, 2551<sup>62</sup>, 2551<sup>72</sup>.

### ANKYLOSIS (synostosis).

Union of sutures, 1064, &c.; and in cases of fractured nasal bones.

Occiput to atlas, 1007<sup>35</sup>, 1071, 1071<sup>35</sup>, 1071<sup>70</sup>, 1072, 1089<sup>50</sup> F.

Temporal to lower jaw, 1070.

HYPERTROPHY, GENERAL, 1055<sup>50</sup>, 1066, 1066<sup>25</sup>, 1066<sup>35</sup>, 1066<sup>70</sup>, 1067, 1068, 1068<sup>35</sup>,  
1068<sup>80</sup>, 1069<sup>55</sup>, 1073<sup>50</sup>, 1074<sup>21</sup>, 1074<sup>28</sup>, 1083.

Spongy hypertrophy (osteoporosis), 1069, 1069<sup>60</sup>.

HYPERTROPHY, LOCAL.

Osteophyte, 1072<sup>25</sup>, 1072<sup>50</sup>, 1072<sup>55</sup>; puerperal, 1072<sup>65</sup>.

Exostosis, 1072<sup>60</sup>, 1073, 1073<sup>75</sup>, 1074, 1074<sup>15</sup>, 1074<sup>29</sup>, 1074<sup>30</sup>, 1074<sup>35</sup>.

Ossification of stylo-hyoid ligament, 1043<sup>47</sup>, 1043<sup>50</sup>, 1074<sup>62</sup>, 1074<sup>69</sup>.

ATROPHY, 1055<sup>75</sup>.

CARIES AND NECROSIS. \*

Scrofulous, 1000<sup>35</sup>, 1075 (?), 1078<sup>66</sup>, 1078<sup>67</sup>, 1081.

Syphilitic, 1075<sup>35</sup>, 1075<sup>56</sup>, 1075<sup>40</sup>, 1075<sup>70</sup>, 1075<sup>75</sup>, 1076<sup>63</sup>, 1077 (?), 1077<sup>60</sup>,  
1078<sup>60</sup> (?), 1080, 1080<sup>15</sup>, 1080<sup>25</sup>, 1080<sup>50</sup> (?), 1080<sup>69</sup>, 1080<sup>70</sup> (?), 1080<sup>75</sup> (?).

From injury, 1075<sup>20</sup>, 1075<sup>21</sup> (?), 1076<sup>35</sup>, 1076<sup>70</sup>, 1076<sup>85</sup>, 1077<sup>20</sup>, 1077<sup>40</sup>, 1077<sup>60</sup>,  
1077<sup>70</sup> (?), 1077<sup>80</sup>, 1078 (?), 1078<sup>50</sup>, 1078<sup>55</sup> (?), 1080<sup>80</sup>, 1083<sup>80</sup>, 1083<sup>81</sup>, 1083<sup>85</sup>,  
1084<sup>60</sup>.

CANCER.

Deposit in bone, 1081<sup>35</sup>, 1081<sup>45</sup>, 1081<sup>50</sup>, 1081<sup>70</sup>, 1081<sup>74</sup>, 1081<sup>78</sup>, 1081<sup>91</sup>, 1081<sup>95</sup>,  
1098<sup>10</sup>.

Cancerous erosion (osteolysis), 1080<sup>50</sup> (?), 1080<sup>62</sup> (?), 1081<sup>40</sup>, 1081<sup>85</sup> (?).

RICKETS, 1000<sup>35</sup>, and probably some of the hypertrophied skulls.

INJURY.

Fracture, 1076<sup>85</sup>, 1078<sup>50</sup>, 1082, 1082<sup>50</sup>, 1083, 1083<sup>20</sup>, 1083<sup>23</sup>, 1083<sup>25</sup>, 1083<sup>29</sup>,  
1083<sup>30</sup>, 1083<sup>37</sup>, 1083<sup>42</sup>, 1083<sup>43</sup>, 1083<sup>55</sup>, 1083<sup>58</sup>, 1083<sup>60</sup>, 1083<sup>62</sup>, 1083<sup>65</sup>, 1083<sup>70</sup>,  
1083<sup>75</sup>, 1083<sup>80</sup>, 1083<sup>81</sup>, 1083<sup>85</sup>, 1084, 1084<sup>15</sup>, 1084<sup>20</sup>, 1084<sup>25</sup>, 1084<sup>30</sup>, 1084<sup>34</sup>,  
1048<sup>35</sup>, 1084<sup>38</sup>, 1084<sup>45</sup>, 1084<sup>60</sup>, 1084<sup>65</sup>, 1084<sup>70</sup>, 1084<sup>75</sup>, 1085, 1085<sup>75</sup>, 1085<sup>80</sup>,  
1085<sup>85</sup>, 1085<sup>90</sup>, 1086, 1086<sup>65</sup>, 1086<sup>70</sup>, 1086<sup>75</sup>, 1086<sup>80</sup>, 1086<sup>85</sup>.

Sabre wounds, 1076<sup>85</sup>, 1084, 1084<sup>15</sup>, 1084<sup>35</sup>, 1085<sup>80</sup>. } and probably some others.

Gun-shot wounds, 1084<sup>34</sup>, 1084<sup>70</sup>, 1085<sup>80</sup>, 1086<sup>75</sup>. }

TREPINE, 1073<sup>60</sup>, 1078<sup>50</sup> (?), 1083, 1083<sup>9</sup>, 1083<sup>30</sup>, 1083<sup>60</sup>, 1083<sup>62</sup>, 1084<sup>20</sup> (?), 1086<sup>70</sup>,  
1086<sup>75</sup>.

REPAIR OF INJURIES AND DISEASE.

From fractures and sword cuts, 1076<sup>85</sup>, 1084, 1084<sup>15</sup>, 1084<sup>25</sup>, 1084<sup>30</sup>, 1084<sup>35</sup>,  
1084<sup>45</sup>, 1084<sup>60</sup>, 1084<sup>65</sup>, 1084<sup>70</sup>, 1084<sup>75</sup>, 1085<sup>80</sup>, 1086<sup>85</sup>.

From trephine, 1083<sup>30</sup>, 1084<sup>20</sup>, 1086<sup>70</sup>.

After exfoliation of bone, 1077<sup>70</sup>, 1078<sup>60</sup>.

BONES OF FACE.

MALFORMATION.

Superior maxillary, 1087<sup>12</sup>.

Inferior maxillary, 1090<sup>30</sup>.

ANKYLOSIS.

Inferior maxilla to skull, 1070.

EXOSTOSIS.

Superior maxillary and vomer, 1074<sup>15</sup>.

Inferior maxillary, 1090<sup>60</sup>.

\* As these two morbid conditions are so often combined in our specimens, we have placed them together. It will be seen by the query being placed after many numbers that some uncertainty exists as to the determining cause of the disease in several of them.

CARIES AND NECROSIS.

Bones of face, 1080<sup>25</sup>, 1080<sup>50</sup>, 1080<sup>75</sup>, 1087<sup>24</sup>, 1087<sup>36</sup>, 1087<sup>48</sup>, 1087<sup>60</sup>, 1087<sup>74</sup>, 1087<sup>86</sup>.

Inferior maxilla, 1080<sup>75</sup>, 1090<sup>80</sup>, 1091, 1091<sup>5</sup>, 1091<sup>6</sup>, 1091<sup>7</sup>.

Internal ear and temporal bone, 1074<sup>70</sup>, 1074<sup>75</sup>.

DISEASES.

Superior maxilla, cystic, 1087.

Inferior maxilla.

Enchondroma, 1091<sup>10</sup>, 1091<sup>28</sup>, 1091<sup>35</sup>.

Fibro-cartilaginous, 1091<sup>15</sup>, 1091<sup>16</sup>.

Fibrous, and fibro-cystic, 1091<sup>20</sup>, 1091<sup>25</sup>, 1091<sup>30</sup>, 1091<sup>50</sup>.

Carcinoma, 1091<sup>11</sup>, 1091<sup>40</sup>.

FRACTURE.

Os nasi, 1088, 1089, 1089<sup>50</sup>.

Superior maxilla, 1082.

Inferior maxilla, 1091<sup>70</sup>.

FOREIGN BODY.

From superior maxilla, 1091<sup>80</sup>.

CLAVICLE.

INFLAMMATION AND RESULTS.

Periostitis, enlargement from, 1093, 1093<sup>50</sup>, 1094<sup>24</sup>.

Caries and necrosis, 1093<sup>25</sup>, 1093<sup>36</sup>, 1093<sup>50</sup>, 1094, 1094<sup>8</sup>, 1094<sup>16</sup>,

Osseous deposits, &c., in chronic rheumatic arthritis, 1100<sup>30</sup>, 1100<sup>46</sup>, &c.

NEW ARTICULAR SURFACE, 1293.

FRACTURE, 1094<sup>24</sup>, 1094<sup>32</sup>, 1094<sup>36</sup>, 1094<sup>38</sup>, 1094<sup>40</sup>, 1094<sup>48</sup>, 1094<sup>50</sup>, 1094<sup>52</sup>, 1094<sup>54</sup>, 1094<sup>56</sup>, 1094<sup>64</sup>, 1094<sup>72</sup>, 1094<sup>80</sup>, 1094<sup>86</sup>, 1094<sup>94</sup>, 1094<sup>95</sup>, 1297<sup>25</sup>.

CARCINOMA, 1106<sup>5</sup>.

MOLLITIES OSSIIUM, 1000<sup>30</sup>.

RICKETS, 1105.

SCAPULA.

MALFORMATION (of angles).

Superior, 1096<sup>50</sup>, 1096<sup>60</sup>.

Inferior, 1096<sup>30</sup>, 1096<sup>40</sup>, 1096<sup>70</sup>.

ATROPHY, 1095, 1096, 1096<sup>10</sup>, 1096<sup>20</sup>, 1096<sup>30</sup>, 1096<sup>40</sup>.

NEW ARTICULAR SURFACE.

From dislocation, 1114, 1114<sup>30</sup>, 1297<sup>50</sup>, 1298<sup>50</sup>, 1298<sup>65</sup>.

From disease, 1297<sup>30</sup>.

On under surface of acromion, 1295<sup>50</sup>, 1297<sup>70</sup>, 1298<sup>60</sup>.

On coronoid process, 1293.

INFLAMMATION AND RESULTS.

Periostitis, enlargement from, 1096<sup>80</sup>, 1096<sup>90</sup>.

Caries of glenoid cavity, 1097, 1100<sup>80</sup>.

Osseous deposits, and other changes in chronic rheumatic arthritis, 1097<sup>90</sup> (?), 1098 (?), 1100<sup>30</sup>, 1100<sup>45</sup>, 1100<sup>60</sup>, 1295<sup>25</sup>, 1295<sup>50</sup>, 1298<sup>60</sup>.

Changes from injury (?), 1297<sup>25</sup>, 1297<sup>30</sup>, 1297<sup>70</sup>.

FRACTURE.

Body, 1097<sup>60</sup>, 1097<sup>70</sup>.

Neck, 1097<sup>81</sup>.

Acromion process, 1097<sup>90</sup> (?), 1098 (?).

GUN-SHOT, 1097<sup>35</sup>.

MOLLITIES OSSIIUM, 1000<sup>30</sup>, 1098<sup>60</sup>.

MYELOID TUMOR, 1098<sup>5</sup>.

ENCHONDROMA, 1098<sup>20, 21</sup>.

CARCINOMA, 1098<sup>10</sup>, 1098<sup>15</sup>.

OS HUMERI.

MALFORMATION, 1306<sup>66</sup>.

Supra-condyloid process, 1100<sup>15</sup>.

HYPERTROPHY, 1000<sup>15</sup>.

EXOSTOSIS, 1100<sup>7</sup>, 1100<sup>10</sup>, 1100<sup>7</sup>.

ALTERATION FROM CHRONIC ARTHRITIS.

Head, 1100<sup>30</sup>, 1100<sup>45</sup>, 1100<sup>60</sup>, 1295<sup>25</sup>, 1295<sup>60</sup>, 1297<sup>25</sup>, 1297<sup>30</sup>, 1297<sup>70</sup>.

Condyles, 1303<sup>25</sup>, 1303<sup>30</sup>, 1305.

Ossicles of bone in elbow-joint, 1298<sup>75</sup>, 1298<sup>77</sup>.

INFLAMMATION AND RESULTS.

Periostitis, enlargement from, 1000<sup>5</sup>, 1100, 1100<sup>22</sup>, 1101<sup>60</sup>, 1102, 1302.

Local enlargements.—See Fracture.

Caries, 1099, 1100, 1100<sup>80</sup>, 1117<sup>60</sup>.

Necrosis, 1102<sup>60</sup>, 1103, 1103<sup>25</sup>, 1103<sup>60</sup>, 1103<sup>75</sup>, 1104, 1104<sup>25</sup>, 1104<sup>30</sup>, 1104<sup>50</sup>, 1104<sup>60</sup>, 1302.

FRACTURE.

Neck, 1107<sup>35</sup>, 1107<sup>37</sup>, 1107<sup>40</sup>, 1112<sup>80</sup>, 1113<sup>60</sup>, 1114, 1114<sup>30</sup>, 1304<sup>60</sup>.

Shaft, 1107<sup>60</sup>, 1107<sup>60</sup>, 1107<sup>80</sup>, 1108, 1109, 1110, 1110<sup>60</sup>, 1110<sup>65</sup>, 1110<sup>75</sup>, 1110<sup>81</sup>, 1111, 1111<sup>60</sup>, 1111<sup>68</sup>, 1111<sup>66</sup>, 1111<sup>75</sup>, 1111<sup>84</sup>, 1111<sup>90</sup>, 1112<sup>80</sup>.

Condyles, 1107<sup>80</sup>, 1112, 1112<sup>60</sup>, 1112<sup>75</sup>, 1112<sup>85</sup>, 1113, 1119<sup>25</sup>, 1304<sup>25</sup>, 1304<sup>30</sup> (?).

Arising from cancer, 1107<sup>20</sup>, 1107<sup>22</sup>, 1107<sup>30</sup>.

FALSE JOINT, 1110<sup>75</sup>, 1110<sup>80</sup>.

EXCISION OF ELBOW-JOINT AND ANKYLOSIS.—See Joint.

RICKETS, 1000, 1000<sup>35</sup>, 1105.

SCAPULA, 1000<sup>20</sup>.

FIBRO-OSSEOUS TUMOR, 1105<sup>60, 61</sup>.

OSTEOID CANCER, 1107, 1107<sup>10</sup>.

MEDULLARY CANCER, 1106<sup>5</sup>, 1107<sup>20</sup>, 1107<sup>22, 23</sup>, 1107<sup>25</sup>, 1107<sup>30</sup>.

RADIUS AND ULNA.

MALFORMATION, 1306<sup>66</sup>.

HYPERTROPHY, 1000<sup>15</sup>.

ENLARGED FROM CHRONIC RHEUMATIC ARTHRITIS of elbow-joint, 1303<sup>25</sup>, 1303<sup>30</sup>, 1305.

INFLAMMATION (enlargement from), 1114<sup>80</sup>, 1158.

CARIES.—See Joint.

FRACTURE, 1118<sup>75</sup>, 1118<sup>80</sup>, 1119<sup>20</sup>, 1119<sup>30</sup>, 1119<sup>35</sup>.

FALSE JOINT, 1119<sup>20</sup>, 1119<sup>35</sup>.

RICKETS, 1000<sup>10</sup>.

OSTEOSARCOMA, 1117<sup>20</sup>.

#### RADIUS.

INFLAMMATION (enlargement from), 1114<sup>60</sup>, 1115, 1116, 1117.

CARIES AND NECROSIS, 1117.

Altered from dislocation, 1306<sup>32</sup>.

ANKYLOSIS TO CARPUS, 1123<sup>75</sup>, 1124<sup>8</sup>, 1124<sup>16</sup>, 1124<sup>24</sup>.

FRACTURE, 1114<sup>45</sup>, 1118<sup>30</sup>, 1118<sup>81</sup>, 1118<sup>83</sup>, 1118<sup>85</sup>, 1115<sup>87</sup>, 1119<sup>32</sup>.

CANCER, 1117<sup>10</sup>.

MYELOID, 1117<sup>20</sup>, 1117<sup>21</sup>.

#### ULNA.

CARIES, 1117<sup>60</sup>.

FRACTURE.

Olecranon, 1118, 1119<sup>28</sup>, 1119<sup>36</sup>.

Coronoid process, 1119<sup>25</sup>.

Shaft, 1118<sup>60</sup>, 1119, 1304<sup>15</sup> (?).

Styloid process, 1117<sup>40</sup>.

#### BONES OF WRIST.

NEW ARTICULAR SURFACE ON UNCIFORM BONE, 1119<sup>30</sup>.

CARIES, 1123<sup>60</sup>.

ANKYLOSIS, 1123<sup>75</sup>, 1124, 1124<sup>8</sup>, 1124<sup>16</sup>, 1124<sup>24</sup>.

#### HAND AND PHALANGES.

MALFORMATION.

Deficient fingers, 1190<sup>40</sup>, 1190<sup>41</sup>.

Supernumerary fingers, 1120, 1120<sup>60</sup>.

CARIES AND NECROSIS, 1124<sup>28</sup>, 1124<sup>29</sup>, 1124<sup>30</sup>, 1124<sup>32</sup>, 1124<sup>35</sup>, 1124<sup>38</sup>, 1124<sup>41</sup>.

INJURY AND AMPUTATION OF FINGERS, 1119<sup>60</sup>, 1119<sup>61</sup>, 1119<sup>80</sup>, 1120<sup>10</sup>.

Torn off with tendons, 1119<sup>65</sup>, 1367.

ENCHONDROMA, 1121, 1122, 1122<sup>60</sup>, 1124<sup>60</sup>, 1124<sup>65</sup>.

FIBROUS TUMOR, 1124<sup>46</sup>.

CARCINOMA, 1124<sup>44</sup>, 1124<sup>46</sup>.

#### BONES OF THE PELVIS.

MALFORMATION.

General contraction, 1124<sup>65</sup>.

Oblique (in ankylosis to sacrum), 1125<sup>60</sup>.

Oblique (in lateral curvature), 1000<sup>25</sup>, 1006<sup>80</sup>, 1006<sup>90</sup>.

Deep (in angular curvature), 1006<sup>70</sup>.

From rickets, 1000<sup>10</sup>.

From mollities ossium, 1000<sup>30</sup>, 1124<sup>90</sup>, 1129<sup>20</sup>, 1129<sup>80</sup>.

HYPERTROPHY, 1132<sup>50</sup>.

CARIES, 1124<sup>80</sup>.

ANKYLOSIS.

To sacrum, 1125, 1125<sup>60</sup>, 1126, 1127, 1128, 1128<sup>25</sup>, 1129, 1134<sup>48</sup>.

Pubic bones, 1128<sup>25</sup>, 1130, 1314<sup>25</sup>, 1314<sup>30</sup>.

BONY EXCRESCENCES AND EXOSTOSES, 1127, 1128, 1128<sup>25</sup>, 1128<sup>60</sup>, 1129, 1134<sup>48</sup>, 1134<sup>66</sup>, 1187<sup>65</sup>.—(The first five have probably a relation to chronic rheumatic arthritis.)

Acetabulum in chronic rheumatic arthritis—see Femur.

ADVENTITIOUS GROWTHS AND EFFECTS.

Cartilaginous Tumors, 1132<sup>52</sup>.

Osseous basis of do. (?), 1132<sup>66</sup>.

Effects of *cancerous tumor*, 1132<sup>58</sup>.

*Cancerous erosion* (osteolysis), 1132<sup>54</sup>.

FRACTURE, 1133, 1134, 1134<sup>8</sup>, 1134<sup>16</sup>, 1134<sup>32</sup>, 1134<sup>48</sup>, 1134<sup>68</sup>.

NEW ARTICULAR SURFACE IN DISLOCATION, 1319<sup>60</sup>, 1320, 1322<sup>52</sup>.

SACRUM.—See SPINE.

#### OS FEMORIS.

HYPERTROPHY.

Simple, 1134<sup>86</sup>, 1139<sup>60</sup>.

Spongy, 1069<sup>65</sup>, 1132<sup>60</sup>.

ATROPHY.

Simple, 1000<sup>15</sup>.

Senile changes in cervix, 1136, 1137, 1138, 1139, 1140, 1147.

Senile changes in cervix, with shortening, 1141, 1142, 1143, 1187.

Head and neck after fracture.—See Fracture.

CHRONIC RHEUMATIC ARTHRITIS (alteration of head in), 1131, 1131<sup>33</sup>, 1131<sup>60</sup>, 1131<sup>66</sup>, 1132, 1132<sup>33</sup>, 1144, 1145 (?), 1146, 1146<sup>32</sup>, <sup>66</sup>, 1147, 1148, 1149, 1150, 1151, 1187<sup>24</sup>, 1205, 1209<sup>32</sup>, 1319, 1319<sup>10</sup>, 1319<sup>20</sup>, 1319<sup>24</sup>, 1319<sup>26</sup>, 1319<sup>28</sup>, 1319<sup>30</sup>, 1319<sup>32</sup>, 1319<sup>36</sup>, 1319<sup>40</sup>, 1319<sup>60</sup> (?).

EXOSTOSES, 1151<sup>60</sup>, 1151<sup>75</sup>, 1151<sup>76</sup>, 1151<sup>78</sup>, 1151<sup>79</sup>, 1152, 1152<sup>5</sup>, 1152<sup>15</sup>, 1152<sup>16</sup>, 1152<sup>32</sup>, 1152<sup>48</sup>, 1152<sup>64</sup>, 1152<sup>68</sup>, 1158<sup>60</sup>, 1160<sup>60</sup>, 1160<sup>62</sup>, 1167<sup>60</sup>, 1182, 1197<sup>60</sup>, 1210, 1368.

ANKYLOSIS.—See Hip and Knee Joint.

INFLAMMATION AND RESULTS.

Enlargement from inflammation, 1000<sup>5</sup>, 1134<sup>86</sup>, 1152<sup>72</sup>, 1152<sup>76</sup>, 1152<sup>80</sup>, 1153.

Periostitis (more especially), 1125<sup>60</sup>, 1153<sup>25</sup>, <sup>26</sup>, 1158<sup>64</sup>.

Ostitis (sclerosis) more especially, 1152<sup>85</sup>, 1197<sup>8</sup>.

Bone trephined for suppuration, 1155<sup>10</sup>.

Stump after amputation, 1158<sup>40</sup>, <sup>41</sup>, 1158<sup>60</sup>, 1158<sup>64</sup>.

WITH CARIES AND NECROSIS.

Head, 1156, and numerous cases under hip-joint.

Shaft, 1157<sup>60</sup>, 1157<sup>70</sup>, <sup>71</sup>, 1157<sup>80</sup>, 1158, 1160<sup>24</sup>, 1160<sup>32</sup>, 1160<sup>35</sup>, 1160<sup>48</sup>, 1199, 1199<sup>60</sup>, 1210<sup>20</sup>.

Condyles, 1160<sup>30</sup>, 1197<sup>48</sup>, 1197<sup>88</sup>, 1245<sup>40</sup>, 1245<sup>65</sup>, 1245<sup>60</sup>.

Amputated ends of bone undergoing inflammatory changes, 1158<sup>8</sup>, 1158<sup>12</sup>, 1158<sup>16</sup>, 1158<sup>24</sup>, <sup>25</sup>, 1158<sup>32</sup>, 1158<sup>35</sup>, <sup>36</sup>, 1158<sup>60</sup>, 1158<sup>64</sup>, 1158<sup>70</sup>.

Sequestrum removed from stumps, 1159, 1159<sup>60</sup>, 1160, 1160<sup>16</sup>, 1160<sup>17</sup>, 1160<sup>18</sup>, 1160<sup>36</sup>.

MOLLITIES OSSIUM, 1000<sup>30</sup>, 1134<sup>74</sup>, 1134<sup>75</sup>, 1160<sup>64</sup>, 1160<sup>65</sup>.

RICKETS, 1000<sup>10</sup>, 1000<sup>35</sup>, 1134<sup>86</sup> (?), 1134<sup>90</sup>, 1135<sup>40</sup>, 1135<sup>45</sup> (?), 1135<sup>48</sup> (?), 1135<sup>60</sup>, 1135<sup>75</sup>, 1135<sup>85</sup>.

ADVENTITIOUS GROWTHS:—

ENCHONDROMA, 1160<sup>86</sup>.

MYELOID, 1160<sup>60</sup>, 1162<sup>30</sup>, 1162<sup>31</sup>, 1162<sup>32</sup>.

OSTEOSARCOMA, 1162<sup>65</sup>, <sup>66</sup>, 1162<sup>77</sup>, <sup>78</sup>, 1162<sup>82</sup>, <sup>84</sup>, <sup>96</sup>, 1163, 1164, 1165, 1168  
(having various proportions of osseous and softer structures).

Osseous tumors forming basis of osteosarcoma or enchondroma, 1160<sup>70</sup>,  
1160<sup>91</sup>, 1167.

OSTEOID CANCER, 1160<sup>60</sup>, <sup>61</sup>.

CARCINOMA, 1132<sup>63</sup>, 1160<sup>54</sup>, 1160<sup>56</sup>, 1160<sup>60</sup>, 1161, 1162<sup>12</sup>, <sup>24</sup>, 1162<sup>30</sup>, 1162<sup>40</sup>,  
1162<sup>45</sup>, <sup>46</sup>, 1162<sup>48</sup>, 1162<sup>60</sup>, 1166, 1169.

FRACTURE FROM INJURY:—

*Neck.*

Within capsule, 1174, 1176, 1177, 1177<sup>60</sup>, 1178, 1180, 1181, 1182, 1183,  
1184<sup>60</sup>, 1185, 1185<sup>6</sup>, <sup>10</sup>, 1185<sup>15</sup>, 1186, 1187 (?), 1187<sup>60</sup>.

Do. undergoing repair, 1183, 1185, 1185<sup>6</sup>, <sup>10</sup>, 1186, 1187 (?).

Without capsule, 1187<sup>61</sup>, 1188<sup>65</sup>.

Within and without, 1183, 1184.

Through neck and trochanters (impacted), 1172, 1173, 1187<sup>62</sup>, 1187<sup>64</sup>, 1187<sup>65</sup>,  
1187<sup>68</sup>, 1187<sup>64</sup>, 1187<sup>70</sup>, 1187<sup>76</sup>, 1188, 1188<sup>60</sup>, 1188<sup>60</sup>, 1189, 1189<sup>10</sup>, 1189<sup>60</sup>,  
1189<sup>60</sup>, 1191, 1191<sup>60</sup>, 1197<sup>36</sup>.

*Trochanter*, 1195.

*Shaft.*

Upper part, involving trochanters, 1192, 1193, 1194, 1196, 1197, 1197<sup>8</sup>, 1197<sup>36</sup>,  
1209<sup>74</sup>, 1209<sup>75</sup>, 1209<sup>76</sup>.

Shaft, 1152<sup>72</sup> (?), 1160<sup>32</sup>, 1191<sup>65</sup>, 1197<sup>16</sup>, 1197<sup>18</sup>, 1197<sup>19</sup>, 1197<sup>20</sup>, 1197<sup>28</sup>, 1197<sup>32</sup>,  
1197<sup>40</sup>, 1197<sup>44</sup>, 1197<sup>48</sup>, 1197<sup>50</sup>, 1197<sup>64</sup>, 1197<sup>65</sup>, <sup>66</sup>, 1197<sup>80</sup>, 1197<sup>82</sup>, 1197<sup>88</sup>,  
1198, 1199, 1199<sup>60</sup>, 1200, 1201, 1203, 1204, 1205, 1205<sup>60</sup>, 1206, 1206<sup>60</sup>,  
1207, 1208, 1208<sup>60</sup>, 1209, 1209<sup>82</sup>, 1209<sup>86</sup>, 1209<sup>64</sup>, 1209<sup>72</sup>, 1209<sup>77</sup>, 1209<sup>78</sup>,  
1209<sup>79</sup>, 1209<sup>80</sup>, 1209<sup>81</sup>, 1209<sup>82</sup>, 1209<sup>83</sup>, 1209<sup>84</sup>, 1209<sup>85</sup>, 1209<sup>86</sup>, 1210, 1210<sup>10</sup>,  
1210<sup>20</sup>, 1210<sup>40</sup>, 1245<sup>65</sup>.

*Condyles*, 1202, 1210<sup>40</sup>, 1210<sup>60</sup>, 1210<sup>65</sup>, <sup>66</sup>.

FRACTURE FROM DISEASE.

Necrosis, 1160<sup>36</sup>.

Cancer.—Neck, 1132<sup>63</sup>, 1162<sup>36</sup>.

Shaft, 1162<sup>12</sup>, <sup>24</sup>, 1162<sup>45</sup>, 1162<sup>48</sup>, 1169.

PATELLA.

ATROPHY, 1210<sup>70</sup>.

ENLARGED FROM PERIOSTITIS, 1210<sup>90</sup>.

EXOSTOSIS, 1197<sup>88</sup>.

CARIES AND NECROSIS, 1160<sup>48</sup>, 1210<sup>80</sup>, 1245<sup>65</sup>, 1245<sup>60</sup>.

ANKYLOSIS, 1160<sup>24</sup>, 1160<sup>48</sup>, 1197<sup>88</sup>, and under knee-joint.



**FRACTURE.**

Longitudinal, 1211, 1211<sup>32</sup>, 1211<sup>64</sup>, 1211<sup>66</sup> (all osseous union).

Transverse, 1212, 1212<sup>20</sup>, (recent); 1211<sup>80, 81, 82, 83</sup>, 1211<sup>80, 91</sup>, 1212<sup>32</sup>, 1212<sup>64</sup>,  
(ligamentous union); 1211<sup>75</sup>, (bony union).

Incised wound, 1326<sup>60</sup>.

**ADVENTITIOUS GROWTHS.**

Medullary cancer, 1210<sup>07, 08</sup>.

Osteoid cancer, 1165<sup>60, 61</sup>.

Myeloid, 1210<sup>65</sup>.

**TIBIA AND FIBULA.**

**HYPERTROPHY**, spongy, 1069<sup>65</sup>, 1132<sup>60</sup>.

**ATROPHY**, simple, 1000<sup>15</sup>.

**EXOSTOSIS**, 1160<sup>02</sup>, 1251.

**ANKYLOSED TOGETHER.**

Superiorly, 1135<sup>75</sup>, 1251.

Inferiorly, 1132<sup>60</sup>, 1225, 1225<sup>32</sup>, 1225<sup>45</sup>, 1227<sup>60</sup>, 1228, 1229, 1230, 1231, 1231<sup>60</sup>,  
1237, 1238, 1250<sup>60</sup>, 1251, 1281<sup>75</sup>.

**INFLAMMATION.**

Periostitis, 1220, 1221, 1222, 1224<sup>60</sup>, 1225, 1225<sup>32</sup>, 1225<sup>45</sup>, 1225<sup>64</sup>, 1227<sup>60</sup>, 1228,  
1229, 1230, 1231, 1231<sup>60</sup>, 1237, 1238, 1238<sup>60</sup>; with necrosis, 1239<sup>32</sup>.

Stump after amputation, 1248<sup>12</sup>, 1260<sup>15</sup>.

**MOLLITIES OSSIUM**, 1212<sup>82</sup>.

**RICKETS**, 1000<sup>10</sup>, 1135<sup>75</sup>, 1214<sup>20</sup>, 1248.

**FRACTURE**, 1259, 1259<sup>60</sup>, 1260<sup>20</sup>, 1260<sup>40</sup>, 1260<sup>45</sup>, 1266<sup>37</sup>, 1273, 1274, 1275, 1276, 1277,  
1277<sup>40</sup>, 1277<sup>60</sup>, 1278, 1278<sup>60</sup>, 1279, 1279<sup>35</sup>, 1279<sup>60</sup>, 1279<sup>75</sup>, 1279<sup>80</sup>, 1279<sup>85</sup>, 1280,  
1281, 1281<sup>25</sup>, 1281<sup>60</sup>, 1282.

**FALSE JOINT**, 1260<sup>20</sup>.

**ADVENTITIOUS GROWTHS.**

Carcinoma, 1249, 1250, 1374<sup>40</sup>,

Fibrous tumors, 1257.

**TIBIA.**

**HYPERTROPHY.**—See Rickets and Inflammation.

**ATROPHY.**

Absorption by aneurism, 1223<sup>60</sup>.

**EXOSTOSIS**, 1215, 1215<sup>60</sup>, 1216.

**ANKYLOSIS.**

To femur, 1197<sup>88</sup>; see Joints.

To astragalus, 1225; do.

**INFLAMMATION AND RESULTS.**

Periostitis, 1216<sup>75</sup>, 1217, 1244<sup>65</sup>, 1245<sup>40</sup>.

Enlargement from, 1000<sup>5</sup>, 1215<sup>60</sup>, 1216, 1218, 1219, 1223, 1225<sup>80</sup>,  
1232<sup>30, 31</sup>, 1234<sup>64</sup>.

INFLAMMATION AND RESULTS—*continued.*

Ostitis (sclerosis), 1217<sup>50</sup>, 1225<sup>50</sup>, 1233<sup>40</sup>, 1233<sup>50</sup>, 1234<sup>32</sup>, 1235, 1260<sup>45</sup>.

Parts removed by operation, 1233<sup>10</sup>, 1245<sup>32</sup>.

With caries and necrosis, 1160<sup>48</sup>, 1216<sup>50</sup>, 1216<sup>75</sup>, 1217<sup>50</sup>, 1223<sup>20</sup>, 1224, 1227<sup>55</sup>, 1239<sup>64</sup>, 1240, 1242, 1243, 1244, 1244<sup>50</sup>, 1244<sup>65</sup>, 1245, 1245<sup>40</sup>, 1245<sup>65</sup>, 1245<sup>60</sup>, 1246, 1247, 1248<sup>48</sup>, <sup>64</sup>; and knee-joint.

Styled more especially strumous, 1248<sup>16</sup>, <sup>32</sup>, 1248<sup>40</sup>, 1248<sup>70</sup>.

Head of the bone, 1239, 1245<sup>45</sup>, 1245<sup>48</sup>, 1245<sup>50</sup>, 1248<sup>8</sup>, 1248<sup>68</sup>.

Sequestrum, 1232<sup>10</sup>, 1233<sup>20</sup>, 1242<sup>50</sup>, 1242<sup>55</sup>.

FRACTURE, 1260<sup>6</sup>, 1260<sup>18</sup>, 1260<sup>25</sup>, 1260<sup>30</sup>, 1260<sup>50</sup>, 1260<sup>75</sup>, <sup>76</sup>, 1261, 1262, 1263, 1265, 1265<sup>32</sup>, 1265<sup>64</sup>, 1266, 1266<sup>25</sup>, 1266<sup>26</sup>, 1266<sup>27</sup>, 1266<sup>28</sup>, 1266<sup>29</sup>, 1266<sup>30</sup>, 1266<sup>31</sup>, 1266<sup>32</sup>, 1266<sup>50</sup>, 1266<sup>75</sup>, 1267, 1268, 1268<sup>32</sup>, 1281<sup>75</sup>, 1283.

Want of union, 1260<sup>30</sup>.

Into ankle-joint, 1260<sup>40</sup>, 1266<sup>75</sup>, 1281<sup>75</sup>, 1283, 1349, 1353; with dislocation, 1354, 1355, 1356.

Injury by bullet, 1260<sup>12</sup>.

ADVENTITIOUS GROWTHS.

Carcinoma, 1160<sup>56</sup>, 1162<sup>45</sup>, 1248<sup>80</sup>, 1251<sup>85</sup>; Epithelial, 1248<sup>88</sup>, 1223<sup>20</sup> (?), 1232<sup>30</sup>, <sup>31</sup> (?).

Melanosis, 1257<sup>50</sup>.

Osteoid cancer, 1165<sup>50</sup>, <sup>51</sup>.

Osteosarcoma, 1251<sup>25</sup>, <sup>50</sup>, 1251<sup>75</sup>, 1251<sup>80</sup>, 1252, 1252<sup>25</sup>, 1252<sup>87</sup>, 1254, 1255<sup>50</sup>.

Enchondroma, 1336.

Myeloid, 1255 (?), 1255<sup>25</sup>, <sup>26</sup>, 1255<sup>30</sup>.

Hydatid, 1258.

FIBULA.

HYPERTROPHY.

Simple, 1268.—See also Rickets.

INFLAMMATION.

Enlarged from periostitis, 1226, 1227, 1236, 1236<sup>50</sup>, 1245<sup>65</sup>.

With necrosis, 1227<sup>50</sup>.

RICKETS, 1213<sup>64</sup>, 1213<sup>72</sup>.

FRACTURE, 1268<sup>64</sup>, 1268<sup>82</sup>, 1268<sup>90</sup>, 1269, 1269<sup>32</sup>, 1269<sup>64</sup>, 1269<sup>72</sup>, 1269<sup>80</sup>, 1270, 1270<sup>60</sup>, 1271, 1272.

ADVENTITIOUS GROWTHS.

Carcinoma, 1251<sup>55</sup>, 1268<sup>46</sup>, 1268<sup>60</sup>.

Osteoid cancer, 1268<sup>51</sup>.

Myeloid, 1268<sup>50</sup>.

BONES OF THE FOOT.

MALFORMATION, 1284, 1284<sup>80</sup>, <sup>81</sup>, 1285, 1286, 1286<sup>50</sup>, 1286<sup>60</sup>.

ANKYLOSIS.

Astragalus to tibia, 1225, 1281<sup>75</sup>.

Astragalus to os calcis, 1225, 1281<sup>75</sup>, 1284<sup>60</sup>.

Tarsal to metatarsal, 1284<sup>64</sup>, 1284<sup>64</sup>, 1284<sup>70</sup>.

Phalanges, 1287<sup>32</sup>, 1287<sup>64</sup>.

INFLAMMATION AND RESULTS.

Enlarged from inflammation, 1285<sup>60</sup>, 1285<sup>75</sup>.

Caries and necrosis, 1239<sup>32</sup>, 1266<sup>75</sup>, 1284<sup>32</sup>, 1284<sup>48</sup>, 1284<sup>49</sup>, 1284<sup>60</sup>, 1284<sup>60</sup>,  
1284<sup>62</sup>, 1288, 1288<sup>32</sup>, 1288<sup>40</sup>, 1289, 1375<sup>88</sup>.

Chronic rheumatic arthritis, 1285<sup>60</sup> (?).

FRACTURE.

Astragalus, 1284<sup>75</sup>, 1354.

Phalanx, 1289<sup>16</sup>.

NEW GROWTHS.

Enchondroma and exostosis, 1285<sup>80</sup>, 1287, 1289<sup>17</sup>.

## JOINTS.

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### INTERVERTEBRAL SUBSTANCE AND LIGAMENTS.

ULCERATION OF INTERVERTEBRAL SUBSTANCE, 1289<sup>40</sup>, 1289<sup>42</sup>, 1289<sup>43</sup>, 1290, 1291, 1292, 1292<sup>5</sup>, 1292<sup>10</sup>; also among bones, 1018<sup>70</sup>, 1018<sup>77</sup>, 1021<sup>30</sup>, 1021<sup>40</sup>, 1027<sup>35</sup>, 1027<sup>40</sup>, &c., &c.

OSSIFICATION (?), 1289<sup>43</sup>, 1289<sup>80</sup>.

CARCINOMA, 1292<sup>20</sup>, <sup>21</sup>.

RUPTURED ODONTOID LIGAMENT, 1289<sup>32</sup>.

Dislocation of vertebræ, 1292<sup>60</sup>, 1292<sup>65</sup>, 1292<sup>70</sup>.—See also Spine.

Ankylosis of vertebræ together, to ribs, to head, &c.—See Spine.

### CLAVICULAR JOINTS.

DISLOCATION on sternum, 1292<sup>90</sup>.

NEW ARTICULAR SURFACE on clavicle, 1293.

### CARTILAGES OF RIBS.

ABSORBED BY ANEURISM, 1294<sup>25</sup>.

MALFORMATION, 1294<sup>60</sup>.

OSSIFICATION, 1294<sup>60</sup>, 1294<sup>68</sup>, <sup>69</sup>.

DISLOCATION, 1034<sup>40</sup>.

Ankylosis to sternum.—See Sternum.

### TEMPORO-MAXILLARY ARTICULATION.

ANKYLOSIS, 1070.

### SHOULDER-JOINT.

CHRONIC RHEUMATIC ARTHRITIS, 1295<sup>25</sup>, 1295<sup>60</sup>, 1297<sup>25</sup>, 1297<sup>30</sup>, 1297<sup>70</sup>, 1298<sup>60</sup>, 1100<sup>30</sup>, 1100<sup>45</sup>, 1100<sup>60</sup>, 1097<sup>90</sup> (?), 1098 (?).

ULCERATION OF CARTILAGE, 1103<sup>60</sup>.

Accompanied by caries of bone, 1100<sup>80</sup>, 1103<sup>25</sup>, 1097.

DISLOCATION, 1295<sup>60</sup> (?), 1297<sup>25</sup> (?), 1297<sup>30</sup> (?), 1297<sup>60</sup>, 1297<sup>70</sup>, 1298<sup>60</sup>, 1298<sup>65</sup>.

With fracture, 1114, 1114<sup>30</sup>.

FRACTURE INTO JOINT, 1113<sup>60</sup>.

EXCISION OF JOINT, 1103<sup>25</sup>.

## ELBOW.

MALFORMATION, 1306<sup>66</sup>.

ULCERATION OF CARTILAGE, 1298<sup>80</sup>, 1107<sup>25</sup>.

“ “ with caries and necrosis of bone, 1299, 1301, 1301<sup>60</sup>,  
1301<sup>75</sup>, 1301<sup>76</sup>, 1303<sup>60</sup>, 1117<sup>60</sup>, 1112<sup>85</sup>.

ANKYLOSIS, (ligamentous), 1300, 1303.

“ BONY (synostosis), 1302, 1302<sup>1</sup>, 1304, 1304<sup>15</sup>, 1304<sup>25</sup>, 1304<sup>30</sup>, 1304<sup>35</sup>,  
1304<sup>60</sup>.

“ Of radius and ulna, 1306<sup>60</sup>, 1306<sup>90</sup>.

RESECTION, 1302<sup>10</sup>, 1302<sup>15</sup>, 1302<sup>20</sup>, 1112<sup>75</sup>.

CHRONIC RHEUMATIC ARTHRITIS, 1303<sup>25</sup>, 1303<sup>30</sup>, 1305.

OSSICLE IN JOINT, 1298<sup>75</sup>, 1298<sup>77</sup>.

DISLOCATION, 1306, 1306<sup>32</sup>, 1306<sup>40</sup>, 1306<sup>64</sup>, 1307.

FRACTURE INTO JOINT, 1304<sup>25</sup>, 1304<sup>30</sup> (?), 1107<sup>80</sup>, 1112, 1112<sup>60</sup>, 1112<sup>75</sup>, 1112<sup>85</sup>, 1113,  
1119<sup>25</sup>.

OLECRANON, 1118, 1119<sup>23</sup>, 1119<sup>36</sup>.

## WRIST.

ULCERATED CARTILAGE, 1309, 1309<sup>40</sup>, 1310.

FRACTURE, near or into Joint, 1117<sup>40</sup>, 1119<sup>30</sup>, 1119<sup>32</sup>.

## CARPAL JOINTS.

ULCERATED CARTILAGE, 1309, 1309<sup>40</sup>, 1309<sup>50</sup>, 1310.

## DIGITAL JOINTS.

INFLAMMATION OF SYNOVIAL MEMBRANE, 1311<sup>10</sup>.

ULCERATION AND CARIES OF JOINT, 1311, 1124<sup>30</sup>.

DISLOCATION, 1312<sup>60</sup>, 1313, 1313<sup>10</sup>.

## PELVIC ARTICULATIONS.

SEPARATION of pubic articulations, 1314.

INFLAMMATION of pubic articulations, 1314<sup>16</sup>, 1314<sup>60</sup>.

ANKYLOSIS of pubic articulations, 1128<sup>25</sup>, 1130, 1314<sup>25</sup>, 1314<sup>30</sup>.

“ of sacro-iliac synchondrosis. See Pelvis.

## HIP-JOINT.

ULCERATION OF CARTILAGE, 1315, 1315<sup>60</sup>, 1316, 1316<sup>60</sup>, 1317<sup>20</sup>, 1180, 1181.

CARIES AND NECROSIS, 1317, 1317<sup>7</sup>, 1317<sup>11</sup>, 1317<sup>15</sup>, 1317<sup>25</sup>, 1317<sup>40</sup>, 1317<sup>60</sup>, 1317<sup>70</sup>,  
1317<sup>75</sup>, 1317<sup>80</sup>, 1317<sup>90</sup>, 1318, 1318<sup>8</sup>, 1318<sup>16</sup>, 1318<sup>18</sup>, 1318<sup>20</sup>, 1318<sup>24</sup>, 1156.

#### ANKYLOSIS.

Ligamentous, 1318<sup>35</sup>, 1318<sup>65</sup>, 1318<sup>70, 71</sup>.

Bony (synostosis), 1318<sup>28</sup>, 1318<sup>32, 33</sup>, 1318<sup>40</sup>, 1318<sup>45</sup>, 1318<sup>48, 49</sup>, 1318<sup>51</sup>, 1318<sup>53</sup>, 1318<sup>55</sup>, 1318<sup>60</sup>, 1007<sup>35</sup>.

CHRONIC RHEUMATIC ARTHRITIS, 1319, 1319<sup>10</sup>, 1319<sup>20</sup>, 1319<sup>24</sup>, 1319<sup>26</sup>, 1319<sup>28</sup>, 1319<sup>30</sup>, 1319<sup>32</sup>, 1319<sup>36</sup>, 1319<sup>40</sup>, 1319<sup>50</sup> (?), 1131, 1131<sup>33</sup>, 1131<sup>60</sup>, 1131<sup>66</sup>, 1132, 1132<sup>33</sup>, 1144, 1145 (?), 1146, 1146<sup>32, 66</sup>, 1147, 1148, 1149, 1150, 1151, 1187<sup>64</sup>, 1205, 1209<sup>32</sup>.

ADVENTITIOUS CARTILAGE, 1316<sup>25</sup>.

LOOSE BODIES IN JOINT, 1316<sup>60</sup>.

Around joint, 1316.

DISLOCATION, 1319<sup>50</sup> (?), 1320, 1321<sup>60</sup>, 1321<sup>65</sup>, 1322<sup>32</sup>, 1324<sup>25</sup>.

#### KNEE-JOINT.

INFLAMMATION OF SYNOVIAL MEMBRANE, 1329<sup>20</sup>, 1329<sup>40, 41</sup>, 1248<sup>70</sup> (?).

ULCERATION OF CARTILAGE, 1325, 1325<sup>50</sup>, 1326, 1326<sup>50</sup>, 1327, 1328, 1329<sup>10, 11</sup>, 1329<sup>50</sup>, 1329<sup>55</sup>, 1329<sup>57</sup>, 1329<sup>60</sup>, 1329<sup>65</sup>, 1329<sup>70</sup>, 1329<sup>75</sup>, 1329<sup>88, 89, 90, 91</sup>, 1332, 1332<sup>5</sup>, 1332<sup>50</sup>, 1333, 1333<sup>50</sup>, 1334<sup>25</sup>, 1334<sup>38</sup>, 1334<sup>81</sup>, 1334<sup>84, 85, 86, 87</sup>, 1335<sup>30</sup>, 1335<sup>40</sup>, 1336, 1340, 1340<sup>50</sup>, 1340<sup>60</sup>, 1341, 1341<sup>50</sup>, 1343.

CARIES AND NECROSIS, 1329<sup>65</sup>, 1334<sup>25</sup>, 1334<sup>75</sup>, 1334<sup>84</sup>, 1335<sup>35</sup>, 1344<sup>10</sup>, 1345<sup>50</sup>, 1157<sup>50</sup>, 1160<sup>30</sup>, 1197<sup>48</sup>, 1197<sup>88</sup>, 1245<sup>40</sup>, 1245<sup>45</sup>, 1245<sup>48</sup>, 1245<sup>50</sup>, 1245<sup>55</sup>, 1245<sup>60</sup>, 1248<sup>16, 32</sup>.

#### ANKYLOSIS.

Ligamentous, 1334<sup>38</sup>, 1334<sup>50</sup>, 1334<sup>75</sup>, 1335, 1335<sup>5</sup>, 1335<sup>10</sup>, 1337, 1337<sup>25, 26</sup>, 1337<sup>75</sup>, 1338, 1338<sup>25, 26, 27</sup>, 1338<sup>50</sup>, 1339, 1210<sup>80</sup>, 1245<sup>50</sup>.

Bony (synostosis), 1337<sup>25, 26</sup>, 1337<sup>30</sup>, 1337<sup>45</sup>, 1337<sup>50</sup>, 1339<sup>50</sup>, 1197<sup>88</sup>.

Softened ankylosis, 1335<sup>30</sup>, 1335<sup>35</sup>.

#### DISLOCATION.

From disease, 1329<sup>75</sup>, 1335<sup>30</sup>, 1337, 1339<sup>50</sup>, 1344<sup>80</sup>, 1345, 1345<sup>50</sup>, 1346.

EXCISION OF JOINT, 1329<sup>57</sup>.

CHRONIC RHEUMATIC ARTHRITIS, 1343<sup>50</sup>.

LOOSE CARTILAGES AND PEDUNCULATED GROWTHS, 1344<sup>20</sup>, 1344<sup>30</sup>, 1344<sup>40</sup>, 1344<sup>60</sup>, 1344<sup>80</sup>.

GOUTY DEPOSIT, 1327<sup>50</sup>.

WOUND, 1326<sup>50</sup>.

CARCINOMA, 1347, 1347<sup>50</sup>, 1347<sup>60</sup>.

#### ANKLE, TARSAL, AND DIGITAL JOINTS.

Talipes, 1352<sup>55</sup>, 1352<sup>75</sup>.

Chinese Lady's Foot, 1352<sup>60</sup>.

Inflammation of Synovial Membrane, 1352<sup>12</sup>, 1352<sup>18</sup>.

Ulceration of Cartilage, 1352, 1352<sup>25</sup>, 1360, 1360<sup>25, 26</sup>.

Caries and Necrosis, 1239<sup>32</sup>, 1266<sup>75</sup>, 1284<sup>48</sup>, 1353<sup>10</sup>, 1360<sup>50</sup>.

#### ANKYLOSIS.

Ankle, 1225, 1281<sup>75</sup>, 1353, 1360<sup>25</sup>.

Astragalus to os calcis, 1225, 1281<sup>75</sup>.

Tarsus to metatarsus, 1284<sup>54</sup>, 1284<sup>64</sup>, 1284<sup>70</sup>, 1284<sup>74</sup>.

Phalangeal, 1287<sup>32</sup>, 1287<sup>64</sup>.

Astragalus removed by Operation, 1353<sup>10</sup>, 1357<sup>60</sup>.

Repair after removal of Astragalus, 1353<sup>10</sup>.

Fracture of Tibia into Ankle-joint, 1260<sup>40</sup>, 1266<sup>76</sup>, 1281<sup>76</sup>, 1283, 1349, 1353.

Fracture of Astragalus into Ankle-joint, 1284<sup>75</sup>.

Dislocation of Ankle-joint with fracture, 1354, 1355, 1356, 1357.

Dislocation of Toe, 1360<sup>65</sup>.

Portion of Tibia removed in dislocation, 1357.

Cancer of Toe, 1360<sup>80</sup>.

Chronic Rheumatic Arthritis, 1285<sup>60</sup>.

## TENDONS, MUSCLES, BURSÆ, &c.

Biceps with Supernumerary Head, 1361<sup>57</sup>.

Biceps with Deficient Head, 1361<sup>55</sup>.

Ossified Tendon, 1361<sup>60</sup>, 1368 (?).

Tendons affected by Inflammation, 1365, 1366, 1366<sup>25</sup>, 1366<sup>75</sup>, 1375<sup>88</sup>, 1376, 1377<sup>52</sup>,  
1124<sup>28</sup>, 1124<sup>30</sup>.

Tendon torn, 1367, 1119<sup>65</sup>.

Repaired Tendo-achillis, after division, 1376<sup>5</sup>, 1376<sup>10</sup>.

Tumor growing from Tendon, 1366<sup>60</sup>, 1366<sup>70</sup>.

### BURSA.

From knee, 1374<sup>80</sup>, 1374<sup>90</sup>, 1375, 1375<sup>15</sup>, 1375<sup>20</sup>, 1375<sup>25</sup>, 1375<sup>50</sup>, 1375<sup>55</sup>, 1375<sup>60</sup>,  
1375<sup>65</sup>, 1375<sup>70</sup>.

From wrist, 1364<sup>60</sup>.

From tuberosity of ischium, 1369<sup>20</sup>.

From head of gastronemius, 1375<sup>75</sup>.

From peroneus muscle, 1377<sup>60</sup>.

From tendons of toe, 1377<sup>75</sup>, 1377<sup>80</sup>.

Pedunculated and Loose Bodies in sheaths of Tendons and Bursæ, 1364, 1364<sup>12</sup>,  
1364<sup>25</sup>, 1364<sup>60</sup>, 1375, 1375<sup>25</sup>, 1375<sup>70</sup>.

Muscle containing the Trichina Spiralis, 1361<sup>30</sup>, 1361<sup>40</sup>, 1362<sup>16</sup>.

Muscle converted into Fat, 1369.

Muscle in state of Suppuration, 1361<sup>50</sup>.

Fibrous Tumor,\* 1361<sup>45</sup>, 1362<sup>20</sup>, 1363<sup>85</sup>, 1369<sup>16</sup>, 1377<sup>54</sup>, 1378.

Fibro-cartilaginous and Bony, 1361, 1361<sup>46</sup>, 1361<sup>47</sup>, 1361<sup>48</sup>, 1363<sup>90</sup>, 1376<sup>40</sup>.

Gelatinous sarcoma (?), 1361<sup>48</sup>, 1376<sup>60</sup>.

Recurrent Fibroid, 1362<sup>48</sup>, 1362<sup>70</sup>, 1363<sup>20, 30, 40, 50</sup>, 1369<sup>55</sup>, 1376<sup>30</sup>, 1376<sup>45</sup>, 1376<sup>46</sup>,  
1376<sup>50</sup>, 1376<sup>51</sup>, 1376<sup>55</sup>.

Cystic tumor, 1369<sup>25</sup>, 1362<sup>32</sup>, (sebaceous?).

Steatoma, 1362<sup>64, 65</sup>.

Melanosis, 1362<sup>35</sup>, 1369<sup>60</sup>.

Cancer, 1362<sup>40</sup>, 1363, 1363<sup>60</sup>, 1363<sup>70</sup>, 1363<sup>80</sup>, 1365<sup>50</sup>, 1369<sup>48</sup>, 1369<sup>64</sup>, 1374<sup>40</sup>.

Cysticerous Cellulosæ, 1362<sup>30</sup>, 1369<sup>18</sup>.

Gangrene of Hand, 1376<sup>80</sup>.

Gangrene of Foot, 1377, 1377<sup>25</sup>, 1377<sup>30</sup>.

\* Tumors will be found in various sections, according to the organs in which they have grown: thus those here referred to were supposed to have originated in the muscles. This, in many instances, is very doubtful; but they have been allowed to remain, as great inconvenience would have attended their removal.



## PATHOLOGICAL TABLE.

To facilitate the study of the diseases of the bones, the following table has been added, framed from a selection of the most remarkable specimens in the respective divisions.

### MALFORMATION.

<i>Spine.</i> . . . . .	Supernumerary dorsal, 1000 <sup>50</sup> . Supernumerary lumbar, 1006 <sup>90</sup> . Supernumerary sacral, 1027. Deficient union, 1000 <sup>90</sup> , 1004 <sup>92</sup> , 1008 <sup>92</sup> , and Spina-bifida.
<i>Cranium.</i> . . . . .	Unsymmetrical, 1055 <sup>50</sup> , 1055 <sup>75</sup> . Encephalocele, 1055 <sup>25</sup> . Frontal suture, 1062, 1063.
<i>Sternum.</i> . . . . .	Ill shaped, 1038 <sup>70</sup> . Bifid, 1040, 1041. Episternal bones, 1038 <sup>20</sup> .
<i>Ribs.</i> . . . . .	Supernumerary, 1045, 1045 <sup>70</sup> . Deficient, 1044. Bifid, 1046.
<i>Humerus.</i> . . . . .	Supra condyloid process, 1100 <sup>15</sup> .
<i>Forearm.</i> . . . . .	Defective, 1306 <sup>56</sup> ,
<i>Hands and Feet.</i> . . . . .	Defective, 1119 <sup>40</sup> , 1284 <sup>80</sup> .

### HYPERTROPHY.

<i>Cranium.</i> . . . . .	Hydrocephalus, 1000, 1057, 1057 <sup>50</sup> , 1065. Wormian bones, 1060 <sup>50</sup> , 1061 <sup>35</sup> , 1061 <sup>70</sup> . Spongy, 1067, 1069 <sup>55</sup> . Dense (sclerosis), 1068 <sup>35</sup> .
<i>Upper extremity.</i> . . . . .	From increased function, 1000 <sup>15</sup> .
<i>Fibula.</i> . . . . .	From increased function, 1268.
<i>Lower extremity.</i> . . . . .	Spongy, 1132 <sup>50</sup> .

### EXOSTOSIS AND OSTEOPHYTE.

<i>Calvaria.</i> . . . . .	External, 1074 <sup>29</sup> , 1074 <sup>35</sup> . Internal, 1073, 1074. Puerperal, 1072 <sup>65</sup> .
<i>Os femoris.</i> . . . . .	1151 <sup>50</sup> , 1151 <sup>76</sup> , 1152 <sup>5</sup> .
<i>Toe.</i> . . . . .	1289 <sup>17</sup> .

ATROPHY.

- Lower extremity.* . . . Disease, 1000<sup>16</sup>.  
Old age, 1134<sup>74, 75</sup>.  
*Neck of thigh-bone.* Old age, 1136, 1141, 1142, 1187.  
*Cranium.* . . . . Pacchionian bodies.  
*Spine.* . . . . Pressure by aneurism, 1004<sup>80</sup>, 1489<sup>30</sup>.  
*Ribs.* . . . . Pressure by aneurism, 1044<sup>75</sup>, 1491, 1494.  
*Sternum.* . . . . Pressure by aneurism, 1485<sup>55</sup>.  
*Tibia.* . . . . Pressure by aneurism, 1233<sup>50</sup>.

INFLAMMATION AND RESULTS :—

PERIOSTITIS.

- Radius.* . . . . 1114<sup>60</sup>.  
*Femur.* . . . . 1153<sup>25</sup>, 1158<sup>64</sup>, 1158<sup>70</sup>.  
*Tibia.* . . . . 1216<sup>75</sup>, 1218, 1219, 1245<sup>40</sup>.

OSTITIS.

- Femur.* . . . . 1152<sup>85</sup>.  
*Tibia.* . . . . 1260<sup>45</sup>.  
*Os humeri.*

CARIES.

- Cranium.* . . . . Scrofulous, 1078<sup>66, 67</sup>, 1081.  
Syphilitic, 1075<sup>35</sup>, 1075<sup>36</sup>, 1075<sup>40</sup>, 1075<sup>75</sup>.  
Traumatic, 1075<sup>20</sup>, &c.  
*Vertebrae.* . . . . See Spine.

NECROSIS.

- Cranium.* . . . . 1077<sup>80</sup>, and from 1080 to 1080<sup>80</sup>.  
*Lower jaw.* . . . . 1091<sup>5</sup>, 1091<sup>7</sup>.  
*Tibia.* . . . . 1232<sup>10</sup>, 1233<sup>20</sup>, 1245<sup>60</sup>, 1246, 1247.  
*Os humeri.* . . . . With new bone, 1103, 1103<sup>75</sup>.  
*Os femoris.* . . . . With new bone, 1157<sup>80</sup>, 1160<sup>48</sup>.  
*Tibia.* . . . . With new bone, 1242, 1244, 1244<sup>50</sup>, 1245.  
*Fibula.* . . . . With new bone, 1227<sup>50</sup>, 1245<sup>60</sup>.  
*Foot.* . . . . With new bone, 1284<sup>60</sup>, 1284<sup>62</sup>.

LATERAL CURVATURE OF SPINE, 1000<sup>25</sup>, 1006<sup>40</sup>, 1006<sup>60</sup>, 1006<sup>63</sup>, 1006<sup>66</sup>, 1006<sup>80</sup>.

ANGULAR CURVATURE OF SPINE, 1006<sup>50</sup>, 1006<sup>70</sup>, 1006<sup>75</sup>, 1021<sup>50</sup>, 1024<sup>62</sup>, 1024<sup>75</sup>, 1024<sup>85</sup>.

ANKYLOSIS.

- Shoulder*  
*Elbow.* . . . . Bony, 1302, 1304, &c.  
*Wrist.* . . . . 1123<sup>75</sup>, 1124<sup>8</sup>, 1124<sup>16</sup>.  
*Hip.* . . . . Bony, 1318<sup>48</sup>, 1318<sup>55</sup>.  
Ligamentous, 1318<sup>70</sup>, 1334<sup>50</sup>.  
*Knee.* . . . . See Knee-Joint.  
*Ankle.* . . . . 1225, 1281<sup>75</sup>, 1353.  
*Temporo-mazillary joint,* 1070.  
*Vertebrae, ribs, sternum, &c. ;* see respective bones.

EXCISION OF JOINTS.

Shoulder, 1103<sup>25</sup>.  
Elbow, 1112<sup>75</sup> (fracture) ; 1302<sup>10</sup>, 1302<sup>15</sup>, 1302<sup>20</sup> (disease).  
Hip.  
Knee, 1329<sup>57</sup>.

CHRONIC RHEUMATIC ARTHRITIS.

Vertebræ, 1007<sup>5</sup>, 1010<sup>75</sup>, 1011<sup>25</sup>, 1017 (?).  
Shoulder, 1100<sup>30</sup>, 1100<sup>45</sup>, 1295<sup>25</sup>, 1295<sup>50</sup>, &c.  
Elbow, 1303<sup>25</sup>, 1303<sup>30</sup>, 1305.  
Hip, 1131<sup>33</sup>, 1131<sup>50</sup>, 1149, 1319, 1319<sup>10</sup>, 1319<sup>32</sup>, 1319<sup>50</sup>.  
Knee, 1343<sup>50</sup>.  
Toe, 1285<sup>50</sup>.  
Pelvis, 1127, 1128, 1128<sup>25</sup>, 1128<sup>50</sup>, 1129 (?).

INJURY.

Spine, sternum, ribs, &c. ; see

- Cranium*. . . . Depressed bone, 1083<sup>42</sup>, 1083<sup>58</sup>.  
Fractured base and temporal bone, 1082<sup>50</sup>, 1083<sup>23</sup>, 1085<sup>55</sup>,  
1085<sup>90</sup>.  
Internal and external tables separately fractured, 1083<sup>75</sup>.  
Separation at sutures, 1086, 1086<sup>80</sup>.  
Gun-shot, 1086<sup>75</sup>.  
Trepine, 1083<sup>29, 30</sup>, 1083<sup>60</sup>.  
Showing repair, 1084<sup>15</sup> to 1085<sup>80</sup>, and 1086<sup>85</sup>.  
*Clavicle*. . . . In process of repair, 1094<sup>95</sup>.  
*Scapula*. . . . Fractured neck, 1097<sup>85</sup>.  
Gun-shot, 1097<sup>35</sup>.  
*Os femoris*. . . . Fractured cervix, 1176, &c.  
Fractured cervix undergoing repair, 1183, 1184, 1185<sup>5</sup>.  
Impacted fracture, 1187<sup>54</sup>, 1187<sup>64</sup>, 1188<sup>60</sup>, 1189<sup>50</sup>, 1189<sup>60</sup>.  
Section of united ends, 1197<sup>65, 66</sup>, 1197<sup>80</sup>.  
After amputation.—See Bone.  
*Tibia and fibula*. . . . After amputation, 1260<sup>15</sup>.  
Gun-shot (?), 1260<sup>12</sup>.  
*Patella*. . . . Transverse fracture united by ligament, 1211<sup>80, 81, 83, 90, 91</sup>.  
Transverse fracture united by bone, 1211<sup>75</sup>.  
Vertical fracture united by bone, 1211<sup>32, 64, 65</sup>.  
*Astragalus*. . . . 1284<sup>75</sup>.

DISLOCATION.

Shoulder, 1297<sup>50</sup>, 1298<sup>50</sup>, 1298<sup>55</sup>.  
Shoulder with fracture, 1114, 1114<sup>30</sup>.  
Elbow, 1306<sup>32</sup>, 1306<sup>40</sup>.  
Fingers, 1312<sup>50</sup>, 1313, 1313<sup>10</sup>.  
Hip, 1320, 1322<sup>32</sup>.  
From Disease.—See Joints.

EXCISION OF FRACTURED ENDS OF BONE.

Tibia, 1260<sup>30</sup>.

FALSE JOINT.

Os humeri, 1110<sup>75</sup>, 1110<sup>80</sup>.  
Radius and ulna, 1119<sup>20</sup>, 1119<sup>35</sup>.  
Tibia and fibula, 1260<sup>20</sup>.

RICKETS.

Whole skeleton, 1000<sup>10</sup>.  
Long bones, 1000<sup>35</sup>, 1135<sup>60</sup>, 1135<sup>75</sup>, 1213<sup>72</sup>, 1214<sup>20</sup>.

MOLLITIES OSSIUM.

Skeleton, 1000<sup>30</sup>.  
Spine, 1004<sup>88</sup>, <sup>80</sup>.  
Pelvis, 1124<sup>90</sup>, 1129<sup>60</sup>.  
Thorax, 1044<sup>62</sup>.  
Scapula and ribs, 1098<sup>60</sup>.  
Os femoris, 1160<sup>64</sup>, <sup>65</sup>.  
Tibia and fibula, 1212<sup>82</sup>.

ADVENTITIOUS GROWTHS.

*Enchondroma*.—Upper jaw, 1666<sup>32</sup>.  
Lower jaw, 1091<sup>15</sup>, 1091<sup>28</sup>.  
Shoulder, 1098<sup>20</sup>.  
Finger, 1122, 1124<sup>60</sup>.  
Ilium, 1132<sup>53</sup>.  
Os femoris, 1160<sup>86</sup>.  
Toe, 1285<sup>80</sup>.

OSTEOSARCOMA.

Forearm, 1117<sup>30</sup>.  
Os femoris, 1162<sup>65</sup>, 1163, 1168.  
Tibia, 1251<sup>25</sup>, 1251<sup>80</sup>.

OSTEIOD CANCER.

Os humeri, 1107 (?).  
Os femoris, 1165<sup>60</sup>.

SCIRRHOUS CANCER.

Tibia, 1251<sup>85</sup>.

ENCEPHALOID CANCER.

Spine, 1028, 1028<sup>60</sup>, 1029<sup>20</sup>, 1029<sup>25</sup>, 1037.  
Rib, 1050, 1050<sup>40</sup>.  
Cranium, 1081<sup>45</sup>, 1081<sup>60</sup>.  
Scapula, 1098<sup>10</sup>, 1098<sup>15</sup>.  
Clavicle, 1106<sup>5</sup>.  
Os humeri, 1106<sup>5</sup>, 1107<sup>20</sup>, 1107<sup>22</sup>.  
Os femoris, 1162<sup>12</sup>.  
Patella, 1210<sup>97</sup>.  
Fibula, 1251<sup>65</sup>, 1268<sup>60</sup>.

CANCEROUS EROSION.

Cranium, 1081<sup>40</sup>.  
Pelvis, 1132<sup>64</sup>.

LUPUS (?).

Cranium, 1087<sup>48</sup>.

EPITHELIAL CANCER OF PERIOSTEUM (?), 1223<sup>20</sup>, 1248<sup>88</sup>.

MELANOSIS OF PERIOSTEUM, 1257<sup>60</sup>.

MYELOID DISEASE.

Scapula, 1098<sup>5</sup>.

Radius, 1117<sup>20</sup>.

Os femoris, 1160<sup>60</sup>, 1162<sup>90</sup>, 1162<sup>31</sup>, 1162<sup>32</sup>.

Patella, 1210<sup>05</sup>.

Tibia, 1255 (2), 1255<sup>26</sup>, 1255<sup>30</sup>.

Fibula, 1268<sup>60</sup>.

FIBRO-CYSTIC DISEASE OF JAW, 1087, 1091<sup>69</sup>.

TUBERCLE.

HYDATID.

Spine, 1029<sup>90</sup>.

Tibia, 1258.

BLOOD TUMORS.

Cephalhæmatoma.

Osteo-aneurism.

ERRATUM.

Page 40, for 1169<sup>80</sup> read 1269<sup>80</sup>.

## DISEASES AND INJURIES OF THE BONES.

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### SPINE.\*

1000. Skeleton of a man affected from infancy with chronic hydrocephalus. It is of moderate stature, but the bones are slender. The cranium measures 33 inches in circumference; and from the articulation of the lower jaw, across the vertex to the opposite side, 21 inches. The numerous ossa triquetra at the sides and top of the head are very remarkable.

Case of James Cardinal, aged 29, who died under Sir A. Cooper's care in Guy's Hospital, in 1824. He was born at Coggleshall, Essex, in 1795, when his head was a very little larger than natural; but in a fortnight's time it began to increase, and gradually grew until, at five years of age, his mother thought it was as large as at the present time. He was unable to walk until 6 years old, but went to school and learned to read and write. It was said if a candle was placed near him, his head was semitransparent. He continued in tolerable health until the age of 23, when he began to have fits, and for these he came to the hospital. He presented a very remarkable appearance, the head being about twice its size in proportion to his body; he was rather under the average stature, and was childish in his manners, but otherwise his mental faculties were moderately developed. He died at last of pulmonary affection. Upon opening the head, the brain was found lying at the base of the skull, and between the membranes about 6-7 pints of fluid; also within the ventricles about 1 pint. It appeared, from an opening in the corpus callosum, as if the fluid had originally been within the ventricles, but had burst out and compressed the brain downwards. The whole skull was able to contain ten pints of fluid.

1. Note-Book, p. 72; and Dr. Bright's published Medical Reports.

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\* The first few specimens, constituting entire skeletons, are from necessity placed out of their proper order.

- 1000<sup>5</sup>. Skeleton of a male subject, of which both the *ossa femorum* are greatly enlarged, from periosteal inflammation induced by mercury. Both humeri and the left tibia are also affected, and some other bones slightly.
- 1000<sup>10</sup>. Skeleton of a small female. The bones of the extremities, especially of the lower, are much distorted with rickets. The chest is prominent. The spine is well curved in the dorsal region, and then makes a considerable projection forward in the lumbar region, whereby the lower bones appear to sink into the pelvis, and the sacrum is thrust backward almost in a horizontal direction. The rami of the ischia and pubes are thrust outwards, and the tuberosities considerably everted. The *ossa humeri* are slightly bent forwards, and bones of forearm outward. The *ossa femorum* are bent outward and forward at their middle, which causes the condyles to meet or even overlap: the bones of the leg being curved in the same direction, cause the feet to be again thrust outwards.
- 1000<sup>15</sup>. Skeleton of an adult male, long paraplegic, who was habituated to the mode of locomotion which the former now indicates. Progression was performed by the arms and trunk, the legs being dragged along, as in the present attitude. It will be seen how, by long-continued exercise of the one, and disuse of the other, the bones of the upper extremities have become stronger than those of the lower. The parts resting on the ground appear to have been the tuberosities of the tibia, the inner malleolus and inner side of right foot, and dorsum of left foot. The spine is curved more than in the natural condition, the upper part of the dorsal region being thrust slightly forward, and the lower part much backward.
- 1000<sup>20</sup>. Female skeleton, aged  $3\frac{1}{2}$  years, illustrating the effects of scrofulous disease. This is principally seen in the enlargement of the right humerus, and in the ulceration of the ribs.
- 1000<sup>25</sup>. Vertebral column, with ribs and pelvis attached, from a female aged 64. There is great lateral curvature of the upper

part of the spine, by the inclination of the first six bones to the left side; these are bent at a right angle with the column below. The lumbar vertebræ have been superficially ankylosed, though now there are merely seen exostoses on the edges of the bodies. The chest is much distorted, being raised on the right side and depressed on the left; the ribs of the latter approach close to the fifth lumbar vertebra. The pelvis is slightly distorted, the right oblique diameter being increased, and the antero-lateral rendered oblique and towards the right side. The pelvis sinks on the left side, so that the right tuberosity of ischium is above the plane of its fellow. The femur, tibia, and fibula, also distorted.

See 1134<sup>90</sup> and 1214<sup>20</sup>.

1000<sup>30</sup>. Natural skeleton of a sweep, much distorted from mollities ossium, and exhibiting numerous fractures. The pelvis is of the triangular shape, and the outlet nearly closed; the ribs and scapula are much bent, and the femora are likewise curved; the clavicles have been bent or fractured. The other bones are tolerably straight.

1000<sup>35</sup>. Separate bones of a rickety skeleton. The principal change is in the ossa femorum, which are bent outwards nearly at right angles. The ossa humeri are also somewhat affected in a similar way, but the other bones only slightly. The skull is remarkably thin and light, and the whole skeleton is in a similar condition. There has apparently been some caries of frontal bone, and there is a small exostosis of first lumbar vertebra. Thorax capacious; pelvis natural. It appears to have belonged to a young person, though the epiphyses have ossified.

1000<sup>40</sup>. A pelvis, showing the sacrum joined to the third lumbar vertebra, the bodies of the fourth and fifth being nearly wholly destroyed, or only the remains of them seen between the two former bones. Posteriorly the spinous processes, with the arches and transverse processes, are seen to be perfect, although the bodies are gone; but they are ankylosed to one another.



- 1000<sup>50</sup>. Spine and pelvis, showing a supernumerary vertebra. There is a thirteenth dorsal, having a small rib attached on each side. (This has been sawn through and again joined.) The last lumbar is also malformed; instead of having an ordinary transverse process, this part is broad and intimately connected with the sacrum, having a disposition to form one piece with it.
- 1000<sup>90</sup>. Original malformation of the atlas. This was considered at one time to be a fractured bone, but it appears to be made up of two distinct lateral halves. The junction posteriorly is by rounded ends; but anteriorly, where the two portions form the articular surface for the odontoid process, the extremities of the bones are broad and flattened, and appear as if they had been joined by a fibro-cartilage.
1001. Spina bifida in a young subject, showing simply the deficiency of spinous processes, and the spreading out of the laminæ of the lumbar vertebræ.
- 1001<sup>40</sup>. A spina bifida in a fœtus, at a very early period of existence.  
Presented by Dr. Addison.
- 1001<sup>50</sup>. A spina bifida dried.
- 1002<sup>50</sup>. A spina bifida dissected, to show the connection between the cord and the pouch. The fœtus was fully grown at birth. The bodies of the vertebræ are perfect, together with the medulla and nerves, but the arches of the three last lumbar vertebræ and those of the sacrum are deficient. From this space proceeds a sac the size of a large walnut, which was filled with fluid; the external integument is thin, the lining membrane is continuous with the arachnoid, and between the two is some loose cellular tissue. Near the small opening on its anterior surface, by which it communicates with the spinal canal, some nerves are seen running. August, 1837.

12. Misc. Insp. Book, p. 163. Drawing 1<sup>50</sup>.

Presented by Messrs. Tweedie and Browse.

1003. The sac of a spina bifida about the size of an egg, included in a ligature and sloughing.

Mr. Butler, Woolwich.

1004. Sacrum, with the canal partially open posteriorly, from deficiency of the spinous processes.

1004<sup>50</sup>. Sacrum, with the canal completely open posteriorly, from deficiency of the spinous processes.

1004<sup>55</sup>. Sacrum, showing necrosis of bone produced by bed sore, and involving the spinal cord.

Case of Jane G., aged 44, a patient of Mr. Hilton. She had her breast removed for cancer; and, erysipelas ensuing, she was confined to her bed for some time. A bed sore came, which soon reached the bone, and finally the spinal canal became exposed; some paralysis coming on before death. On post-mortem examination it was found that a probe could be passed from the external sore into the canal, and that the whole of the spinal membranes were bathed in pus as high as the cerebellum, whose surface also was slightly inflamed.

Record of Inspec., No. 142. 1857.

1004<sup>75</sup>. Abdominal portion of spine, dried, with part of an aneurismal sac, communicating with the aorta by a considerable oval vertical opening. The bodies of the two upper lumbar vertebræ are partially absorbed by the pressure. The sac was of great extent, and the left kidney was flattened, wasted, and stretched over it.

Case of Augustus E., aged 32, under Dr. Addison, November, 1834; Æg<sup>t</sup>. two years.

6. Misc. Inspec. Book, p. 101.

1004<sup>80</sup>. Sections of vertebræ eroded by aneurism, the intervertebral substance being entire.

1004<sup>85</sup>. Bodies of dorsal vertebræ absorbed by an aneurism, and the spinal cord exposed. The sixth, seventh, and eighth vertebræ are almost wholly destroyed, and the ribs near the angles are also partly absorbed. The theca vertebralis is laid open, and the medulla exposed.

Case of Richard T., aged 38, under Dr. Addison in June, 1838. He was a policeman, and suffered from symptoms of aneurism for three years, which he attributed to a sudden exertion and sprain of the back.

Finally the tumor was felt pulsating in the back, and he had complete paraplegia. See Prep. of ribs, 1044<sup>75</sup>.

13. Misc. Insp. Book, p. 163.

1004<sup>88</sup>. A section of four vertebræ, affected with mollities ossium; they are soft and sponge-like, consisting simply of an organic matrix with little earthy matter, and containing little fat.

Case of Sarah U., aged 39, first seen by Mr. Solly, in October, 1843. He stated that she was a married woman with no family; had had good health until the last three years, since which time been ailing, and suffered from pain in back. A year ago she began to suffer from pains, which she called rheumatic; these rapidly increased, with great debility, so that she was scarcely able to walk. At the expiration of six months, when attempting to move, she fell, her legs bent under her, and since this time she had kept her bed. When seen she was found almost doubled up, her spine curved, chest flattened, both clavicles bent, and the thigh bones broken, allowing the legs to be bent backwards on the body. In April, 1844, she died, the distortion having become greater, and the bones of the arms having also given way. On post-mortem examination, all the bones were found flexible, including those of the head; and on section were vascular, soft, reticulated, and filled with a red grumous matter, the amount of earthy constituents varying in the different bones.

Presented by Mr. Solly. See case in Med. Chir. Trans., vol. xxvii.

1004<sup>89</sup>. Dried section of same.

1004<sup>92</sup>. A congenital malformation of the spine. This is caused by the fusion together of the bodies of the third, fourth, and fifth dorsal vertebræ, and the curvature of the new-formed mass. A slight oblique fissure passes across the anterior part, whereby it is seen that the body of the fourth vertebra is wholly destroyed, and the third and fifth partially so, the one more on its left side, and the other more on the right. Upon the posterior view, the three transverse processes are seen to be perfect, those of the lower vertebra retaining their natural position; and respecting those of the two other vertebræ, on the *right* side, the upper process is seen entering its proper body, and the middle one attached to a very small portion of the body of the fourth which remains. On the *left* side, the two upper transverse processes are fused together, and join the remains of the

body of the third vertebra. The three spinous processes are correct in number, and the two lower ones come off from the remains of their respective vertebræ in the usual way, but the upper spine is continuous wholly with the right arch of the third vertebra; the left arch of this bone not meeting its fellow at all (the two being developed separately), but is welded with the spinous process and arch of the vertebra below. There is a synostosis of the left transverse processes of the first and second dorsal vertebræ. The two last cervical vertebræ are also malformed with respect to their arches, those of the lower being separate. Thus, upon looking at these two bones posteriorly, two spinous processes are seen; but the upper is formed not only by the union of its own two arches, but also by the left side of the seventh cervical, leaving the lower spinous process to be formed wholly by the right lateral half which is placed beneath its fellow. The two vertebræ are united by their bodies and arches on the left side. This preparation came from the dissecting room, and is therefore deficient in history; it shows a congenital defect, followed by a reparative process, which probably occurred during fœtal life.

1005. Vertebral column distorted by a lateral curvature in the dorsal region. On the concave side, the bodies are slightly diminished in thickness, and there is superficial ankylosis of four of them. At this place there is ankylosis of the tenth rib.

1006. Vertebral column of an old subject, with slight lateral curvature of the dorsal region, and superficial ankylosis on the concave side.

Presented by T. Foster, Esq.

1006<sup>40</sup>. A spine remarkably distorted by lateral curvature, and by a twisting of the vertebræ, producing a great projection backwards. The bending is in the middle of the dorsal region, and towards the left side, and is so great that the upper dorsal and cervical bones are brought down parallel with the lower dorsal and lumbar. The vertebræ them-

selves are not much altered in shape, being only slightly reduced in size on the concave side of the curve. The three upper dorsal and two lower are unaffected; the remaining seven which form the curve, are firmly united on their concave side. The intervertebral cartilages are seen to be entire on the convex side, except in one place where two bones are wholly ankylosed. If the spine be so placed that the anterior surface of the lumbar vertebræ faces forwards, the convexity of the curve is towards the right side, and the left side of the upper dorsal vertebræ come into view, with their spinous processes in the concavity of the curve. At the termination of the curvature, the upper dorsal are twisted back again, so that their anterior surface, and part of right side come into view, and the spinous processes are hidden. The projection in the back is thus formed by the right sides of the bodies of the dorsal vertebræ. The extremities of the column, *i.e.*, the lumbar and cervical vertebræ, are thus in their normal position as regards their vertical plane, although the upper are so bent downwards, that their front surfaces face each other—in fact, they are turned upside down; while the middle dorsal region constituting the curve, has the vertebræ twisted to the right, exhibiting the spinous processes in the hollow of the concavity. The ribs on the concave side are squeezed together, and ankylosed to the vertebræ and to one another. On the convex side the chest appears almost obliterated, as the two ribs remaining attached pass in front of the spine, and nearly half surround it.

Found nearly opposite the anatomical theatre, Guy's Hospital, while digging through an old burying-ground in Sutton Street.

1006<sup>50</sup>. Section of spine showing excessive angular curvature; the nine lower dorsal and the three upper lumbar vertebræ, are fused together into one mass of bone, which does not measure four inches in length. This is bent at an acute angle. The chest is consequently greatly deformed, though equal on both sides. It appears to have belonged to a young and small subject.

1006<sup>60</sup>. Portion of spine, consisting of the dorsal and three lumbar vertebræ, partly distorted by double lateral curvature. The lower curve with its convexity on the left side, consists of the lower dorsal and lumbar vertebræ; the upper, with the convexity on the right side of the middle and upper dorsal. The front aspects of the cervical and lumbar vertebræ are on the same plane, and face anteriorly, while those of the bones forming the lower curve, look towards the convexity, and the same obtains in the upper curve; the vertebræ being twisted in opposite directions. The ribs are widely separated on one side, and approximated on the other.

1006<sup>63</sup>. Extreme lateral curvature of the dorsal vertebræ, whereby the upper portion is bent downwards parallel with the lower. The whole of this curve is produced by four vertebræ. These are not much altered in shape, being but slightly diminished in thickness on the side of the concavity; on this side their bodies are ankylosed as well as their arches posteriorly, but on the convexity the bones are distinct. The curvature of the spine is towards the right, and the spinous processes being turned to this side within the concavity, the projection of the back must have been formed by the angles of the left ribs. The latter are seen coming off from the concave side closely approximated, and some overhanging one another.

From Dissecting-room.

1006<sup>66</sup>. Chest of an adult male, showing lateral curvature of the spine. This consists of one large curve to the right side, composed of all the dorsal and lumbar vertebræ. The front of the bones is turned towards the right and convexity, while the bodies on the concave side are slightly diminished in thickness, and are united by superficial ankylosis. The chest is much contracted on the right side by the curvature, so that the left forms the great bulk of the thorax; but in the former, the ribs are rounded, and in the latter, flattened. The sternum keeps its position in the median line, its upper and lower border being opposite the superior dorsal and the lumbar verte-

bræ, as is natural; while owing to the curvature of the spine to the right, its middle portion is opposite the angles of the left ribs. The projection of the back is formed by the right transverse processes with the angles of the ribs closely approximated. There is slight ankylosis between five of the ribs.

- 1006<sup>70</sup>. Trunk of an adult, with extreme angular curvature of the dorsal vertebræ. The disease is quite repaired, and has affected the seven lower dorsal, and the two upper lumbar, these being united together into a mass of bone bent at an acute angle; a considerable portion of the bodies of the vertebræ forming the upper and lower ends of this piece, remains perfect. The chest is much distorted, though symmetrical; its diameter from above to below, is much shorter than any of its other measurements, the antero-posterior being nearly double that of the vertical diameter. The lower ribs reach slightly below the crest of the ilium. The vertical plane of the sternum is much anterior to that of the face. The pelvis is very deep.

From Dissecting-Room.

- 1006<sup>75</sup>. Extreme angular curvature of the spine, and fusion of the diseased vertebræ into one solid bony mass.

From Dissecting-Room.

- 1006<sup>80</sup>. Natural skeleton of the trunk of an aged decrepit female with double lateral curvature affecting the lower half of the vertebral column. The lower curvature commences immediately above the sacrum by the inclination of the lumbar vertebræ to the left side, the lower bones facing the convexity on the left; the upper bones face naturally forwards, and then the lower dorsal twist in the opposite direction, producing the superior curvature to the right side, the spinous processes looking towards the concavity in each case. The superior curve commences with the upper lumbar, and ends with the sixth dorsal. Above this the spine is nearly straight, although there is a slight disposition to form a third curve above the other two, the principal one of which is that in the lumbar region. The

chest is capacious, though the right side is encroached upon. The ribs here approach nearer the crest of the ilium. The projection of the back is formed principally by the angles of the lower ribs, which are acutely bent. They are on a plane much posterior to that of the spinous processes. The pelvis is rendered slightly oblique. She was a little person, and said to have borne children.

Case of Sarah B., aged 70.

11. Green Inspec. Book, p. 123.

1006<sup>90</sup>. Vertebral column and pelvis; there are six lumbar vertebræ, which are considerably distorted. They are twisted and partly ankylosed, so as to produce a double curvature. The first three turn with their front aspect towards the right, by which the right transverse processes are hidden from view, while the lower three turn their faces to the left, hiding the left transverse processes. There is thus a slight double curvature produced. The last lumbar is sunk considerably beneath the crest of the ilium on the left side. The dorsal spine is tolerably straight. The pelvis is somewhat distorted, its right oblique diameter being greater than the left, and the antero-posterior diameter being rendered oblique, and directed to the right. The pelvis is also raised on the right side.

1007. Vertebral column distorted by lateral curvature. This is due to the irregular shape of the third, fourth, fifth, and sixth dorsal vertebræ. The two lower of these turn to the left, by their bodies being thinner on the left side, while the two upper are in a corresponding manner thinner on the right side, and so incline in that direction. The column is thus again brought straight, and the cervical and lumbar portions are nearly in a line.

1007<sup>5</sup>. Ankylosis of the fifth and sixth cervical vertebræ, including bodies and arches. There are bony growths on the margins of all the vertebræ, as if the commencement of a general ankylosis.

Presented by Mr. Birkett.

1007<sup>10</sup>. Superficial ankylosis of cervical vertebræ, consisting of a simple layer of bone upon the front aspect of the spine.



This is the form of disease called by some ossification of the ligaments of the spine.

From Dissecting-Room.

1007<sup>20</sup>. Superficial ankylosis of dorsal vertebræ, principally on right side.

From Dissecting-Room.

1007<sup>30</sup>. Superficial ankylosis of spine, principally on right side.

1007<sup>35</sup>. Consists of three preparations. *One*, of the skull and cervical vertebræ, showing ankylosis of the occipital bone to the atlas. Between the atlas and axis the union is not quite perfect : the remaining cervical firmly ankylosed. *Another*, of the dorsal and lumbar vertebræ consolidated into one bony column ; the ankylosis, however, is probably only superficial. *A third*, of the pelvis and thigh bones, showing ankylosis of the hip joints.

1007<sup>40</sup>. Superficial ankylosis of the dorsal vertebræ on the left side.

1007<sup>50</sup>. Superficial ankylosis of right side of spine, with slight curvature.

1007<sup>75</sup>. Superficial ankylosis of right side of spine, with slight curvature.

From Mr. Bryant's collection.

1007<sup>80</sup>. Partial consolidation of the bodies of two vertebræ.

1008<sup>50, 51, 52</sup>. Three preparations showing increased and diminished development of the atlas.

The first (A) has its bony arch remarkably thin and slender. The second (B) is large and stout, and the bony arch remarkably thick.

The third (C) has the portion corresponding to the body of the bone deficient ; it appears to have been supplied by an isolated piece, the consolidation having been defective.

1009. Sacrum with the lower part bent preternaturally forwards. There is also ankylosis between the transverse processes of the last lumbar vertebra and the sacrum, on the left side.

1010. Sacrum, with the lower part projecting preternaturally forwards.

1010<sup>50</sup>. The second cervical vertebra, with the processus dentatus bifid, and the arterial canals incomplete.

1010<sup>75</sup>. Slight ulceration of the odontoid articulation: repaired.

Case of John N., aged 20, who died of renal dropsy, under Dr. Addison's care, in November, 1840. He had had a stiff neck for several years.

17. *Miscell. Insp. Book*, p. 290.

1011. Enlargement, with ulceration of the processus dentatus, which encroached on the spinal canal, and compressed the cord. Also necrosis of the superior articular surface, and partial ankylosis of the remaining cervical vertebræ.

Case of Charles Davis, a black, from Jamaica, who died in the hospital in October, 1825. He was a sailor, and stated that about eighteen months before, he began to feel pain in various parts of the body and limbs, and soon an inability to move them freely. On admission, he walked with difficulty, and his arms were stiff; the head was bent forward, and was nearly immovable; his jaw, too, was nearly fixed. After death, the atlas was found diseased in its articulations with the occipital bone and axis; the processus dentatus was also diseased, so that all the surfaces were ulcerated and scabrous; the process was slightly out of its place. The lower jaw was firmly ankylosed to the skull. (Prep. 1070.)

*Red Insp. Book*, p. 188.

1011<sup>25</sup>. Superficial ankylosis of the lower cervical vertebræ and first dorsal: now separated.

1011<sup>50</sup>. Four specimens of the second and third cervical vertebræ united by ankylosis. In some the bodies only are joined, in others the arches and articular processes.

1012. Enlargement of the processus dentatus, which encroached on the spinal canal and compressed the cord.

Case of William B., aged 20, who died in Guy's Hospital in 1824. He had been suffering a few weeks from pain in the head, and stiffness of the neck. The head was bent forward, and there was complete hemiplegia of the right side. The paralysis increased so as to affect all parts of the body, although sensation remained perfect. He died of erysipelas, seven months after the commencement of the symptoms.

See case in *Bright's Report of Medical Cases*, vol. ii., p. 417.

- 1014<sup>30</sup>. Two specimens of superficial ankylosis of the dorsal vertebræ.  
 No. 1, on the right side, being the concavity of a curved spine.  
 Case of George M., aged 50. Record of Insp., No. 134, 1855.
- No. 2, on the right side of the spine.  
 Case of James S., aged 53. Record of Insp., No. 173, 1855.
- 1014<sup>35</sup>. A portion of the dorsal spine, showing very complete ankylosis between the vertebræ.  
 Case of Charles G., aged 32, under Dr. Addison, November, 1856. At the age of 6 years he suffered from spine disease, accompanied with abscess, and considerable angular curvature. He quite recovered, and continued well until five months before his death, when symptoms of paraplegia came on, and he died at last of renal disease and bed sore. Some fresh inflammatory action had been set up in the neighbourhood of the old disease, and the medulla at that part was found softened.  
 Record of Insp., No. 227, 1856.
- 1014<sup>36</sup>. Dried preparation of same.
1015. Partial ankylosis of dorsal and lumbar vertebræ.
1017. Superficial ankylosis of lumbar vertebræ, with large exostoses growing from the edges of the bodies.
- 1017<sup>25</sup>. Superficial ankylosis of lumbar vertebræ.
- 1017<sup>50</sup>. Three lumbar vertebræ united by ankylosis, attended with considerable redundant deposit of bone. It appears to be the sequel of disease of the bodies of the vertebræ and intervertebral substance.
- 1017<sup>70</sup>. Superficial ankylosis of lumbar vertebræ to one another, and these to the sacrum. The union is by large masses of bone, on either side of the bodies, which might rather be called exostoses. The articular surfaces and arches are free.
1018. Atlas partially destroyed by ulceration, accompanied by abscess, making its way to the anterior part of the vertebral column.

- 1018<sup>15</sup>. Odontoid articulation of the atlas, separated by ulceration. An atlas is placed behind, with the corresponding portion broken off and placed below the diseased one, to show their relation.

Case of Mrs. G., a patient of Mr. J. Babington in 1834. She was a married woman, and had worked hard at washing, and been much exposed to cold. Five years before, she had an attack of pleurisy; but was not aware of having taken mercury, at least was not salivated, and she never had syphilis. Four months previously to her seeking advice she began to find her neck stiff, with a pain at the back of the head. These symptoms increased, until one day, on coughing, she brought from her mouth a piece of bone, and subsequently some smaller fragments. This is the portion of odontoid bone seen in the specimen. She was visited for some months afterwards, when the head was nearly fixed, and there was a discharging ulcer at the back of the pharynx. The patient was last seen in October, 1838, when she was in tolerable health, and was serving at the bar of a public house.

- 1018<sup>35</sup>. Adjoining cervical and dorsal vertebræ. The entire body of the last cervical is necrosed, with the adjoining surfaces of the sixth cervical and first dorsal; the intervertebral cartilages between them being quite destroyed. An abscess had formed on the anterior surface of the bodies communicating with the œsophagus through an opening, a part of which remains.

Case of Wm. S., aged 50, under Dr. Bright, in November, 1835. He had suffered nine months from pains and weakness in the arms, with difficulty of swallowing. The abscess was found to have penetrated to the spinal canal, the membranes were covered with lymph, and the medulla softened. Prep. 1562<sup>72</sup>.

8. *Miscell. Insp. Book*, p. 73.

- 1018<sup>40</sup>. Caries of the third and fourth cervical vertebræ, with the disease communicating with the pharynx, and extending to the medulla.

Case of Jane S., aged 26, under Dr. Gull. She was admitted for disease of the pharynx and difficulty of swallowing, which had been coming on for six months. Afterwards the neck became stiff, and paralysis of the whole body ensued.

*Record of Insp.*, No. 131, 1854.

- 1018<sup>52</sup>. The dorsal vertebræ of a child 18 months old, showing scrofulous disease. The sixth dorsal vertebra is nearly

destroyed, and a curvature produced. In the place of the bone is a cyst, composed of cheesy tuberculous matter; inflammatory lymph surrounded the theca in the spinal canal.

From Mr. Bryant's Collection.

- 1018<sup>70</sup>. Middle part of the vertebral column dried, showing the effects of ulceration in the dorsal vertebræ. All the intervertebral substances seem to have been destroyed, between the third and ninth bones. The body of the fifth is reduced to two small necrotic portions; that of the sixth is isolated and diminished, that of the seventh is more than denuded, and that of the eighth is partially bared. In the medullary canal, the bodies from the fifth to the eighth inclusive, are all seen eroded.

Case of James C., aged 27, under Dr. Bright, in 1837. He had been suffering several years from paraplegia.

11. *Miscell. Insp. Book*, p. 48.

- 1018<sup>77</sup>. Dorsal vertebræ dried, showing partial caries of the ninth and tenth, and destruction of the intervertebral cartilage.

Case of John B., aged 23, under Mr. Morgan, in 1845. There was a large abscess running up the psoas muscle to a large cavity in the chest.

*Miscell. Insp. Book*, vol. xx., p. 169.

- 1018<sup>85</sup>. The dorsal vertebræ of a child, with a large abscess in front, the fourth quite destroyed, and those above and below it carious.

Case of William G., aged 6, who was admitted in 1828, with urgent symptoms of suffocation resembling those of croup. He died in a few hours. The respiratory organs were found quite healthy; but beneath the œsophagus, and opposite the upper dorsal vertebræ, there was a large abscess, communicating with diseased bone.

1. *Miscell. Insp. Book*, p. 13.

1020. Ulceration and partial absorption of the body of the first lumbar vertebra, producing angular curvature, and compression of the spinal cord.

- 1020<sup>15</sup>. Section of dorsal vertebræ, showing a general caries of the bodies, producing a spongy appearance. Caries and

absorption have affected also the processes and heads of the ribs.

1020<sup>35</sup>. Two dorsal vertebræ, the bodies of which are porous, and contain large cavities, from absorption or discharge of dead bone.

1020<sup>40</sup>. Extensive caries of dorsal vertebræ, exposing the medulla.

Presented by Mr. Gossett.

1020<sup>70</sup>. Three last dorsal vertebræ united by their articular processes. The body of the upper one is nearly destroyed, and that of the next entirely so; the lower is partially excavated, but its upper and under surfaces remain entire, making it probable that the intervertebral substance had not participated in the disease.

1021. Section of four dorsal vertebræ. The three upper ankylosed, and in their bodies a large cavity produced by absorption; other parts are also seen to be affected by caries. From the corresponding wet preparation—1292, it would appear as if the disease had commenced in the intervertebral cartilage.

1021<sup>30</sup>. Disease of intervertebral cartilage and adjacent bone.

Case of Edward J., aged 17, under Mr. Birkett. He had suffered pain in the back for two years, and lumbar and psoas abscess a few weeks. The disease was found to be situated between the fifth and sixth dorsal vertebræ, the intervertebral substance being destroyed, and its place occupied by a soft cheesy material. There were a few tubercles in the lungs.

Record of Insp. No. 22. 1857.

1021<sup>40</sup>. Three portions of dried vertebræ, showing destruction of intervertebral substance, and caries of adjacent bone.

Case of Henry L., aged 23, under Dr. Addison. He had been ill several months, with psoas abscess on both sides; but the only disease in the spine was the destruction of cartilage between the last dorsal and first lumbar vertebræ, and caries of adjacent surfaces. The cord was unaffected. No tubercles in any part of the body.

Record of Insp. No. 218. 1856.

1021<sup>50</sup>. A lumbo-dorsal portion of the spine, showing the effects of strumous disease. A considerable number of bones have been destroyed, and a mass has been formed, bent at an acute angle. Softening is in process in this portion. Two intervertebral cartilages, above and below, are partially destroyed. The cord is seen following the curve, and apparently little injured by the disease.

Case of William W., aged 15, under Mr. Morgan in 1833. He had suffered three years from angular curvature, and for a year from psoas abscess. He died worn out by the discharge.

5. *Miscell. Insp. Book*, p. 49.

1022. Dried preparation, showing destruction of the dorsal vertebræ, producing angular curvature. One vertebra entirely destroyed, and those above and below partially. The spinal canal is laid open.

1022<sup>20</sup>. The dorsal portion of the spinal column, with part of the ribs, with considerable curvature forwards, from extensive ulceration of several of the bodies of the vertebræ.

1022<sup>40</sup>. Four lumbar vertebræ, showing ankylosis of the bodies, and a little old sequestrum between the two middle ones, which seem to have lost their intervertebral substance.

1022<sup>60</sup>. Two lumbar vertebræ, united by ankylosis; the body of the upper one greatly reduced by ulceration. There is a small sequestrum lodged in the cavity, the internal surface of which is partially smooth.

1022<sup>80</sup>. Section of two lumbar vertebræ, showing partial destruction of the intervertebral cartilage, and caries of the upper one, with a portion of necrotic bone. The spinal canal is opened.

Case of Thomas P., aged 39, under Dr. Bright in 1831. He had had symptoms of spinal disease for four years; and at last died worn out with psoas abscess on the right side. After death a small psoas abscess was also found on the left side, undergoing cure, as well as a lumbar abscess. The lungs contained tubercular deposit. Drawing, No. 2.

11. *Green Insp. Book*, p. 153.

1022<sup>90</sup>. Three lumbar vertebræ, dried; the middle one of which appears to have been the seat of caries, which occurred with psoas abscess in a female aged 53.

From Mr. Bryant's Collection.

1022<sup>95</sup>. Dried section of three lumbar vertebræ, showing caries of the upper two, with a portion of necrosed bone.

1023. A dried section of several dorsal vertebræ, showing considerable angular curvature, produced by the destruction of the bodies of two vertebræ; and the ankylosis of their remains.

1024<sup>50</sup>. Eight contiguous vertebræ of the back and loins, united by ankylosis, and bent forwards to nearly a right angle, in consequence of the absorption of a great part of the body of the tenth dorsal; that of the twelfth appears to have been excavated by caries. The ossification is superficial, and occupies principally the right side, together with the articular processes of the eighth, ninth, tenth, and eleventh vertebræ.

1024<sup>62</sup>. Extreme angular curvature, from destruction and ankylosis of dorsal vertebræ. The disease extends from the fourth to the eighth, the upper and lower being only partially destroyed. One solid mass is formed from the remains of these bones, which is bent at a right angle, and to it are ankylosed the heads of the fifth, sixth, seventh, and eighth ribs.

From Mr. Howship's Collection.

1024<sup>75</sup>. Dried section of some dorsal and lumbar vertebræ, showing angular curvature of the spine. Six are completely consolidated, producing a mass of bone, bent at an acute angle; these appear to be the four lower dorsal, and two upper lumbar.

Case of Thomas V., aged 39, under Dr. Addison in 1839; died of heart disease.

16 Miscell. Insp. Book, p. 73.

1024<sup>76</sup>. Counterpart of the above, as a wet preparation, showing



spinal canal, with the cord and cauda equina adapted to the curvature.

- 1024<sup>78</sup>. Portions of lumbar vertebræ and intervertebral substance passed from an abscess, through the anterior abdominal walls, from a child who afterwards left the hospital well.

Case of Mr. Cock.

- 1024<sup>85</sup>. Angular curvature of spine, produced by destruction of five upper dorsal vertebræ. Their place is occupied in part only by bone, a quantity of dense fibre-tissue holding the remnants together; the mass thus produced being bent at an acute angle; in this is some dead inflammatory matter. The last cervical is partially destroyed, and the sixth, seventh, and eighth dorsal are also affected.

Thomas C., aged 23, under Dr. Barlow in 1854, and died of bronchitis and dropsy. Previous health good.

Record of Insp., No. 39. 1854.

- 1024<sup>86</sup>. Dried preparation of same.

1026. Section of lower dorsal and upper lumbar vertebræ, showing disease of transverse and spinous processes, producing lumbar abscess, the bodies remaining entire. The two upper lumbar are especially affected, and the disease extends into the canal, some inflammatory deposit being seen within it. At the back is seen the lumbar abscess, the lower rib passing along its upper margin.

- 1026<sup>50</sup>. The last dorsal and first two lumbar vertebræ, affected with caries and destruction of intervertebral cartilage, producing lateral curvature. It was connected with a large abscess. The left kidney was altered in shape by compression. Prep. 2022<sup>70</sup>.

Case of Abraham H., aged 25, under Dr. Bright in 1855. He died of pulmonary disease.

6. Green Insp. Book, p. 49.

- 1026<sup>52</sup>. Strumous caries of the dorsal vertebræ. The bodies of the eighth and ninth destroyed, and the canal open at this part. The three above and the one below these also

partially affected. The strumous or inflammatory material is upon the dura mater, and a distinct nodule, the size of a marble, is seen pressing upon the medulla.

Case of Sarah B., aged 3, admitted under Mr. Callaway, junr. She had been suddenly seized with symptoms of suffocation while eating, and tracheotomy was accordingly performed, but the child soon died. A slight angular curvature was observed in the dorsal region. On post-mortem examination, a large abscess was found behind the œsophagus on the anterior part of the spine, filled with a curdy strumous matter. This communicated with the diseased vertebræ, as seen in the preparation.

Record of Insp. No. 62, 1855, and Guy's H. Rep. 1855, p. 190.

- 1026<sup>55</sup>. Angular curvature of spine from destruction of the bodies of several of the dorsal vertebræ. Their place is not taken, as is usual, by a mass of bone, but their remains are held together by tough fibre tissue.

Case of Frederick W., aged 16, under Dr. Addison. He had suffered from spine disease since he was a year old, but had only been seriously ill for three months, dying at last of bronchitis and emphysema.

Drawing 1<sup>86</sup>. Record of Insp., No. 55. 1855.

- 1026<sup>60</sup>. Section of dorsal spine, showing destruction of the sixth vertebra, and slight disease of the bones above and below, so that the healthy vertebræ approximate, and an angular curvature is produced. The disease is seen to have reached the cord, and firm inflammatory deposit covers the theca for some distance.

Case of John H., aged 43, under Dr. Addison. He was a porter, and stated that three years before he had fever, and had not been well since. He had suffered from pain in the back for fifteen months. On admission, he had angular curvature, and slight paraplegia. The latter increased until it was perfect, and finally the respiration became involved.

Record of Insp., No. 157. 1857.

1027. Partial destruction of the two lower lumbar vertebræ, but especially of the fifth, and ankylosis between them. There is also a slight growth of new bone on the sacrum. The patient had psoas abscess. The upper piece of the sacrum has a remarkable formation, having on its back part, arches and processes like a lumbar vertebra, but firmly consoli-

dated to the main portion. It has, indeed, almost the appearance of the last lumbar vertebra consolidated to the sacrum. The sacrum is thus composed of six pieces.

1027<sup>35</sup>. Last lumbar vertebra and sacrum, showing disease of the intervertebral cartilage.

1027<sup>40</sup>. Section of the fifth, sixth, seventh, and eighth dorsal vertebræ, showing commencing degeneration of the intervertebral substance, or deposit of strumous matter. The spinal cord was softened, and the arachnoid covered with bony plates.

Case of Elizabeth G., aged 33, under Dr. Barlow. Two months before her death she was suddenly seized with weakness of the legs, and rapidly became paraplegic. She died of pyelitis and bed sore. A large part of the dorsal cord was found softened. The inner side of the membranes was healthy, but on the external surface opposite the fifth intervertebral substance, there was soft inflammatory matter. The other intervertebral cartilages also contained a small amount of the same material.

Drawing of Cord, 24<sup>91</sup>. Record of Insp., No. 48. 1855.

Guy's H. Rep. for 1856, p. 197.

1027<sup>70</sup>. Dorsal portion of the vertebral column, showing carcinomatous masses on each side of it, and a continuous medullary deposit occupying much of the spinal canal, which is laid open.

Case of James A., aged 37, under Mr. Key in 1835. He had had a malignant testis removed eighteen months before, and which had been growing five years. Now the disease had returned, and was of enormous size, with similar growths in groin and abdomen. The last few days of his life he became paraplegic. After death cancer was found also in the lungs and liver, and a large mass which grew from the spine, entered the canal on each side, as seen in the specimen. The sheath of the medulla was also covered, see preparation 1562<sup>90</sup>.

7. Misc. Insp. Book, p. 100.

1028. Several dorsal vertebræ affected with carcinoma; the disease apparently beginning behind, has taken the place of the bodies of the bones, leaving the cartilages almost unaffected. The membranes are implicated as well as the spinal cord.

Case of John F., aged 30, under Dr. Cholmeley in 1821. He was admitted for pains and weakness in the legs, but soon became paraplegic, and he died with a bed sore. Cancerous growths were found in the bones of the cranium, and various other parts of the body.

Cancer of sternum, see prep. 1042; lungs, 1782; pericardium, 1449; axillary glands, 1844; bronchial glands, 1548; liver, 1927; spleen, 2012.

C. A. Key's Record of Inspections.

1028<sup>50</sup>. Carcinomatous tubera excavating the bodies of the dorsal vertebræ. A similar growth is seen protruding from the lesser trochanter in prep. 1160<sup>54</sup>.

From Dissecting-Room.

1028<sup>60</sup>. Section of some of bodies of dorsal vertebræ, showing their almost total destruction by carcinomatous disease. The cartilages are unaffected, and have fallen together.

Case of Sarah D., aged 58, under Dr. Hughes. She had been ailing a year, and had had hematuria three months, and for two months paraplegia. A large mass of carcinomatous lumbar glands was found involving the spine, and the cord within was softened.

Prep. Cancer of kidney, No. 2056<sup>50</sup>. Record of Insp., No. 11. 1858.

1029<sup>18</sup>. The fourth lumbar vertebra almost destroyed by carcinomatous disease.

Case of Lucy R., aged 38, under Dr. Addison in 1845. She died of carcinoma of the uterus, and cancer was found also in the spine and the ribs.

20. Misc. Insp. Book, p. 100.

1029<sup>20</sup>. A section of lumbar vertebræ, showing the deposition of carcinomatous matter in different stages, the body of the fourth having been almost entirely absorbed. The canal is somewhat encroached upon, producing pressure on the medulla.

Drawing, No. 2<sup>4</sup>.

Case of Richard B., aged 41, under Dr. Addison in 1837. The lungs also contained cancer.

11. Misc. Insp. Book, p. 139.

1029<sup>25</sup>. Deposits of cancer in some of the dorsal and lumbar vertebræ in various stages. The eleventh dorsal is reduced almost to the dimension of an intervertebral substance,

and from it projects a large cancerous tumour. An angular curvature has been produced.

Case of Robert W., aged 28, under Dr. Addison in 1839. The lymphatic glands were affected with carcinoma, as also the liver, and the latter organ contained hydatids.

16. Misc. Insp. Book, p. 82.

- 1029<sup>30</sup>. Some of the lumbar vertebræ which formed part of a wall of a hydatid cavity. They are partially absorbed by it, and small parasites are seen adhering to the denuded bone.

Case of James S., aged 16, under Mr. Morgan in 1839. Hydatids were found in the peritoneum and liver, and the vertebral column was laid bare by them.

16. Misc. Insp. Book, p. 149.

1030. Dislocation forwards of the sixth cervical vertebra. It has slipped off the articular surface of the vertebra below on the left side, and the same has occurred on the right side, with the articular process slightly broken. There is also a partial fracture of the body at its inferior part. The bone projects forward about half an inch.

- 1030<sup>40</sup>. Cervical portion of the spinal column with the medulla exposed, and a part of the œsophagus. There is probably fracture, and some apparent ulceration of the vertebræ, communicating by sinus with the œsophagus. The medulla is softened.

Case of Samuel N., under Mr. Morgan in 1831, on account of a severe blow he had received on the throat. He survived twenty-four days.

- 1030<sup>50</sup>. Section of a portion of the cervical and dorsal spine, showing the articulating cartilage separated between two of the vertebræ (fifth and sixth cervical), with a small fracture at the upper and anterior edge of one of their bodies.

1031. Fracture and dislocation of two cervical vertebræ. The sixth is broken through the arches on both sides, allowing the body to slip off the articular processes, and to be thrown forwards; the arches of the one above are also

fractured at the corresponding places, but the body is only slightly displaced.

Case of Edward P., aged 25, in the year 1807. He was a sailor, and fell into the hold of his ship. The arms were partly paralysed, and all below completely so. The patient survived five days. Catheterism was employed. The bladder was found inflamed, and the kidney contained blood.

Old Museum Book, No. 62.

1032. Fracture of the body of the sixth cervical vertebra, with dislocation and much compression of the cord.

Case of Daniel K., under Mr. Forster in 1823. He was carrying a box of oranges on his head, when he fell with his load, and it crushed his head against the curb-stone. He died in twenty-four hours with complete paralysis of all parts below the injury.

C. A. Key's Record of Inspections.

1033. Fracture and dislocation of the fifth cervical vertebra. There is great displacement of this bone backwards, with pressure on the cord.

The patient is said to have survived sixteen weeks and four days.

Presented by Mr. Greenwood.

- 1034<sup>35</sup>. Dorsal vertebræ, with fracture and great displacement between the third and fourth. The upper one is completely separated, and lies in front of the fourth, reaching as low as the intervertebral cartilage of the fourth and fifth; the continuity of the spinal canal is thus entirely destroyed. The anterior and posterior ligaments are for a considerable distance stripped off the bones, but not torn through.

Case of Thomas B., a man of middle age, in the year 1827, fell from a ladder with a hod on his shoulders. He survived three weeks, dying with paraplegia, and the consequent bed sore and cystitis. The spinal canal was obliterated, and the cord completely severed.

4. Green Insp. Book, p. 152.

- 1034<sup>40</sup>. Oblique fracture of the third and fourth dorsal vertebræ. Both bodies are broken and separated, and a portion of the upper one projects into the spinal canal. The head of the fourth rib is displaced forwards. A dried preparation.

1034<sup>70</sup>. Dried section of spine, showing oblique fracture through the body of one of the dorsal vertebræ. The spinous processes of two of the vertebræ above are fractured (a portion of one being lost), and removed from their natural position. The lower one is united to the arch of the bone, above the spot from where it has been broken, and the upper is completely separated, and is united to the broken one below, and partly to the spinous process of the vertebra above it, being altogether unconnected with the root of the process where it originally grew. The arches of some of the vertebræ above are seen to be fissured, as well as the body of the second dorsal.

The patient must have survived at least several weeks after the accident, seeing the amount of repair which has taken place. Occurred about the year 1847.

Drawing, 2<sup>12</sup>.

1034<sup>84</sup>. A dried portion of spine, with oblique fracture of the twelfth dorsal vertebra, and great displacement. The upper portion projects forward, and to the left side, while the lower projects backwards, and to the right. A partial ankylosis has taken place between the upper portion and the left side of the vertebra below, and also between the lower portion and the right side of the vertebra above. The canal is much encroached upon by the projection of the lower fragment into it.

Case of James L., aged 34, under Mr. Key in 1838. While elevating a heavy weight, it fell on his back; paraplegia immediately followed. Extension was made, and the bones partly replaced. He lived two months, and died from cystitis, pyelitis, and bed sore. The spinal cord had suffered pressure at commencement of cauda equina, but the dura mater was not injured. A rupture of the coats of the aorta had taken place just below the arch. See prep. 1454<sup>64</sup>.

14. Misc. Insp. Book, p. 51.

1035. Section of the lumbar spine, showing fracture of the body of the first vertebra, obliquely from before to behind, and more towards the anterior part. There is some displacement forward of the upper part, and displacement of the lower into the spinal canal.

Case of J. C., under Mr. Key in 1826. He stated on admission that,

a month before, he fell while carrying a piece of timber, and was bent double by it. He was able to walk some distance afterwards, but soon his legs became weak. He could move them when admitted, but they gradually became paralysed, and thus he died. There was found sup-  
puration of the kidney, and ulceration of the bladder opening into the rectum. Prep. 2095.

1. Green Insp. Book, p. 17.

1035<sup>25</sup>. Section of lower part of vertebral canal, showing oblique fracture of anterior part of the body of the first lumbar vertebra. The lower portion is thrown backwards into the canal, and firmly compresses the spinal marrow.

Case of John A., aged 17, under Mr. Key in 1836.

1035<sup>50</sup>. Three lumbar vertebræ, one of which is fractured, and partly crushed. The superior oblique process on either side is nearly detached. There is no appearance of union or reparative change. A dry preparation.

1036. Fracture of the tenth dorsal vertebra. The body partially absorbed, but projects backwards into the spinal canal, and presses upon the cord.

Case of James H., aged 21, under Mr. Key in 1827. While at work in the docks, a load of earth fell upon him. Considerable displacement of the bones was found, but this was rectified by extension. He had perfect paraplegia, and lived four weeks and three days after the accident. Catheterism was daily employed. There was found after death, peritonitis, pericystitis, and ulceration of the bladder. Prep. 2096.

4. Green Insp. Book, p. 55.

1037. One of the middle lumbar vertebræ, of extreme thinness, supposed to have been crushed. Around it is a mass of carcinomatous disease, and this has protruded into the canal.

Case of Frederick H., aged 20, under Mr. B. Cooper in 1827. While carrying a heavy weight a year before, he slipped and injured his back. He was unable to walk afterwards, but recovered the use of his limbs in about three weeks. He however did not altogether regain his strength, and in five months afterwards the weakness began to increase, and he had difficulty in micturition. When admitted he had complete paraplegia. Catheterism was daily employed, and the back was discovered to be growing out. After death, the bladder was found to be ulcerated. Prep. 2093.

1037<sup>5</sup>. A section, the counterpart of the preceding.



## STERNUM.

- 1038<sup>20</sup>. Episternal bones, being two small bones developed upon the superior edge of the sternum.

From the same patient whence the dislocated sternum was taken, Prep. 1043<sup>90</sup>.

See remarks on subject by Mr. T. W. King, in *Guy's Hosp. Rep.*, Series 1, vol. vii., p. 227.

- 1038<sup>35</sup>. Sternum irregularly and imperfectly formed.

From Dissecting-Room.

- 1038<sup>70</sup>. A deformed sternum. A broad short bone ankylosed, and very convex on the front surface.

Case of William M., aged 30, under Mr. Cooper in 1837. He died of pleuro-pneumonia.

10. Misc. Insp. Book, p. 120.

- 1038<sup>82</sup>. Upper bone of the sternum with ankylosis between it and the left rib-cartilage.

- 1038<sup>83</sup>. Two bones of the sternum united. The upper one presents also the left first rib-cartilage ossified, and consolidated with it.

Case of Joshua H., aged 45, a native of the Ladrone islands, who died under Dr. Cholmeley's care in 1829, of phthisis. See also from same case, prep. of scalp, 421<sup>50</sup>; stomach, 709<sup>70</sup>; of phthisical lungs, 1737<sup>90</sup>, 1739<sup>32</sup>, 1743<sup>50</sup>; and of skin, 1641<sup>16</sup>.

9. Green Insp. Book, p. 85.

- 1038<sup>85</sup>. The first bone of the sternum, to which are united two large ossified first rib-cartilages.

- 1038<sup>90</sup>. A similar specimen. (In the 1st edition of the Catalogue, thought to be the ankylosed clavicle.)

1039. Ensiform cartilage ossified, with a deficiency in the middle, producing a foramen.

- 1039<sup>50</sup>. Ensiform cartilage with a foramen, through which protruded a portion of peritoneum and fat.

Case of James C., aged 55, who was under Dr. Back in 1827, and died of renal disease and dropsy.

5. Green Insp. Book, p. 51.

1040. Bifid ensiform cartilage.
1041. Bifid ensiform cartilage.
- 1041<sup>50</sup>. Sternum with the ensiform cartilage ossified and bifid, with a considerable foramen in one of the divisions.
- 1041<sup>75</sup>. A circumscribed abscess in the pleura connected with disease of the rib-cartilage, and of the articulation between the two sternal bones.
1042. Carcinomatous tumor in the cancellated structure of the sternum. From same case is furnished prep. 1028.
- 1042<sup>50</sup>. Carcinomatous tumor attached to the sternum, which is implicated in the disease.
1043. Fracture of the second bone of the sternum, with displacement.
- 1043<sup>15</sup>. Fracture of the first bone of the sternum, transversely and obliquely.

Case of William W., aged 56, under Mr. Morgan in 1840. He fell from a scaffold and fractured his spine, as well as receiving several other injuries. Compound dislocation of wrist, see cast, No. 19.

17. Misc. Insp. Book, p. 225.

- 1043<sup>30</sup>. Sternum dislocated; the second bone being thrown by violence forwards on the upper.

Case of Charles B., aged 25, under Mr. B. Cooper in 1837. He fractured the vertebræ, and lived a fortnight afterwards, dying of cystitis, &c., the organs within the body being uninjured. See prep. 1038<sup>20</sup>.

10. Misc. Insp. Book, p. 115.

- 1043<sup>40</sup>. Fracture of the second bone of the sternum, transversely and obliquely.

Case of John H., aged 40, who died under Mr. Morgan's care in 1840, for fracture of skull.

17. Misc. Insp. Book, p. 170.

## OS HYOIDES.

1043<sup>47</sup>. Stylo-hyoid ligament ossified.

1043<sup>50</sup>. Stylo-hyoid ligament ossified.

## RIBS.

1044. Congenital deficiency of the greater part of the third rib.

Case of John W., aged 15, who died of phthisis under Dr. Cholmeley in 1827. During life the left side of the chest was observed to have a depression, and at this part there was no appearance of rib or cartilage. This space moved with every beat of the heart. A small portion of the rib as far as the angle was found attached to the spine, as well as a piece of cartilage to the sternum; but all the intermediate portion was deficient, leaving merely a membranous wall between second and fourth rib, the pectoral muscle being also deficient at this spot.

See cast of chest, No. 54. Prep. of lung and pleura, 1771, and of thickened and strumous omentum, 2456.

4. Green Insp. Book, p. 120.

1044<sup>40</sup>. Cartilage of one of the false ribs, with a cavity in its interior, which was filled with a glairy fluid resembling synovia.

1044<sup>50</sup>. Several ribs remarkable for their extreme tenuity.

1044<sup>62</sup>. Thorax affected with mollities ossium, the sides being flattened, and ribs bent, and the spine and sternum rendered convex. The upper piece bent inwards, and the lower outwards. Several of the ribs have sustained fractures, and become more or less repaired.

Case of Sarah Ann S., aged 83, who died in 1842, having been an inmate of the lunatic house for fifty-eight years. The deformity commenced about two years before her death, when she began to be too feeble to rise from her bed. She was then daily taken out and placed in a chair, and at the same time she began to grow double, and the deformity gradually increased.

18. Misc. Insp. Book, p. 217.

1044<sup>75</sup>. Angles of four left ribs absorbed from the pressure of an aneurism.

Case of Richard T., aged 38, under Dr. Addison in 1838. He was a policeman, and had suffered from symptoms of aneurism for three years,

which he attributed to a sudden exertion and sprain of the back. Finally, the tumour was felt pulsating in the back, and he had complete paraplegia.

See prep. of spine partly absorbed by the aneurism, 1004<sup>85</sup>.

13. Misc. Insp. Book, p. 163.

1044<sup>87</sup>. Portions of four ribs ulcerated, and absorbed by an empyema, which has made its way through the chest, and formed a sac externally.

1045. Several examples of supernumerary cervical ribs. Some of these form one mass of bone with the first rib. A broad flat piece is thus produced, with two articulating surfaces at its end.

1045<sup>70</sup>. Several dissimilar supernumerary ribs, some of which are probably lumbar.

1046. Several specimens of ribs, bifid at their anterior extremities.

1046<sup>55</sup>. Anterior bifurcation of third right rib.

Case of James C., aged 27, who died of carcinomatous disease, under Dr. Addison in 1845. One of the kidneys was misplaced.

New Vol. i., p. 36.

1047. Ankylosis of ribs to vertebræ.

1048. Ankylosis of ribs to vertebræ.

1049. Exfoliated portion of a rib, making an ulcerated opening into the lung.

Case of James M., aged 5, under Sir A. Cooper in 1805, for diseased knee-joint and psoas abscess.

Old Museum Book, p. 169.

1049<sup>50</sup>. A rib affected with syphilitic necrosis.

From Brooke's Collection.

1050. A rib affected with carcinomatous disease.

Case of Elizabeth W., aged 40, under Mr. Morgan in 1827, for carcinoma of the breast. The liver, kidney, and other organs were found subject of the same disease.

2. Green Insp. Book, p. 57.

1050<sup>35</sup>. Carcinomatous tumour in rib.

1050<sup>49</sup>. Carcinoma of the ribs.

Case of William G., aged 37, under Dr. Barlow. He was a weaver, and stated that fourteen months before, he felt a pain in the left side of the chest, and two months afterwards a tumour appeared. This increased until the whole of that side of the chest was occupied by it. The cancer was of the scirrhus variety, and appeared to have commenced externally, or in the ribs, and extended from the third to the tenth, the lungs being only superficially and secondarily affected. The middle ribs were destroyed; the upper ones are seen in the preparation. The suprarenal capsules were also the subject of carcinoma. See prep. 2022<sup>10</sup>, and drawing 353<sup>12</sup>.

Record of Insp., No. 14. 1855.

1050<sup>85</sup>. Three ribs fractured in four places, showing the amount of repair in twenty-four days, the process of union in some places being considerably advanced. The callus is seen thrown out in the intercostal spaces.

Case of George B., aged 42, who was under Mr. Morgan's care in 1829, for serious injuries received from the kick of a horse; the ribs being fractured, and the skull laid bare. The patient left the hospital convalescent in three weeks, but became intoxicated, and returned shortly to die. There was caries of the frontal bone, prep. 1076<sup>35</sup>; inflammation of dura mater, prep. 1592<sup>14</sup>; lobular pneumonia, prep. 1725<sup>72</sup>; portion of liver injured by fractured rib, prep. 1947<sup>56</sup>; and drawing of same, 348.

8. Green Insp. Book, p. 36.

1051. Dried preparation of a fractured rib, with which there coexisted an external cyst containing air.

Mr. King from Paris.

1051<sup>25</sup>. Three right ribs broken forty-eight days, with tardy reparation.

Case of Martin G., aged 44, under Mr. B. Cooper in 1841. He had phthisis when he met with the accident, and died seven weeks afterwards.

8. Misc. Insp. Book, p. 120.

1051<sup>36</sup>. Fractured rib united, but separated again in removal.

1051<sup>50</sup>. A right upper rib in progress of reparation, thirty-one days after fracture.

Case of William P., aged 55, under Mr. Key in 1840, for several severe injuries. See the fractured femur, prep. 1197<sup>40</sup>.

17. Misc. Insp. Book, p. 303.

1051<sup>90</sup>. Three specimens of fractured ribs united.

From Dissecting-Room.

1052. Fractured rib united.

1052<sup>5</sup>. Fractured rib united.

1053. Three ribs fractured and united.

1054. Three ribs fractured near the middle. The reparation attended with ankylosis to one another.

1054<sup>20</sup>. Two fractured ribs united, and attended with ankylosis, or ossification, uniting them to each other.

1054<sup>30</sup>. Three fractured ribs united, and attended with ankylosis.

#### CRANIUM.

1055. Longitudinal section of the skull of a brainless infant; the calvaria wanting.

Presented by Mr. Dodd.

1055<sup>25</sup>. Cranium of a child, in which there is a very considerable deficiency of the right parietal bone, as well as some deficiency of the left, by which a large irregular opening is formed at its summit. The child had congenital hernia cerebri, which produced a tumor almost as large as the skull; and one of the lateral ventricles with an indurated portion of plexus choroides extended into it. The membranes of the brain of this part were much thickened. The child died when nearly two years of age.

See Prep. 1563<sup>50</sup>, the sac of the tumor; and cast 56.

1055<sup>50</sup>. A calvaria rather thick and heavy, and inclined considerably to the right side. The occipital bone is enlarged, and forms an arched prominence towards the lambdoidal suture. There is similar thickening and prominence of the parietal bones adjoining and along the sides of the sagittal suture posteriorly. The sutures are thus sunken, and the bone projects on either side.

- 1055<sup>75</sup>. Calvaria, in which there is a remarkable thinness of the bones, especially the ossa parietalia, which render them light and porous. This has produced a longitudinal depression on each side, which is increased in depth by a high ridge of bone running backwards from both temples.
1056. Calvaria of a hydrocephalic child, showing incomplete ossification. It is as large or larger than that of an adult; a considerable part of the vertex and front of the head is formed merely by membrane.
1057. Skull of a hydrocephalic child, the size of an adult's. The bones in front appear to have expanded more than those behind; thus the frontal forms all the anterior portion of the skull, and the fontanelle is at the vertex, which forms a large space, and is wholly membranous. The parietal form the principal part of the back of the skull, the occipital being altogether at the base. The posterior fontanelle is quite closed, and the sutures are firm. The frontal bone is incompletely ossified, leaving numerous insulated spots wholly membranous. The roof of the orbit has an oblique direction, and inclines more vertically than horizontally.

Case of a girl 2 years and 2 months old. The head gradually increased in size from the age of five months, after an attack of measles. The ventricles formed one large cavity in the interior of the brain, and contained three pints of serum. The cerebral hemispheres were so expanded that fluctuation could be felt through the skull during life.

Presented by Dr. Dunlap. 1824.

- 1057<sup>30</sup>. Head of an infant affected with hydrocephalus. Ossification incomplete, but commencing in numerous irregular separate patches in the fontanelles, particularly in the posterior.
- 1057<sup>40</sup>. Extensive mesian ridge on frontal part of calvaria internally; appearing like an extension upwards, as high as the coronal suture, of the crista galli. It measures three inches in length, and half an inch in depth.

Case of Sophia S., aged 27, who died of fever under Dr. Back in 1838.

14. Misc. Insp. Book, p. 26.

1057<sup>50</sup>. Skull of a hydrocephalic child. It is of large size, and very deficient in symmetry; ossification is completed, except at a very small spot at the anterior fontanelle. There are several supernumerary bones, the most remarkable of which is a large one on the left additamentum suturæ lambdoidalis; also a plate above the squamous portion of the left temporal bone. The fangs of the teeth are exposed on the left side, to show the second dentition.

1057<sup>75</sup>. Calvaria of a little girl affected with hydrocephalus; the sutures separated.

1059. Skull of a flat-head Indian from the Colombia river, remarkable for the number of its wormian bones, occurring not only in the lambdoidal, but also in the sagittal and coronal sutures.

Presented by B. Harrison, Esq.

1060. European skull, apparently of a female, having several wormian bones.

1060<sup>50</sup>. Skull of a new-born child, with a portion of the occiput isolated.

1061. European skull, with a small supernumerary plate to the squamous portion of the right temporal bone.

1061<sup>35</sup>. A misshapen cranium, with a large os triquetrum, including the upper part of the occipital bone; in fact, another suture passes across from the lateral angles, just above the tuberosity, and divides this bone into two.

1061<sup>70</sup>. Skull and lower jaw. There is a large diamond-shaped wormian bone at the angle of the lambdoidal suture, with small supernumerary plates to the squamous portions of the temporal bones.

1062. Skull, in which the right and left portions of the os frontis have continued separate, forming a frontal suture.

1062<sup>50</sup>. Skull presenting a considerable deficiency in symmetry, exciting the idea of its having been subjected to a force



obliquely pressing the upper part to the right, and the lower to the left side.

1063. Skull in which the original division of the os frontis persists, producing a frontal suture.
1064. Skull in which the different bones are more than usually united, the sutures being obliterated. There is some appearance of necrosis at the protuberance of the os occipitis.
1065. Skull of a man who had suffered from chronic hydrocephalus. It is much larger than natural, and is broad, partaking of the general character of the hydrocephalic cranium. The sutures are nearly obliterated, and the bone itself is thickened.

The man was of middle age, and in tolerable possession of his powers of mind and body. There was not much fluid in the ventricles, and the dura mater was partly ossified. See prep. 1594.

From dissecting-room at St. Thomas'.

See case of Joseph S. in Dr. Bright's published Reports.

1066. Calvaria of a female, externally presenting a good frontal development, but which admitted little space for the anterior lobes of the brain, from the great but partial thickness of the bone; the two tables of bone distinct, but unusually separated.

Case of Emma J., aged 55, under Mr. Key in 1826 for ulcer of the leg. While in hospital she died of apoplexy.

Red Insp. Book, p. 217.

- 1066<sup>25</sup>. Considerable hypertrophy of the cranium, the whole of the bones being increased in thickness.
- 1066<sup>35</sup>. Calvaria much hypertrophied, and bone dense.
- 1066<sup>70</sup>. Calvaria hypertrophied.
1067. Calvaria and base of a skull in which the bone is throughout of unusual thickness; it is spongy, and not presenting the distinction into tables and diploe. The impressions of the vessels of the dura mater are very strongly marked.

1068. Fragment of a cranium very much thickened and spongy.

1068<sup>35</sup>. Thin section of cranium much hypertrophied, being three quarters of an inch in thickness. There is no appearance of diploe, and the bone is less dense than usual.

From a female, aged 72, who always had a large head; during the last fifteen years had weak intellect.

Presented by Dr. Burns. 2. Misc. Insp. Book, p. 162.

1068<sup>36</sup>. A corresponding thin section—a dry preparation.

1069. Several of the bones of the head of a child, somewhat thickened, and remarkably spongy, apparently an early stage of the affection seen in the preceding specimens; supposed to have been the effect of scrofula.

From the Dissecting-Room.

1069<sup>50</sup>. Spongy thickening of sphenoid, and part of superior maxillary bones.

1069<sup>55</sup>. Great hypertrophy of cranium, the calvaria measuring nearly an inch in thickness in some places. It is very heavy, but at the same time is rather spongy and of a uniform character throughout, and somewhat resembling dried mortar, all appearance of tables and diploe being lost. The other bones were similarly affected; see femur, tibia, and fibula.

From Dissecting-Room, March, 1851. Brought from workhouse, and no history. A male about 45 years.

1070. Skull of a Black from Jamaica; the articulation of the lower jaw firmly ankylosed.

For history, see prep. of cervical vertebræ, No. 1011.

1071. Base of skull, with atlas firmly ankylosed to it. The union is so perfect that it appears almost a part of the occipital bone; this is particularly the case with the posterior arch of the vertebra, which forms a perfectly smooth surface with the cranium above. There is no remnant of disease about it.

Presented by Mr. C. A. Key.

1071<sup>35</sup>. Basis of the skull, with the atlas united by ankylosis to the os occipitis. The atlas has been carried slightly forward, so that the anterior arch rests upon the basilar process to which it is ankylosed. The articular surfaces are also firmly united, as well as the posterior arch of the right side, while that of the left side is still free. The spinous process has been destroyed by ulceration, leaving the arch open at this point.

1071<sup>70</sup>. Skull in which the atlas and vertebra dentata are ankylosed together, and united to the skull. The atlas is turned so as to face towards the right side; that is, the right side is thrown backward, and the left forward, by which the left articular process points to the condyle of the lower jaw, and the right in a direction considerably behind this. The anterior arch and articulating processes are ankylosed, but the posterior is free. The axis which is united to the atlas is twisted in the contrary direction, being turned to the left side; and its spinous process points backward to the right, and crosses the right arch of the atlas. There is firm union between the articular surfaces of these two bones; the side of the odontoid process is also ankylosed to the side of its articular surface, but the posterior arches are free. The vertebral foramina, instead of being opposite each other, are three quarters of an inch apart, the lower being in front of the upper on the right side, and behind on the left side.

1072. Ankylosis between occiput and atlas, and also between the second and third cervical vertebræ. The new bone existing at the points of union indicates the inflammatory process which produced the ankylosis. Although the atlas and axis are not united, the joints appear to have been destroyed, and the articular surfaces are roughened; the odontoid process in the same way; and the parts with which it is in contact show the existence of caries.

1072<sup>25</sup>. Calvaria having the bone thin and the interior scabrous.

Case of Richard M., aged 24, under Dr. Addison in 1841, and who died of hydrocephalus and scrofulous tubercles in the brain.

1072<sup>50</sup>. Spiculæ of bone, and small warty eminences on frontal part of calvaria.

Case of Edward L., aged 40, under Mr. Morgan in 1838. He received severe injuries to the chest nine months before, as well as to the foot; the latter was amputated, and he died soon afterwards. Besides the exostoses on the skull, the diaphragm was found ruptured, and the stomach protruding through it: see prep. 2506<sup>90</sup>; also fractured ribs, to the fifth of which some omentum was adherent: see prep. 1762<sup>44</sup>; and lung 1755<sup>64</sup>.

13. Misc. Insp. Book, p. 157.

1072<sup>55</sup>. Calvaria having its whole internal surface scabrous or covered with bony granulations.

Case of William S., aged 40, under Dr. Barlow. He died of a cyst and softening of the brain of eight months' duration. See prep. 1566<sup>20</sup>, and drawing 57<sup>61</sup>.

Record of Insp., No. 71. 1855.

1072<sup>60</sup>. Large protuberance or exostosis projecting externally from left side of frontal bone.

1072<sup>65</sup>. Calvaria covered with small bony deposits, and supposed to represent the condition styled "puerperal osteophyte" by Rokitansky. The whole internal surface is covered with a number of ossific granulations, evidently of new formation, and are apparent more particularly along the course of the sutures.

Case of Ann L., aged 21, who was under Dr. Lever. She died of peritonitis, after delivery of a seven months' child.

Record of Insp., No. 95. 1857.

1073. Calvaria in which, at the anterior part, the inner table is much thickened, and presents numerous smooth tuberos exostoses, having the hardness and whiteness of ivory. This state of the inner table is almost confined to the os frontis.

Case of Jane W., aged 30, who died in 1830, having been an inmate of the lunatic house of the hospital for several years, and during the last two years had had epileptic fits. The brain weighed only 2 lbs.

4. Green Insp. Book, p. 161.

1073<sup>50</sup>. A circular portion of trephined bone, removed from the upper and back part of the skull of a man who had long

suffered from cerebral symptoms, owing to an injury. The bone is of unequal thickness, and the inner surface is covered with osseous granulations.

Case of Pierre R., aged 36, a Frenchman, in the hospital under Mr. Morgan in 1835. About eight years before, he was thrown from his horse, and struck his head. He had concussion, and suffered from cerebral symptoms for three months; he then continued well for four years, when he began to have severe headaches, slight paralysis, and some impairment of the intellect. He continued thus, better and worse, for another four years, when he came into the hospital. He was then scarcely rational, at times delirious, and the right arm slightly paralysed; on the left side of the head, at the spot where he fell, near the posterior and superior angle of the parietal bone, was a lump. At this spot Mr. Morgan removed a circular piece of bone, the dura mater adhered very closely, and the membrane itself was in a thickened state. The man recovered the operation, but with only slight relief to the original symptoms.

See case fully related in Guy's Hospital Reports,  
Series I., vol. i., p. 407.

- 1073<sup>75</sup>. Calvaria exhibiting upon the inner surface of the os frontis a number of tuberos exostoses; these are principally situated along the median line.

Case of Maria P., aged 55, who had been an inmate of the lunatic asylum of the hospital for 37 years. The brain weighed only 1 lb. 14 oz.  
18. *Miscell. Insp. Book*, p. 228.

1074. Calvaria covered with large tuberos exostoses on its inner surface. They cover the whole of the interior, but especially the os frontis; and they here have a general disposition to run outwards and upwards on each side, in curved lines towards the coronal suture. There are also numerous projections on the other side of this suture, along the edges of the parietal bones, and also along the longitudinal line of the calvaria. The patient had suffered much from tic douloureux.

Presented by Mr. Wood of Birmingham.

- 1074<sup>15</sup>. Base of an adult skull. The right superior turbinated bone is expanded along its anterior half into a large ovoid cell, and the vomer is inclined to the opposite side. There are exostoses about the molar teeth, large thick styloid and mastoid processes, and projection of the occipital spine.

Presented by J. L. Mason, Esq.

1074<sup>21</sup>. Deformed coronal suture, excessive elevation and thickening of the bones on each side, both of the frontal and parietal.

1074<sup>28</sup>. Great enlargement and projection of the occipital bone.

1074<sup>29</sup>. Portion of frontal bone, having a small exostosis, with a narrow base.

1074<sup>30</sup>. Skull of an adult male, with numerous large and extensive exostoses on the external surface of the os occipitis. There are two smaller exostoses, one on the os frontis, and the other at the union of the right parietal and frontal bones.

Found in a churchyard.

1074<sup>35</sup>. An ivory peduncular exostosis, behind the foramen magnum, the size of a pigeon's egg. It is surrounded by a deep furrow, so that its point of attachment is less in size than its circumference above.

From Dissecting-Room.

1074<sup>68</sup>. Stylo-hyoid ligament ossified.

1074<sup>69</sup>. Stylo-hyoid ligament ossified.

1074<sup>70</sup>. Destruction of tympanum, and perforation of the temporal bone. The dura mater covering it is beginning to slough, but the brain is not affected.

Case of Henry L., aged 6, under Mr. Hilton. He also had phthisis, and scrofulous disease of the kidney.

Record of Insp., No. 85. 1854.

1074<sup>75</sup>. Skull of a child, with ulceration and perforation of the left temporal bone. A considerable portion of the petrous portion is destroyed.

1075. Ulceration on external surface of cranium of child.

Old Museum Book, No. 80.

Presented by Dr. Curry.

1075<sup>20</sup>. Superficial ulceration of calvaria; in some places, however, the whole thickness of skull is affected, and caries is perceived commencing on the inner table. Dried prep.

Case of Thomas F., aged 29, under Dr. Addison in 1840. He had received an injury to the head four months before, and suffered from cerebral symptoms since. On admission to the hospital there was also paralysis. On post-mortem examination, the pericranium was found detached, and suppuration on surface of skull, with caries. This spongy condition of bone was found to extend in several places through the skull, and caries was seen commencing within. The corresponding surfaces of the dura mater were covered with lymph, and opposite one place, at the posterior lobe on left side, the brain was shrunken and softened, and this condition extended to the central parts. There was also inflammation and a new growth of bone on the humerus. See prep. 1101<sup>60</sup>.

17. *Miscell. Insp. Book*, p. 255.

1075<sup>21</sup>. Corresponding wet section.

1075<sup>35</sup>. Skull with extensive ulceration on the external surface of the cranium; probably the effects of mercury and syphilis. The os frontis and right parietal bone principally affected.

1075<sup>36</sup>. Caries of calvaria; all parts being more or less affected, but principally the frontal. It does not extend to within.

1075<sup>40</sup>. Very extensive caries and necrosis of the calvaria; nearly the whole, both externally and internally, has a worm-eaten appearance. Several portions of bone are dead, have become isolated, and appear as if they would shortly have become detached. The only healthy portions appear to be the posterior parts of the frontal, and anterior parts of parietal, forming the vertex.

Case of Thomas K., aged 31, under Mr. Cock. He had been the subject of syphilis for many years, and caries of skull for twelve years; he had also taken much mercury. He died of acute arachnitis. The dura mater was firmly adherent to the bone, and was covered with lymph. See prep. 1592<sup>20</sup>, and drawing 2<sup>26</sup>.

*Record of Insp.*, No. 141. 1854.

1075<sup>70</sup>. Skull showing considerable caries of the frontal bone. The frontal sinuses are opened by ulceration.

1075<sup>75</sup>. Calvaria in which a large part of the bone has been destroyed, leaving the superior part of the head flattened, and covered merely by a thick membrane composed of the skin and its cicatrices, united together with the dura mater beneath.

On the left side is a large dead piece of parietal bone, almost detached. There is thus only a rim of bone running around the lower edge of the calvaria, and this is deficient in front. There is some new growth of bone seen in parts.

Case of Alfred H., aged 39, under Mr. Hilton's care. He had suffered from syphilis for many years, and taken mercury for other complaints. He died of acute arachnitis and pneumonia; the dura mater adherent to skull. The liver contained numerous fibroid nodules (Prep. 1913<sup>10</sup>), and the testes had undergone fibroid degeneration (Prep. 2351<sup>66</sup>).

Record of Insp., No. 233. 1856.

1076<sup>35</sup>. A portion of cranium showing a deposition of pus, with ulceration of bone beneath the pericranium, with a similar ulceration and deposition on the corresponding part of the inner surface; the effects of a kick of a horse.

Case of George B., aged 42, who was under Mr. Morgan's care in 1829, for various injuries received from the kick of a horse. The ribs were fractured, and the skull was laid bare. The patient left the hospital convalescent in three weeks, but became intoxicated, and returned shortly to die. The frontal bone, on right side, was denuded and discolored; and on the corresponding side, internally, the dura mater was separated, and purulent matter was present. There was general arachnitis and pus in the venous sinuses. Fractured ribs, Prep. 1050<sup>85</sup>. Dura mater, Prep. 1592<sup>14</sup>. Portion of liver injured by fractured ribs, Prep. 1947<sup>56</sup>; and drawing of same, 348. Lobular pneumonia, Prep. 1725<sup>72</sup>.

8. Green Insp. Book, p. 36.

1076<sup>70</sup>. Part of the parietal bone, with a necrosed portion undergoing the process of separation.

1076<sup>85</sup>. Skull showing a fissure on left side, supposed to be the result of a sabre wound. On the left side, and towards the back part, is a linear opening in the bone, about three inches long; this extends quite through to the interior, although, from an otitis having existed around it, an elevated ridge has been produced in front, and some new ossific deposit within, which has tended to close it. The dura mater was entirely wanting, to the extent of the wound; and adhered by a defined edge to the margin of the hollow. It was thought also that there had been some loss of cerebral substance at this part.

Case of John S., aged 28, under Mr. Key in 1838. He had cut his



throat several years before, and had been in the habit of taking his food through a pipe introduced into the œsophagus. There were vomices in the apices of both lungs. Prep. of dura mater, 1592<sup>90</sup>. Prep. of larynx and œsophagus, 1711<sup>11</sup>.

13. *Miscell. Insp. Book*, p. 114.

1076<sup>93</sup>. Calvaria showing considerable caries. At the lower part of the left parietal the skull is completely perforated, and a hole left as large as a shilling piece. There is another small isolated patch of caries near it, and two large patches of caries at the vertex, one at each anterior-superior angle of the parietal bone.

From Dissecting-Room.

1077. A parietal bone, the subject of extensive ulceration and necrosis, involving the whole thickness of the bone.

Presented by Sir A. Cooper.

1077<sup>20</sup>. Large sequestrum from one of the parietal bones, including both tables.

Removed by Mr. Key.

1077<sup>40</sup>. Numerous shot extracted from the head of a woman ; they are all much flattened. Also a piece of exfoliated bone.

Case of Charlotte M., aged 17, under Mr. Callaway, senr., in 1834. The bone exfoliated three months after the accident. The patient quite recovered.

2. *Note-Book*, p. 32.

1077<sup>60</sup>. Calvaria of a woman, with a large irregular opening at the vertex, occasioned by the separation of sequestra ; the result of violence.

Presented by R. Stocker, Esq.

1077<sup>70</sup>. Calvaria presenting a large deficiency of bone at the vertex, but more upon the right side. The opening is closed by a membrane, and into this numerous processes of bone are shooting from the inner table. It also contains several isolated deposits of bone towards the centre.

1077<sup>80</sup>. Portion of the cranium of a child, fractured by the kick of a horse, which was followed by hernia cerebri.

Wax model (Path.), No. 27.

1077<sup>90</sup>. Large exfoliated portion of the os frontis, measuring more than four inches long and three broad.

Case of Dudley C., aged 30, under Mr. Cooper in 1806. He was said to have contracted syphilis only four months before, and had taken much mercury. He speedily recovered, but soon an abscess appeared on the head; the bone became exposed, and afterwards exfoliated. He died, eventually, from the brain becoming implicated.

Old Museum Book, No. 77.

1078. Calvaria, in which there is a large irregular opening in the left portion of the os frontis. It appears to have been the result of ulceration, and to have been of long standing.

Drawing 177<sup>5</sup>.

1078<sup>50</sup>. Skull with a large irregular opening in the os frontis, just above the left orbit. It appears to be in part the result of ulceration, and in part of the operation of trephining.

1078<sup>55</sup>. Calvaria, showing caries, and much thinning of the bone on the left side of the os frontis; and necrosis, with a large loose portion of bone on the right side.

Case of James G., aged 37, under Mr. Key in 1838. He gave a history of injury to the head. The membranes and parts within at last became involved, and he died with cerebral abscess.

12. Miscell. Insp. Book, p. 159.

1078<sup>60</sup>. Calvaria presenting a large excavation on the skull, from exfoliation of bone. It includes the greater part of parietal, and the right side of os frontis. The disease appears to have ceased, as the edges of the bone are thin, smooth, and bevelled off. The opening is four inches long, and two inches broad.

1078<sup>66</sup>. Portion of frontal bone, exhibiting strumous ulceration of the os frontis. Also atlas with articular surfaces carious.

1078<sup>67</sup>. Dried preparation of remainder of frontal bone of same case, exhibiting an opening through the forehead, produced by

strumous caries; around it, both inside and without, is much spongy new bone. Also the second vertebra, showing ulceration of articular surfaces and odontoid process.

Case of Ellen Y., aged 16, under Mr. Key in 1844. On admission there was a loose piece of bone on the forehead, which was surrounded by soft scrofulous matter. This exfoliated, leaving an opening; and after death the dura mater was found covered with similar strumous material. The disease had also extended through the left orbit. There was an ulceration of odontoid process, and rupture of transverse ligament.

Prep. of dura mater, 159242.

12. *Miscell. Insp. Book*, p. 159.

1080. Calvaria in which a large portion of bone, consisting of a part of the os frontis and of both ossa parietalia, is exfoliating. This loose portion is about an inch square internally, but is double this size externally; the outer table being, as in nearly all the previous preparations of necrosis, more affected than the internal.

Case of Flora N., a young woman under Mr. Key in 1826, for syphilis.

1. *Green Insp. Book*, p. 62.

1080<sup>15</sup>. Portion of frontal bone, showing a large portion of it necrosed, and about to be detached. The inner table is much less affected than the outer.

1080<sup>25</sup>. Part of the os frontis and face. The external table of former extensively ulcerated, and at one spot on the left side the disease extends to the interior of the skull; the frontal sinuses are laid open. Nearly all the bones of the left side of the face are also destroyed, leaving a large vacuity; these include the nasal, superior maxillary, malar, and parts of sphenoid, ethmoid, and palate bones.

1080<sup>50</sup>. Skull showing most extensive destruction of the bones of the head and face. The whole of the os frontis has disappeared, with the exception of a fragment of dead bone, and the adjoining ossa parietalia are also somewhat affected. The bones of the face are also extensively destroyed, involving the outer parts of the orbits, the nasal bones, the anterior parts of the superior maxillary, together with the alveolar processes and teeth. The vomer and ethmoid have escaped.

There is seen some new ossific deposit around the diseased portions in the head, as in ordinary caries; but the bones of the face seem simply corroded, as in lupus or facial cancer.

Sarah C., aged 25.

- 1080<sup>62</sup>. Calvaria presenting a very large opening at its upper part, so that little more is left than a circular rim of bone, a large part of the os frontis and ossa parietalia being destroyed. The inner table is as much affected as the outer, and the bone does not present the appearance of there having been any ulcerative process, but rather a cancerous erosion; the tissue being simply eaten away.

Case of an old woman aged 82, who died in 1840. Two years before, she had a small tumor removed from her head. Ulceration of the bone followed, and rapidly progressed until exfoliation took place, and the brain was seen pulsating. The disease extended to within, and she died eventually of cerebral abscess.

Presented by Dr. Dowler, of Richmond.

2. Note-Book, p. 50.

- 1080<sup>69</sup>. Calvaria presenting the greater part of its outer surface in a carious condition, and at same time large pieces of necrotic bone are loose, and which if removed would leave considerable vacuities in the skull. One of these pieces is formed of the ossa frontis and parietalia, and has the coronal suture running through it.

- 1080<sup>70</sup>. Base of female skull, with the whole of occipital bone attached; the superior edges of which are smooth, and indicate that much of the skull has been lost by disease.

- 1080<sup>75</sup>. Skull of a young woman, showing caries of nearly the whole of its upper surface, as well as the malar bones. Small perforations have occurred in a few places. There is also necrosis of left ramus of lower jaw.

- 1080<sup>80</sup>. Exfoliation of part of parietal bone from injury.

Case of John C., aged 27, under Mr. Hilton in 1855. Three months before admission he fell and struck his head; a few weeks afterwards suppuration occurred, and bone became exposed; it subsequently became black, and a month after admission it was removed.

1081. Calvaria exceedingly carious from scrofulous disease. There is a deposit of soft exudation on the interior, and absorption of bone has taken place both internally and externally, producing a worm-eaten appearance.
- 1081<sup>35</sup>. Portion of the calvaria from the vertex, on the inner surface of which cancerous tubercles are seen to have formed, and to have replaced the bone.
- 1081<sup>40</sup>. Calvaria presenting a large excavation at vertex, in right parietal bone, and behind this a similar one, though smaller; they are closed merely by pericranium. Also on the inner surface numerous small erosions which have not reached the exterior. All these parts were occupied by a soft reddish material, which was found by microscopic examination to consist of a fibrous matrix, containing nucleated cells, the whole bearing a resemblance to epithelial cancer.

Case of Christopher B., aged 58, under Dr. Hughes. He was emaciated, and had a very aged appearance; he had a carbuncle, and gradually died from exhaustion, without presenting any marked symptoms of disease. All the organs, excepting the head, were found to be tolerably healthy, no cancer being found elsewhere. See prep. of dura mater, 1601<sup>10</sup>; and drawing of skull, 2<sup>89</sup>.

Record of Insp., No. 195. 1854.

- 1081<sup>45</sup>. Calvaria eroded in various parts by carcinomatous disease. Thus a large surface of the frontal bone is seen to be destroyed internally by it. On the external surface at this part the disease is seen to be protruding as a large flat tumor. There are also distinct points of disease in the parietal bone, where, being less advanced, the new growth simply takes the place of the bone, and forms raised tumors, both within and without the skull, but which if removed would leave as many openings in the bone.

Case of Mary K., aged 32, under Mr. Birkett. In March, 1853, she perceived a tumor in the left breast; in October this was removed by excision. In January, 1854, she was again readmitted to the hospital, with a return of the disease in the cicatrix; this also was excised. In December, 1854, she was again admitted, with the whole of side of chest affected, as well as having tumors in the head, and she shortly died.

The sternum ribs and lungs found affected with cancer; also liver, &c. The humerus had distinct nodules in medulla. See prep. 1106<sup>5</sup>. The dura mater was also covered with patches of the disease. See drawing 2<sup>90</sup>, and prep. 1601<sup>5</sup>.

Record of Insp., No. 16. 1855.

1081<sup>50</sup>. Calvaria showing a large carcinomatous tumor, situated at the anterior and superior angle of the left parietal bone. The space of bone affected has a diameter of two inches; upon this is seated externally a portion of a spherical tumor, and which penetrates the bone by numerous openings. On the corresponding side internally, there is a similar growth, which is connected with the dura mater; on the arachnoid surface of the latter the tumor is also seen projecting, and this caused a considerable depression on the brain. The disease probably commenced in the membranes.

Case of Charles D., aged 21, under Dr. Rees for disease of the chest, which proved to be carcinoma of the left lung. There was no other disease in the body.

Record of Insp., No. 23. 1858.

1081<sup>70</sup>. Calvaria affected throughout with carcinomatous tubercles. These occupy the whole thickness of the bone, and project equally within and without, so that if the morbid material were removed, as many corresponding holes would be left.

Case of Sarah B., aged 39, under Mr. Morgan in 1835. For eighteen months she had suffered from cancer of the breast, and now involving the skin of the whole of the right side, by a number of distinct scirrhus tubercles. The lungs and liver also contained cancer. None at the base of the skull.

6. *Miscell. Insp. Book*, p. 121.

1081<sup>74</sup>. Calvaria, dried, presenting a number of small excavations on its interior, produced by cancerous growths. In a few places they have just penetrated the external table.

Case of Samuel H., aged 48, under Dr. Addison in 1843, who died of cancer of peritoneum, and probably of lungs.

19. *Miscell. Insp. Book*, p. 118.

1081<sup>78</sup>. Dried portion of parietal bone, having near its vertex a round excavation externally, produced by cancerous disease.

Case of Jane B., aged 68, under Dr. Bright in 1840. She had had cancer of the breast for four years. There was cancer of the ribs; and occupying the excavation in the skull was a soft cancerous tubercle. Prep. of uterus, showing closed mouth, 2259<sup>95</sup>.

17. *Miscell. Insp. Book*, p. 154.

1081<sup>85</sup>. Frontal portion of skull, dried, in which a large part of the os frontis is destroyed, said to be by cancer. The history is as follows :

A negro woman, aged 20, resident in Jamaica, received a blow on the forehead in the year 1804. A tumor shortly arose on the spot, and continued to increase until 1805, when she underwent treatment by mercury, and the swelling became reduced to half the size. In 1807 she came under the care of Mr. A. Garsia, who found a tumor on the os frontis the size of an orange; this he considered to be a blood tumor, growing from the diplöe, in consequence of a fracture occurring at the time of the injury. An incision was made into it, coagula came out, and much hæmorrhage ensued. In a few months' time it was as large as ever, all further operative measures were declined, the surface began to slough, and there were repeated hæmorrhages. (It is not stated at what time death took place, and the nature of the tumor is not very evident from the above description.)

2. *Note-Book*, p. 36.

1081<sup>92</sup>. Calvaria, dried, showing a large part of frontal bone, destroyed by cancerous disease. There are also isolated spots on other parts, where the bone is being similarly destroyed.

Case of Mary L., aged 71, under Mr. Key in 1843 for cancer of the knee. See prep. 1347<sup>90</sup>; and of patella, see prep. 1210<sup>97, 98</sup>.

19. *Miscell. Insp. Book*, p. 144.

1081<sup>95</sup>. Portion of calvaria, showing a large carcinomatous deposit, destroying the whole thickness of the bone.

A private case of Mr. Hilton's. A male, aged 70; he had been ill four years, and shortly before his death he fractured the humerus and forearm, but these were not examined. The skull showed numerous deposits of cancer.

1082. Anterior half of the base of the skull, exhibiting extensive

fracture, implicating not only the base, but also both superior maxillary bones.

- 1082<sup>50</sup>. Middle and posterior part of the base of a skull, exhibiting an extensive and comminuted fracture, implicating the sphenoid, the right temporal, and the occipital bones. The foramen magnum, with a broad rim of bone, is carried inwards towards the interior of the skull.

From John T., aged 45, a patient of Mr. Key in 1829, who had fallen from the deck into the hold of a vessel, a distance of 14 feet. It was not known what part of the body had been struck. He survived only a few hours.

1. *Miscell. Insp. Book*, p. 52.

1083. Portion of the parietal bone removed successfully by the trephine, from a man who attempted suicide with a pistol loaded to the muzzle. The ball was divided by the resistance it received from the thick bone: one half passed under the scalp, and lodged in the integuments; the other in the diploë, depressing and fracturing the inner table. The bone is seen to be much hypertrophied. The man recovered without a bad symptom.

Presented by Mr. George Dickinson of Ealing, in 1826.

1. *Note-Book*, p. 25.

- 1083<sup>20</sup>. Portion of bone removed, to assist in raising other portions in case of fractured skull.

John B., aged 13, admitted under Mr. Morgan in 1835. He had received a blow from a brick-bat, on the upper and anterior part of left side of head; a fracture was detected, with depressed bone. By means of Hey's saw a portion of bone was removed, and the depressed fragments taken away. The boy made a good recovery.

For full particulars see *Guy's Hospital Reports*,

Series I., vol. i., p. 412.

- 1083<sup>23</sup>. Portion of temporal bone showing a fracture through the tympanum; the facial nerve untouched, although its canal is broken through, and the membrana tympani is entire.

Case of John C., aged 33, under Mr. Birkett. He fell from a cart, and was taken up insensible. No fracture could be detected, and there



was no discharge from the ear. He died two days afterwards from arachnitis, and injury to the brain. The base of skull was found fractured.

Record of Insp. No. 51. 1856.

1083<sup>25</sup>. Portion of bone removed successfully in case of compound fracture of skull.

Edward S., aged 9, admitted under Mr. Morgan in 1835. He had fallen a height of 20 feet, into the hold of a vessel. On the right temple a fracture was detected. A piece of bone was removed by Hey's saw, and other loose portions taken away. The boy made a good recovery.

For full particulars see Guy's Hospital Reports,  
Series I., vol. i., p. 411.

1083<sup>29</sup>. Portion of bone removed by the trephine, in order to release the blood effused from rupture of meningeal artery.

1083<sup>30</sup>. Calvaria of same case, fifteen years afterwards, showing the opening made by the trephine closed in by membrane.

Case of John P., aged 46, who was admitted under Mr. Cock in 1841. He had fallen from a height, and was stunned by the blow; he shortly regained his consciousness, but in a few hours coma came on, as if blood effused within the cranium. Mr. Cock trephined, and removed a large clot of blood, with immediate relief to the symptoms. Although the case progressed slowly at first, the man made a good recovery, and resumed his work. He continued at his employment for several years, and at last died in 1856.

For full particulars of case see Guy's Hospital Reports,  
Series I., vol. vii., and Series III., vol. iii.

1083<sup>37</sup>. Calvaria extensively fractured at its posterior part.

From a man aged 78, caused by a blow from a cab shaft.

From Dissecting-Room. 1843.

1083<sup>42</sup>. Calvaria presenting a comminuted fracture in right temporal region. One piece has been removed, and other portions are depressed.

Case of Samuel A., aged 11, under Mr. Morgan in 1843. While standing at the water side, by Waterloo bridge, he received a blow on the head by a stone thrown from above. The dura mater sloughed, the brain protruded, and the boy died of arachnitis a fortnight after the accident.

19. Miscell. Insp. Book, p. 201.

1083<sup>48</sup>. Calvaria showing fracture of the frontal, parietal, and temporal bones of left side.

Case of James B., aged 12, under Mr. B. Cooper in 1843. He fell from a cart, and his head was compressed between the wheel and curbstone. Some pieces of bone were removed. He died in a few hours.

19. *Miscell. Insp. Book*, p. 214.

1083<sup>55</sup>. Calvaria showing the effects of violence from a concentrated force, producing fracture.

(Factitious; made for Mr. Key's Lectures.)

1083<sup>58</sup>. Calvaria showing comminuted fracture, with indentation on left side, and a similar condition, although to a less extent, on the right. There is also a long fracture proceeding from the former upwards through the frontal bone.

Case of William L., aged 47, a policeman on the Croydon railway, under Mr. Cooper in 1842. He had been knocked down by a train.

18. *Miscell. Insp. Book*, p. 244.

1083<sup>60</sup>. A round portion of bone removed by trephine, together with some smaller fragments, taken from the skull in a case of compound fracture.

A young man aged 30, admitted under Mr. Poland in 1857. While standing superintending a crane, a piece of iron fell on his skull, knocking him down senseless. About two hours afterwards consciousness partly returned. Mr. Poland found a compound fracture, and being unable to remove the pieces of bone, he trephined the skull, and sawed off another portion, when he raised several fragments that were pressing on the dura mater. He was placed under chloroform during the operation, immediately after which he appeared relieved. He was put on extremely low diet, and he perfectly recovered in a fortnight, never having had a bad symptom.

1083<sup>62</sup>. Portion of skull near left temple, showing a fracture and an opening produced by the trephine. From a young subject.

From Mr. Howship's collection.

1083<sup>65</sup>. Portion of parietal bone removed from skull, showing to how much greater extent the inner table is fractured than the outer.

George P., a strong young man, was admitted under Mr. Poland on August 15th, 1853. He fell, with several others, a height of 170 feet,

from the centre transept of the Crystal Palace, during its erection. There was compound fracture of the skull, and some portions of bone were removed. He made a recovery, and left in October. He visited the hospital in 1857, and stated that he had never been quite well since the accident, and he seemed to have some slight hesitation in his speech. He was engaged as a watchman. He wore a silver plate in his head, and was much affected by the vicissitudes of weather, feeling very unwell during the prevalence of a thunder-storm.

- 1083<sup>70</sup>. Portion of parietal bone, exhibiting a circumscribed fracture, with a depression of the two tables. It is about one and a half inch square, indentated and comminuted.

Case of John E., aged 46, under Mr, Key in 1834. He fell from a loft, producing compound fracture of the skull, together with fracture of rib and injury to the lung. He had no cerebral symptoms, but died from pleurisy a fortnight afterwards

5. Misc. Insp. Book, p. 79.

- 1083<sup>75</sup>. Portion of frontal bone, showing several fractures affecting the internal and external tables separately. There is one fissure on outer table, two and a half inches in length, and of which there is no trace within; there is also another within, one and a half inch long, half of which is only seen on the external table.

Case of George C., aged 12, under Mr. Hilton. He fell over the bannisters on to the floor beneath, and was picked up insensible. No fracture could be detected. He died five days afterwards of arachnitis, when the right side of the frontal bone was found fractured or starred, and the fissures seen in the preparation proceeded in all directions from it.

Record of Insp., No. 159. 1857.

- 1083<sup>80</sup>. Spontaneous separation of portion of cranium after a blow.

- 1083<sup>81</sup>. Piece of cranium, which separated about three months after a direct blow, received from falling upon the curb.

Case of Philip B., aged 24, who met with the accident in 1850, and two years afterwards the injury appeared quite repaired.

- 1083<sup>85</sup>. Os frontis, with a portion in process of detachment, in consequence of injury producing fracture of the internal table.

1084. Portion of skull, exhibiting marks of old extensive injuries,

apparently produced by a sabre; one running obliquely along the top of the head, is five inches in length, and implicates the frontal and left parietal bones. There is also another vertical one of great length, affecting the lower part of the left parietal bone, and ending in the suture between the temporal and sphenoid. There is also an indentation on the posterior and lower angle of the same bone. Found on the field of Marengo.

Presented by Mr. B. Cooper.

1084<sup>15</sup>. Portion of os frontis, showing the remains of an old incised wound which has fractured the bone.

1084<sup>20</sup>. A portion of parietal bone, in which are two openings covered in by membrane; and in the latter, repair has taken place by some ossific deposit. One of the openings has a roundish shape, as if produced by the trephine.

1084<sup>25</sup>. Portion of skull, showing an indentation and loss of substance, more on external table than internal, where it appears merely as a fissure. It appears to have undergone considerable repair.

From Mr. Bryant's collection.

1084<sup>30</sup>. Skull, showing remains of a severe wound on the middle of the right parietal bone. There is loss of substance externally, and it penetrates to within, where it is seen as a fissure half an inch long, and from each end there proceeds a fracture quite across the bone, both upwards and downwards.

1084<sup>34</sup>. Skull, presenting a perforation made by a bullet, in middle of left parietal bone. The internal table is separated to a greater extent than the outer. From the field of Leipzig.

Presented by Mr. Poland.

1084<sup>35</sup>. Skull, showing the remains of a sabre cut on left temporal region. A large portion of the squamous bone has been broken off, leaving an opening in the skull two and a half inches in length. From the field of Leipzig.

Presented by Mr. Poland.

- 1084<sup>38</sup>. A skull of a young person, showing a repaired fracture. The commencement of the temporal ridge, on the right side near the orbit, has been indented for the space of a square inch by a comminuted fracture; the pieces are now firmly united. Proceeding from this spot there are several fissures, one of which runs upwards as far as the coronal suture. This is quite repaired, and appears only as a slight linear depression. There is no trace of it on the internal table.
- 1084<sup>45</sup>. Skull, showing the effects of an old extensive fracture of the os frontis, on the right side, extending along its whole length, from orbit to coronal suture. There is a considerable loss of substance, by which a large gap is left on the surface. It does not appear to penetrate to the inner table. Considerable repair has taken place, as well as osteitis producing elevation of bone around.
- 1084<sup>60</sup>. Skull, showing a vertical fissure, produced by a sharp instrument on left parietal bone, undergoing some repair. There is also a patch of caries at the vertex, on the left parietal bone.
- 1084<sup>65</sup>. Lateral section of a cranium, showing a perforation of left parietal bone near the sagittal suture. There is much loss of substance of the outer table; the edge of the opening is smooth, and there appears to have been some repair.
- 1084<sup>70</sup>. Cranium, exhibiting two very remarkable and symmetrical openings at its back part, one being in each inferior and inner angle of the parietal bones. The openings are round, one third of an inch in diameter, and appear as if some repair had taken place.
- 1084<sup>75</sup>. Skull, showing the remains of an extensive old fracture on the left side of the head, taking a horizontal direction across the os frontis. It appears to be quite repaired.
1085. Portion of the parietal bone, in which the external table is indented without fracture.

1085<sup>75</sup>. Circular fracture of frontal bone.

Case of Michael S., aged 37, was admitted under Mr. Birkett, in May, 1852, having fallen from a height to the ground. There was a scalp wound over the right temporal ridge, and the bone was exposed. He recovered the concussion, and was progressing favourably, when symptoms of arachnitis came on, and he died nine days after the injury. The post-mortem examination showed a fracture proceeding from the point indicated, down to the sella tursica. The bone at one part was slightly depressed. The dura mater beneath was uninjured, as likewise the brain; but there was a small effusion of blood, and whole surface of hemispheres covered with purulent effusion from arachnitis.

1085<sup>80</sup>. Several portions of skull, exhibiting various injuries undergoing repair. They have probably been picked up on a battle-field, as they show the effects of bullet and sabre wounds.

A. Portion of skull, showing the effects of a fracture.

The bone has been broken to the extent of a square inch over the coronal suture at the left side. The greater part of the opening is closed by a portion of the bone which has been displaced, and become adherent to its edge; the suture is seen running through this piece.

B. Portion of bone, showing an indentation of nearly

a square inch over the left frontal protuberance. The bone projects on the interior, and has apparently been comminuted, although the portions have now become firmly united.

C. Portion of bone, showing a long cut, penetrating

through the bone, nearly two inches long. The opening is partly closed by a new growth of bone from the edge, and which projects over it.

D. Portion of bone, exhibiting on left side of coronal

suture a slight elevation with a fissure at its side, evidently the effects of an oblique cut. There is also a round hole in the frontal bone, evidently produced by a shot; the edges externally are

sharp, but within there is a considerable loss of internal table around it.

E. Portion of bone, presenting a semicircular ridge, and the bone beneath depressed, produced evidently by a violent blow. On the interior it presents a more prominent edge, but perfect union has taken place.

1085<sup>85</sup>. Fracture through the temporal bone.

1085<sup>90</sup>. Fracture through base of skull and temporal bone, showing facial nerve exposed, but uninjured.

1086. Calvaria, showing a most extensive fracture of the left parietal bone, also the frontal separated at the coronal suture.

Case of Matthew L., under Mr. Key in 1826. His head was crushed by a cart-wheel. Preparation of lacerated dura mater 1607; and injured portion of brain 1570.

1086<sup>65</sup>. Portions of parietal and occipital bones, showing depressions of skull.

Case of William A., aged 42, under Mr. Birkett. He was knocked down by an engine on the railway. He died a month afterwards of pyæmia, produced by other injuries received at the time of the accident.

Record of Insp. No. 169. 1854.

1086<sup>70</sup>. Calvaria, showing an opening produced by a trephine. The edges are rounded, showing that some time had elapsed since the operation, but there is no attempt at repair by bone. The opening is closed by membrane formed by pericranium.

From Mr. B. Cooper.

1086<sup>75</sup>. Calvaria, showing an opening in the right temple, produced by a pistol-shot wound. It is rather more than an inch long, and formed by the junction of two round openings; the lower made by the bullet, and the upper by the trephine.

Case of Thomas C., aged 35, under Mr. Birkett. During a fit of insanity he shot himself, by placing the pistol close to his head. The bullet was found in the wound severed in two by the edge of the bone.

The trephine was applied to remove it, together with some portions of the bone. He died six days afterwards, and the dura mater beneath was found lacerated, and the brain sloughing.

Record of Insp. No. 242. 1854.

- 1086<sup>80</sup>. Calvaria showing considerable fracture, and complete separation of the frontal bone at the coronal suture.

Case of Catherine W., aged 25, under Mr. Hilton. She fell from a window at the top of a house upon the pavement below, and died three days afterwards.

Record of Insp., 77. 1855.

- 1086<sup>85</sup>. Calvaria showing reparation of fracture. On the left side there is loss of substance, and proceeding from this around the os frontis and right side of head, is a fracture completely united. Upon the interior the bone is rough, showing the inflammatory action which had been produced. Eleven weeks after the injury.

Case of Alexander R., aged 14, under Mr. Birkett. While at work at Messrs. Maudslay's, he accidentally received a blow on the head by a hammer. A wound existed on left temple, and some comminuted bone was removed. The boy slowly progressed, and the wound healed. He, however, again fell into a low state, and died eleven weeks after the accident. An encysted abscess was found in the brain, but the external parts injured had quite healed. A long fracture, proceeding from the left temporal region around the front and right side of head, as far as lambdoidal suture, had quite united, and so firm was it that no displacement took place when the calvaria was removed in the usual way by the chisel and mallet. A fissure proceeding downwards through the middle fossa was also quite closed.

Prep. of cerebral abscess, 1565<sup>86</sup>. Drawing 2<sup>101</sup>.

Record of Insp., 163. 1856.

## BONES OF FACE.

1087. Tumor of the upper jaw. A cystiform expansion of the bone.

Removed by Mr. Key.

- 1087<sup>12</sup>. Head of a foetus, with considerable deficiency of the superior maxillary and palate bones.



1087<sup>24</sup>. Skull showing ulceration and exfoliation of both superior maxillary and palate bones, with loss of vomer. Incipient ulceration of the os frontis, and partial bony deposit from periosteal inflammation near the left angle of the lower jaw. There is considerable want of symmetry in the form of the skull.

1087<sup>36</sup>. Skull with the left os nasi, and considerable part of the superior maxillary bones destroyed by ulceration.

1087<sup>48</sup>. Skull showing the effects of lupus. The upper incisors and their cavities are lost. The nasal aperture is enlarged.

Case of Mary D., aged 40, under Mr. Cooper in 1826. She was in the hospital seven years, and at the time of her death, nearly the whole face was destroyed, including the eyes, one having been lost for a considerable time; bones of nose eaten away, and integument of forehead. It was not thought that she had ever had syphilis. See wax model (cutaneous diseases), No. 218.

4. Misc. Insp. Book, p. 1.

1087<sup>60</sup>. The base of a skull, showing considerable destruction of the palate from disease, there being a large oval opening communicating with the nasal cavities. The edges of the opening are rounded and smooth, and the teeth appear unaffected.

1087<sup>74</sup>. Skull with the under half of the ethmoid bone, the ossa nasi, palate, and vomer, with great portion of the superior maxilla destroyed by ulceration. All the teeth are lost.

1087<sup>86</sup>. Two ossa nasi necrosed.

Presented by Mr. Towne.

1088. Skull showing ossa nasi fractured and repaired. The left bone has been broken near its lower end; the right, which is longer, and encroaches on the other, has been divided near its middle, and the displacement laterally of its inferior portion is considerable.

1089. Skull showing a fracture across the middle of the ossa nasi, reunited with some displacement.

1089<sup>50</sup>. Six specimens exhibiting fractures of the ossa nasi.

- A. Nasal bones fractured transversely; firmly united, but bent downwards.
- B. One nasal bone transversely broken and united, the other has a portion removed from it.
- C. Transverse fracture of both bones united.
- D. Transverse and comminuted fracture of both bones, firmly united, and the right to the superior maxilla.
- E. Transverse and longitudinal fracture only partially united.
- F. Transverse fracture of both bones united, and also partially to maxillæ. The skull is remarkably round. The atlas is firmly ankylosed to os occipitis. It is edentulous, and evidently old.

Brought from Paris.

1090<sup>30</sup>. Lower jaw. The right side much smaller than the left, and the angle more obtuse.

From Brooke's collection.

1090<sup>60</sup>. Lower jaw with exostosis along its lower margin anteriorly.

1090<sup>80</sup>. Lower jaw of a child, with the condyloid process, and a considerable portion of the ascending plate impaired by ulceration.

1091. Sequestrum consisting of two-thirds of the alveolar processes of the lower jaw. Necrosis induced by the use of mercury for ovarian dropsy.

Presented by Mr. Key.

1091<sup>5</sup>. Sequestrum consisting of symphysis and horizontal rami of lower jaw, together with the first two molar teeth, separated in consequence of cancrum oris.

Case of Louisa N., a child under Mr. Birkett in October 1851 for cancrum oris. After the sloughs came away, a large portion of the lower jaw followed, the separation taking place posterior to the dental foramina. The wound healed, and in September, 1852, the face presented comparatively little deformity. Seen again in April, 1856, when an

osseous growth was found to have taken the place of the original portion of the lower jaw. Power of mastication good, and sense of feeling nearly perfect.

See drawing 230<sup>60</sup> & <sup>61</sup>.

1091<sup>6</sup>. A large portion of lower jaw, with the teeth exfoliated after cancrum oris.

1091<sup>7</sup>. Portion of lower jaw, consisting of condyle, angle and part of horizontal ramus of lower jaw, separated by necrosis after fever. On its inside the dental foramen and canal are seen.

A lad, aged 14, under Mr. Birkett in September, 1854, suffering from necrosis of left side of upper jaw in consequence of fever. The part was removed, together with the molar teeth. He recovered with comparatively trifling deformity, and the skin remained sensitive, although a large part of the trunk of the nerve must have been destroyed.

1091<sup>10</sup>. Tumor removed from the lower jaw by Mr. Morgan. A similar tumor had been removed from the same patient about four years previously. A private case.

The tumor appears to be enchondromatous, and possibly had no connection with the bone.

1091<sup>11</sup>. A considerable portion of the lower jaw removed by Mr. Morgan. A great part of the mucous membrane was affected, and produced a tumor in which ulceration had commenced, and the bone become involved. About two months after the operation the disease returned. It was said to have commenced in the gum. This specimen proves to consist of epithelial cancer.

1091<sup>15</sup>. Wet section of right half of lower jaw, the subject of fibro-cartilaginous disease. The teeth are seen in the midst of the new growth.

Case of a woman aged 29, in the hospital in 1846. The disease had been coming nine years. It was removed by Mr. Key.

1091<sup>16</sup>. Dried section of same, showing the expanded bony shell of the jaw, the new structure having been removed.

1091<sup>20</sup>. Fibrous tumor growing from the alveolus of the lower jaw.

Removed by Mr. Morgan from a young woman who left the hospital apparently well. A fang is implanted in it.

1091<sup>25</sup>. Fibrous tumor removed from the lower jaw by Mr. Cock in 1858.

Samuel G., aged 9. Two years before, he had received a blow on the chin, and six months afterwards a small tumor appeared. It was emerging from the bone, and imbedded in it; size of walnut, and nerve passed through it, necessitating its removal in two parts.

1091<sup>28</sup>. A tumor removed from near the angle of the jaw; it was said to have returned, and was called malignant. It appears, however, to be enchondromatous.

1091<sup>30</sup>. Right half of the lower jaw, with which is connected a large cyst filled with a coagulum and a soft fibrous growth. It was thought to be malignant, and to be dependent on an aneurism, as a small tumor in the gum was first observed, which bled profusely on being opened. The nature of the specimen is not at all clear.

Presented by Mr. Dendy in 1827.

1. Note-Book, p. 41.

1091<sup>35</sup>. A large tumor from the lower jaw, apparently fibro-cartilaginous. Removed after death.

Presented by Mr. Bradley, Kent Road.

1091<sup>40</sup>. Left half of lower jaw, with a large malignant tumor succeeding to the removal of cancer of the lip; the soft parts in the mouth are involved in the disease, and the bone is extensively affected.

Case of William B., aged 40, under Mr. Cooper in 1829 for a large tumor at angle of lower jaw, succeeding removal of cancer of lip. It reached the os hyoides, which was involved in it. The patient died of exhaustion; no disease was found in the body.

1. Misc. Insp. Book, p. 55.

1091<sup>50</sup>. Greater part of the lower jaw removed on account of fibro-cystic disease, producing great enlargement of the bone.

The section has a spongy appearance, and contains numerous cysts.

Boy aged 13, under Mr. Key in 1841. He stated that the disease began as a lump two years before, on the anterior part of lower jaw, and this gradually increased backwards; he never had much pain in it. The jaw was removed by Mr. Key, by sawing through it just below the angles on each side. Recovered.

1091<sup>70</sup>. Lower jaw, having a doubtful fracture on the left side at the angle.

1091<sup>80</sup>. Model of the breech of a gun which had been lodged in the face of a man for twenty-one years.

He was in the service of Mr. Rickard of Faversham, Kent; while shooting birds, the gun burst, and he received in consequence severe injuries in the face. The eye was knocked out, and the roof of the orbit destroyed, through which the brain protruded; the latter sloughed, and after a long illness the man recovered. At the latter end of the year 1856 he was suddenly seized with symptoms of choking, as from a foreign body in the throat; and on putting his fingers in his mouth to remove it, he drew forth the breech of a gun, much oxidized, and covered with purulent matter. It is supposed that the piece of iron broke through the floor of the orbit, and had been lodging in the antrum ever since.

Presented by C. L. Allwork, Esq., Maidstone.

#### CLAVICLE.

1093. Clavicle rough and enlarged, from effects of periostitis.

1093<sup>25</sup>. Clavicle affected with periosteal inflammation and necrosis.

1093<sup>26</sup>. A similar specimen.

1093<sup>50</sup>. Clavicle considerably hypertrophied from general inflammation of the bone. There is necrosis of the clavicular extremity. Said to arise from syphilis.

1094. A portion of clavicle rather more than four inches long, separated from its middle by necrosis. The patient recovered.

- 1094<sup>8</sup>. Clavicle of a child the subject of inflammation and caries, probably arising from scrofula.
- 1094<sup>16</sup>. Slight caries of sternal extremity of clavicle, supposed to arise from scrofula.
- 1094<sup>24</sup>. Clavicle affected with inflammatory enlargement of the sternal end. It also exhibits an united fracture.
- 1094<sup>32</sup>. Clavicle which has been fractured and well united.
- 1094<sup>36</sup>. The right clavicle fractured and well united.
- 1094<sup>38</sup>. Fractured clavicle united.
- 1094<sup>40</sup>. A very oblique fracture of the clavicle, badly united.
- 1094<sup>48</sup>. Fractured clavicle united.
- 1094<sup>50</sup>. Fractured clavicle united.
- 1094<sup>52</sup>. The right clavicle broken and united.
- 1094<sup>54</sup>. Clavicle fractured and united.
- 1094<sup>56</sup>. Clavicle fractured and badly united.
- 1094<sup>64</sup>. Clavicle fractured and very badly united.
- 1094<sup>72</sup>. Fracture of the clavicle near the sternal extremity, badly united and much shortened.
- 1094<sup>80</sup>. Fracture of the clavicle near the sternal extremity, badly united and much shortened.
- 1094<sup>86</sup>. Clavicle fractured in two places; first, near the middle, and, secondly, about an inch nearer the acromion with angular union.
- 1094<sup>94</sup>. Two inches of the sternal end of the clavicle, which has been fractured obliquely and united with considerable thickening.

- 1094<sup>95</sup>. Clavicle exhibiting reparation after fracture of twenty-five days' duration. The ends are seen to be riding over each other, and there is a large superficial callus around them.

Case of William C., aged 32, under Mr. Birkett in 1853 for compound fracture of leg and fracture of clavicle. He died of pyæmia.

New Vol. iv., p. 271.

### SCAPULA.

1095. Scapula exhibiting preternatural thinness, almost producing an opening in the dorsum.
1096. Another similar specimen.
- 1096<sup>10</sup>. Right scapula of remarkable thinness.
- 1096<sup>20</sup>. Right scapula of remarkable thinness.
- 1096<sup>30</sup>. Scapula of remarkable thinness, and very narrow towards its inferior angle.
- 1096<sup>40</sup>. Another similar specimen.
- 1096<sup>50</sup>. Scapula with the impression of the subscapularis muscle strongly marked. It is broad at its inferior angle, on the external side of which is a process much larger than usual. The inferior angle is very much prolonged.
- 1096<sup>60</sup>. A similar specimen, probably the fellow-bone from same subject.
- 1096<sup>70</sup>. Rather small scapula, remarkably broad towards its inferior angle, with two considerable processes projecting, one from its base and the other from its internal margin; the fossa supra-spinata broad, and the notch almost obliterated.
- 1096<sup>80</sup>. Right scapula, showing a thickening of bone and exostosis, probably from effects of inflammation.
- 1096<sup>90</sup>. Scapula showing bony thickening and exostosis along the spine and base, probably from effects of inflammation. The coracoid process is also affected.

1097. Scapula showing caries of the glenoid cavity and neck.
- 1097<sup>35</sup>. Scapula presenting a round opening in the infra-spinous fossa, as if produced by a gun-shot. The opening is larger on the outer side, from the chipping away of the external edges, which would appear as if the shot had passed through the body to the back. This appearance may, however, have been produced by disease, or even the hole itself may have originated altogether from necrosis.
- 1097<sup>50</sup>. Scapula presenting several openings and inequalities, as if it had been extensively fractured and repaired.
- 1097<sup>70</sup>. Scapula showing a repaired fracture extending from the commencement of the spine to the middle of the inferior costa. The under portion overlaps the superior. The displacement is much greater inferiorly than superiorly.
- 1097<sup>85</sup>. Scapula fractured near the cervix; the glenoid cavity, coracoid process with notch, having been completely separated. The rest of the bone was also crushed.

Case of a man, aged 44, who was thrown out of a cart, and fell upon his right shoulder. A transverse fracture of the scapula was detected by Mr. Cock. The man survived eight days.

- 1097<sup>90</sup>. Dried preparation of the shoulder-joint, showing the acromion detached, and said to be fractured. It appears, however, to correspond to the separate portion of bone seen in cases of chronic rheumatic arthritis, although there is not much change of other parts.

Presented by Mr. J. Dashwood.

1098. Fractured acromion with partial ligamentous union. The original description has been retained, but it is probably similar to the preceding specimen.
- 1098<sup>5</sup>. Myeloid tumor of the scapula, developed within the acromion process. It consists of a bony shell, containing within it a soft material of purely myeloid elements.

Case of Ellen C., aged 27, under Mr. Cock. She had felt pain in the shoulder for a year and nine months, but had only observed a



swelling for six months. There was a large tumor the size of a child's head, growing from the left shoulder, round and very hard. In Jan., 1855, it was removed by Mr. Cock, by sawing through the acromion process in which it had been formed. The patient soon recovered, and is at present quite well.

Drawing 5<sup>5</sup>. For full particulars of case, see G. H. Rep., Series III., vol. ii.

- 1098<sup>10</sup>. Scapula almost destroyed by cancer, being very thin in some parts, and quite eaten through in others. Also a portion of cranium and dura mater containing a mass of cancer, and a rib in similar condition.

A girl aged 22, under Mr. Birkett. For about seven months had pain in left shoulder, and for a few weeks had observed swelling in the part. When first seen, a large growth could be observed springing from the scapula. She died in great agony; and on examination, a large carcinomatous tumor was found entirely surrounding the scapula, and apparently springing from the periosteum on all sides. The bone was found almost destroyed. Cancer was also found in the dura mater and cranium, in the ribs, and also in the pancreas. Prep. 1989<sup>10</sup>.

Record of Insp., No. 194. 1855.

- 1098<sup>15</sup>. A very similar specimen to the preceding, the scapula being almost destroyed by carcinomatous tumors (now removed), which sprung from every surface of the bone.

Case of Catherine A., aged 17, under Mr. Cock. She felt pain in her left shoulder for about a year, and had observed a swelling for six months. She did not survive long, and after death a very large tumor was removed, containing the scapula imbedded in the midst of it, and almost destroyed. The lungs also contained cancer.

Record of Insp., No. 18. 1857.

- 1098<sup>20</sup>. Portion of an immense enchondromatous tumor, removed after death from the right shoulder.

Case of James G., aged 57, a carpenter. About seven years before his death in 1838, he struck his shoulder; this was followed by much pain, and in a few months he observed a swelling in the part. This increased, but he continued at work for four years. The tumor had then attained great size, reaching as low as the ninth rib, and as far back as the spine. The patient came to London, and Mr. Liston wished to remove it, but he refused. During the next three years the tumor went on increasing until it reached the median line in front as well as behind, and rested upon the ileum. He was obliged to sit on a chair,

and support the tumor on a table. At last it began to slough, and he took to his bed, dying worn out. The tumor appeared to rise from the scapula, and consisted of cartilage with some bony matter.

Presented by Mr. R. Nunn, Colchester.

2. Note-Book, p. 48.

1098<sup>21</sup>. Amorphous portion of bone macerated from a part of the preceding tumor.

1098<sup>50</sup>. Scapula and ribs affected with mollities ossium. The former is very thin, light, and is bent upon itself; the latter are of similar consistence, and are bent in various directions.

Taken from a female subject in the Dissecting-Room, about eighty years of age, which came from the workhouse. March, 1857.

#### OS HUMERI.

1099. Humerus in which the pits for the reception of the olecranon and coronoid process of the ulna meet, producing a foramen. The lower extremity of the bone is affected with periosteal inflammation, and therefore the opening may be the result of disease.

1100. Humerus of which the head is deformed by considerable absorption of some parts, and slight bony deposit on others, probably the result of dislocation; or the head may have been broken off, but the history is not known.

1100<sup>7</sup>. Humerus having a large exostosis growing beneath the head from its outer side. All around the neck also there is considerable bony deposit.

1100<sup>10</sup>. Humerus showing a new growth of bone or lamellar exostosis on the middle of the shaft.

1100<sup>15</sup>. A left humerus, showing a processus supracondyloideus. This consists of a hooked process of about three-quarters of an inch long, growing two inches above the internal condyle. It is hooked downwards, and has, by means

of a ligament at its extremity, formed at one time a foramen. This corresponds to the foramen on the inner condyle of many of the carnivora and other species of animals, to allow the passage of the brachial artery and median nerve.

1100<sup>22</sup>. The upper part of the shaft of a humerus, showing the head very much malformed; below this there are several bony projections. It may probably have been the seat of fracture.

1100<sup>27</sup>. Humerus presenting a large projection or exostosis at the upper part of the shaft; probably the result of injury.

1100<sup>30</sup>. Dry preparation of shoulder-joint, showing the effects of chronic rheumatic arthritis. The head of the humerus is surrounded by a thin layer of bone, as if a band of osseous tissue had been placed around its lower part. There are also a few small new deposits of bone on the edge of the glenoid cavity, and a few on the ligaments around. Also similar deposits at the extremity of the acromion, the coracoid process, and clavicle; the latter having a smooth articular surface.

1100<sup>45</sup>. Dry preparation of the shoulder-joint, with considerable enlargement of the head of the humerus, from bony deposit around its lower border. There are also small osseous deposits upon acromion, coracoid process, and at the end of the clavicle. Chronic rheumatic arthritis.

1100<sup>60</sup>. Scapula and humerus; the glenoid cavity of the former is flattened, and reduced in surface, while the head of the latter is flattened and extended; probably the result of chronic arthritis.

1100<sup>80</sup>. Scapula and upper part of os humeri; the glenoid cavity of the former, and the greater part of the head of the latter, destroyed by disease of the joint. The inferior angle of the scapula is misshapen, and there is a congenital perforation of the part adjoining filled up by membrane.

- 1101<sup>50</sup>. Lower end of the humerus, which has been the subject of inflammation, the shaft being covered with new osseous deposit.

Case of Thomas F., aged 29. For history see preps. 1075<sup>20</sup> & 21.

1102. Longitudinal section of the humerus, showing the bone much thickened from the effects of periostitis.

- 1102<sup>50</sup>. Os humeri presenting extensive superficial necrosis of a large part of its surface.

Case of John A., aged 21, under Mr. Key in 1828. He was an intemperate young man, had had syphilis several times, and had taken much mercury. He was in an extremely cachectic state, and was covered with rupia; afterwards phagedænic sores came on the arms and legs. The whole of the soft parts of the right arm sloughed away, leaving the bone bare.

Drawing of arm affected with rupia, No. 146; gangrene of leg, No. 181; arm and fatty liver, No. 330.

1. Misc. Insp. Book, p. 61.

1103. Humerus presenting a beautiful example of necrosis of the shaft inclosed in a capsule of new bone. The sequestrum appears ready to be detached, and the bony case is spongy, and presents several cloacæ which communicated at one time with fistulous openings in the soft parts. The smooth and clean end of the sequestrum renders it more probable that the part was sawn through after death, than that the disease resulted from an inflammation following an amputation for diseased elbow-joint, which has been suggested.

- 1103<sup>25</sup>. Head of humerus extirpated by Mr. Key for necrosis of the bone, supposed to be scrofulous.

- 1103<sup>50</sup>. Upper half of the humerus affected with necrosis. The head of the bone, as well as several inches of the shaft below, contains a large cavity from which dead bone has been removed; the cavity opening externally both in front and behind. There is also loss of cartilage.

Case of Frederick B., aged 14, under Mr. Key in 1837. There were numerous orifices leading from surface to the diseased bone, from which some large pieces were removed about a month before death.

12. Misc. Insp. Book, p. 117.

1103<sup>75</sup>. Humerus showing the result of necrosis. The whole shaft appears to have died, leaving only a small portion of sequestrum seen at its upper part, the present shaft consisting altogether of new bone. This is a hollow capsule having several openings in it, through which the necrosed portions have made their exit. It is much distorted, being bent forwards and outwards at its upper part, where a portion of sequestrum still remains in process of escaping. The new bone is firmly attached to the articular ends of the old shaft.

1104. Sequestrum six inches long, from the humerus of a child, a patient of Mr. Key's.

1104<sup>25</sup>. A necrotic portion of the shaft of the humerus.

1104<sup>26</sup>. Necrotic portion of the shaft of the humerus, removed some time after amputation, on account of sloughing of the stump.

Case of William A., aged 19, under Mr. Birkett in 1853. See drawings 5<sup>20</sup> & 5<sup>22</sup>.

1104<sup>50</sup>. Sequestrum between four and five inches in length, removed from the humerus.

William B., aged 13, under Mr. Morgan in 1829.

1104<sup>60</sup>. Necrosis of the humerus, showing the upper third of the shaft separated from the epiphysis above.

From a strumous boy, aged 16, a private patient of Mr. Cock's in 1858. A year before, he received a blow on the arm; inflammation and suppuration followed; and afterwards a gradual shortening of the limb. At last, the bone protruded through the deltoid muscle; this was gradually pushed forwards and upwards, and after six months was removed by Mr. Cock. New bone had been thrown out, the joint was perfectly healthy, and the arm was one and a half inch shorter than its fellow.

1105. Numerous bones of a child affected with rickets. They are soft and vascular, and some appear to have been broken or bent.

Presented by Sir A. Cooper.

1105<sup>50</sup>. A section of the upper half of the humerus, showing a bony tumor growing from the side of the shaft, just beneath the head. It involves the shaft to the extent of four inches; and reaches to the centre of the medullary canal. The growth projects as a large tuberosity, and consists for the most part of dense compact bone; but at its lower part, the structure is fibrous.

Patient was a young man, a sailor, and the arm was amputated at the articulation by Mr. Key.

1105<sup>51</sup>. Dry section of same.

1106<sup>5</sup>. Section of humerus and clavicle, showing, the commencement of carcinomatous disease as distinct nodules in the head and shaft of the former, and considerable destruction of the latter from the same cause.

Case of Mary R., aged 32, who died after removal of cancer of the breast. For history, see prep. 1081<sup>45</sup>.

Record of Insp., No. 16. 1855.

1107. Section of upper part of the humerus, showing a large bony tumor, and equally surrounding the shaft; the latter, however, being quite lost in the new osseous tissue, so that no trace of it is now apparent. Its structure is very firm and compact, and the surface uniform, except in a few places where small holes are seen with smooth interiors. Around the bony mass was a fleshy growth (now removed), causing the tumor to be double the size at present seen. This was a firm fibrous structure occupied by numerous rounded foramina. It was styled by Sir A. Cooper, medullary exostosis.

Case of James F., aged 23, in the hospital in November, 1824, under Mr. Key. He died of hæmorrhage soon after the limb was removed. The inferior costa of scapula and coracoid process were found partly destroyed, and the kidneys and lungs are said to have been diseased, but whether from carcinomatous disease is doubtful.

Mr. Key's Record of Insp.

1107<sup>10</sup>. Dried section of same.

1107<sup>20</sup>. Section of humerus containing cancerous deposits near the head and lower part of shaft, at each of which places the bone is fractured.

1107<sup>22</sup>. Humerus having in the middle of its shaft a carcinomatous tumor growing from the periosteum, and also involving the whole thickness of the bone, whereby it has become fractured. There are some bony spiculæ running through it.

Amputated from a young woman, aged 19.

1107<sup>23</sup>. Dried section of a portion of the preceding.

1107<sup>25</sup>. Elbow-joint showing the effects of inflammation, resulting apparently from a carcinomatous tubercle formed in the bone above the internal condyle.

From a woman aged 50, who died of cancer of the breast and axilla.  
From Mr. Bryant's collection. MSS. p. 27.

1107<sup>30</sup>. Lower half of the right humerus fractured above the condyles, the cylinder of the bone having been previously absorbed by the development of a carcinomatous tumor within.

Case of Ruth B., aged 37, under Mr. Morgan in 1837 for cancer of the breast, and she died, fifteen months after its first appearance, of the same disease in the liver and lungs.

11. Misc. Insp. Book, p. 75.

1107<sup>35</sup>. Sections of the head of the humerus, showing fracture through the surgical neck united. It is rather nearer the head than usual. Removed two years after the accident.

Case of Samuel S., aged 70, who in 1836 fell upon the curb-stone. The arm was found quite useless. The roundness of the shoulder was lost, and a crepitus could be felt. The arm was fixed to his side, and after some weeks he regained in great measure the power of it. He survived two years. See drawing, 5<sup>70</sup>.

Presented by Mr. Blenkarne.

Guy's Hosp. Rep., Series I., vol. iv. p. 282.

1107<sup>37</sup>. Fracture of os humeri below the tubercles, with attempt at union. The patient was an old paralytic man, who lived many months after the accident.

From Mr. Bryant's collection.

1107<sup>40</sup>. Humerus showing a united fracture just below the neck.

1107<sup>50</sup>. Humerus showing a united fracture in the middle of the shaft. It is oblique, and the bone is much enlarged.

1107<sup>60</sup>. Humerus showing a united oblique fracture of the shaft. The bone at the seat of injury is much enlarged, as well as above and below, as if a periosteal inflammation had resulted from the injury.

1107<sup>80</sup>. Oblique fracture at the lower part of shaft of humerus united. There also appears to have been a longitudinal fracture through the internal condyle into the joint. This has well united.

1108. Humerus fractured at lower part of shaft, very badly united.

1109. Humerus fractured about the middle of shaft, and badly united.

1110. Humerus showing oblique fracture of shaft, tolerably well united.

1110<sup>50</sup>. Section of a humerus fractured at lower part of shaft, and very fairly united.

1110<sup>65</sup>. Humerus fractured at lower part of shaft.

1110<sup>75</sup>. Humerus which has been broken at its middle, and the parts subsequently kept in a position at right angles to one another. No union has taken place, but the ends of the bone have expanded, as if there had been an attempt to form a joint. The enlargement is due to a deposition of new bone around the lower end, and to a similar deposit upon the under surface of the upper, with which it is in contact. The extreme ends of the broken portions, how-



ever, are rough, and presenting in no place any smooth surface which would indicate that motion had existed. The medullary canal is seen to be still open.

From Mr. Howship's collection.

- 1110<sup>80</sup>. Fractured humerus exhibiting a false joint. The broken ends of the bone are held together by a tough ligamentous tissue, there being no appearance of capsule or synovial membrane.

Case of Thomas S., aged 56, who died of cirrhosis of the liver in June, 1855. He had received a fracture of the right humerus eight years before, and no union taking place, Mr. Cock sawed off the ends of the bones, and inserted pegs in order to keep them in contact. It was, however, without effect; no reparation occurred; and the patient did his best with the false joint which resulted.

Record of Insp., No. 120. 1855.

1111. Longitudinal section of humerus fractured in two places, the parts held together by ligamentous union.

Case of Peter P., a lunatic. See drawing, 5<sup>85</sup>.

Prep. of umbilical hernia from same case, 2506.

Old Museum-Book, No. 117.

- 1111<sup>50</sup>. Humerus fractured at its upper part and badly united; also much enlarged.

- 1111<sup>58</sup>. Humerus fractured obliquely and badly united, the ends riding over one another.

- 1111<sup>66</sup>. Humerus fractured in middle, badly united and much enlarged.

- 1111<sup>75</sup>. Humerus obliquely fractured and united at an angle. The upper piece appears to have also been split longitudinally.

- 1111<sup>84</sup>. Fractured humerus united, but it is not quite straight.

- 1111<sup>90</sup>. Humerus fractured at its lower part, but badly united, the ends considerably overlapping.

1112. Lower part of humerus, with fracture partly above and partly through the condyles; removed by operation.

1112<sup>50</sup>. Elbow-joint with recent ununited fracture through the humerus, separating the condyles only, and in one piece.

1112<sup>75</sup>. Compound fracture of lower end of humerus. The parts removed by excision.

Case of Ralph L., aged 50, admitted under Mr. Cock in February 1852. He had fallen from a height on to some brickwork, fracturing his thigh, and crushing his right elbow. The bones of the latter were much comminuted, and Mr. Cock enlarged the wound, removed eighteen fragments of bone, and cut off the sharp end of the humerus, as well as a portion of the ulna; about three inches of bones were thus removed. The patient made a tedious recovery. At the present time he follows his employment, and has good use of the arm.

1112<sup>80</sup>. Comminuted fracture of humerus just below the head. The latter part has been separated, and the shaft for several inches beneath has been split into several longitudinal fragments. These are all in process of firm union.

Case of William S., aged 72, under Mr. Birkett. Six months before his death he fractured his left arm.

Record of Insp., No. 40. 1856.

1112<sup>85</sup>. Lower end of humerus, showing fracture of the external condyle; a large portion of this has been lost, but the remnant is firmly united; the whole articular surface is carious.

Case of William F., aged 46, under Mr. Birkett in 1855. On March 5 his right elbow was crushed by a wheel passing over it; an attempt was made to save the limb, but considerable suppuration ensued; and on the following month some portions of bone, consisting of the external condyle, came away. As great constitutional disturbance subsequently came on, the arm was amputated on May 1st, two months after the accident.

1113. Elbow-joint with an old and partially-united fracture through the outer condyle. This is questionable, as there has evidently been chronic inflammation of the joint.

W. Wright, a patient of Mr. Key.

1113<sup>50</sup>. Fracture through the anatomical neck of the humerus, with some comminution.

Case of Sarah K., an elderly female under Mr. Callaway, senior, in 1831. She survived the accident a week.

10. Green Insp. Book, p. 138.

1114. Dislocation of the shoulder, and fracture of the humerus through its neck. The head of the bone is lodged against the superior part of the inferior costa of the scapula internally, the fractured surface being towards the scapula, while the rounded head is opposed to the ribs. The upper end of the shaft of the humerus is against the glenoid cavity, and attached to it by ligament.

Bequeathed to Sir A. Cooper, by will.

- 1114<sup>30</sup>. Parts of the shoulder, showing dislocation and fracture of the humerus. A new joint is forming below the neck of the scapula; the humerus has been comminuted just below the neck; but the union is complete, though recent.

Case of Mr. P., aged 63, who in the year 1839 fell down stairs, striking his shoulder, producing a fracture and dislocation at the same time. The head of the humerus could be felt beneath the end of the clavicle and the fractured end of bone on the under edge of glenoid cavity. The patient died three months afterwards, and the parts were removed. The humerus was found to have been broken into six pieces, but united. The glenoid cavity was empty and covered with cartilage, having the head of the bone beneath it.

Presented by Mr. Hingeston to Mr. Key.

For fuller particulars of case, see Guy's Hosp. Rep., Series 1, vol. v. p. 92.

#### RADIUS AND ULNA.

- 1114<sup>45</sup>. Bones of the forearm, with the humerus of both sides; the radius has been fractured.

- 1114<sup>60</sup>. Exostosis over the upper end of radius, the result of periostitis, from a female. The new growth arises altogether from the periosteum, and can be seen altogether separated from the shaft of the bone.

Drawing 5<sup>91</sup>. From Mr. Bryant's collection.

- 1114<sup>80</sup>. Lower end of radius and ulna considerably enlarged, from a growth of new bone, the result of ostitis. There is also some necrosis.

Case of John A., aged 65, a lighterman, under Mr. Key in 1841. Four years before, he fell and struck his hand. The wrist swelled, and

at the end of nine months it suppurated, and some dead bone was removed. Arm amputated, and man recovered.

18. Misc. Insp. Book, p. 51.

1115. Radius much enlarged at middle of shaft by deposition of new bone, the result of inflammation ; also slight caries.
1116. Radius showing a slight deposition of new bone in various parts of surface, the result of periostitis.
1117. Upper half of radius enlarged from a general ostitis. The surface is carious, and on one side necrotic.
- 1117<sup>10</sup>. Section of upper half of radius, showing a soft carcinomatous tumor growing from periosteum. The bone is becoming eroded.
- 1117<sup>20</sup>. Myeloid tumor of lower end of radius. It is two and a half inches in diameter, and is surrounded by a fibrous capsule continuous with the periosteum ; the bone itself being quite destroyed, but the wrist-joint entire. (Formerly called spina ventosa.)

The subject of the disease was A. F. K., aged 36, a medical man, residing in Norfolk. He had been in difficult circumstances, and came to the hospital in 1840 to be under the care of Mr. Key. He had a round softish tumor just above the wrist, and which he said had been growing six months ; the arm was amputated. The disease was considered to be malignant, and was styled "fungoid spina ventosa." The patient, who was naturally irritable, suffered great depression and anxiety, and died at the end of three weeks, of pyæmia. Drawing 5<sup>95</sup>.

17. Misc. Insp. Book, p. 266.

- 1117<sup>21</sup>. Dried section of same tumor.
- 1117<sup>30</sup>. Osteosarcoma of bones of forearm. A large growth composed of fibrous tissue, cartilage, and bone, is seen springing from the radius and ulna ; a part of the shaft of both these bones is destroyed, and the tumor itself is hollowed by softening in its centre, so that it is difficult to trace the exact original source of the disease.

M. G., aged 27, admitted under Mr. Birkett in Sept., 1855. Four years before this time she observed a swelling in the lower third of

left forearm; this was hard, and surface smooth, and it appeared as if both radius and ulna were involved. She refused to have the arm amputated, but returned to have the operation performed in May, 1856, and soon afterwards left the hospital convalescent. She was subsequently seized with hæmoptysis, and entered St. Bartholemew's Hospital, where she died in November of the same year. The post-mortem examination revealed no disease but in the lungs, and these contained a number of white, hard, bony tumors, which, when more minutely examined, were found to consist of a fibrous structure, surrounded by a bony cyst, whose composition was true osseous tissue.

See drawings of tumor with its sections, and lungs, No. 76, 77, 78, 79. Also wax model (pathological), 225. Prep. of lungs, 1750<sup>60</sup>.

For further particulars of case, see G. H. Rep., Series III., vol. iii. p. 336.

- 1117<sup>40</sup>. Section of lower extremities of ulna and radius, showing the styloid process of the former, united merely by ligamentous structure, apparently the result of fracture, as there is no appearance of disease about the joint.
- 1117<sup>60</sup>. Lower extremity of the humerus and the upper extremities of the ulna and radius, with considerable caries of the two former bones, but more especially of the articular surface of the ulna; being no doubt the sequel of an inflammation of the joint. Removed after death.
1118. Elbow-joint with fractured olecranon. The latter portion of bone is completely separated, and the broken end of the shaft is rounded and smooth, showing that the injury was old.
- 1118<sup>30</sup>. Radius and ulna, with united fracture of the former at the lower third.
- 1118<sup>50</sup>. Radius and ulna; the latter fractured at the lower part of the middle third, and united with the formation of a small exostosis extending towards the radius. This projection meets the ulna at a spot where there is a slight roughness produced by periosteal inflammation.

From the Dissecting-Room.

- 1118<sup>75</sup>. Radius and ulna fractured in the middle third, and well united.

- 1118<sup>80</sup>. Radius and ulna fractured and united.
- 1118<sup>81</sup>. Radius fractured about the middle and united, with considerable thickening of the part.
- 1118<sup>83</sup>. Radius fractured at its upper part, and united at an angle.
- 1118<sup>85</sup>. Radius fractured at middle of shaft and united, with some enlargement of the bone.
- 1118<sup>87</sup>. Radius fractured at middle of shaft and united, with much thickening of bone, a spicula of which projects outwards, forming an exostosis.
1119. Ulna fractured about the middle; the broken extremities united, and attached by bone to the radius.
- 1119<sup>20</sup>. Radius and ulna fractured a little below the middle, but only united by ligament, leaving a false joint. The ends of the bones overlap, and they are much enlarged; they are surrounded by a dense ligamentous capsule, in which there appears to have been a cavity, although the interior is not smooth. It existed for many years, and was removed after death from a patient of Mr. Morgan.

See casts 83 and 84.

- 1119<sup>25</sup>. Fracture of coronoid process of ulna, and a small portion of the internal condyle is chipped off at its posterior part. There are appearances of chronic inflammation about the joint, but this is probably the result of injury.
- 1119<sup>28</sup>. Compound fracture of olecranon.
- Case of a man, aged 55, admitted under Mr. Birkett on September 13, 1855, who had fallen on his elbow from a height; suppuration and sloughing ensued, and the arm was amputated in November. Recovery.
- 1119<sup>30</sup>. Fractured radius and ulna just above the wrist. The radius has united well, but the end of the shaft of the ulna has become incorporated with it, so that both bones appear equally connected with the articulating extremity below. The lower end of the ulna is almost detached, being united only by a slender portion of bone to the shaft; the

styloid process curves round, and forms an articulating surface with the outer side of the cuneiform bone.

1119<sup>32</sup>. Comminuted fractured radius, from fall on hand.

Case of Mr. Birkett.

1119<sup>35</sup>. Fracture of radius and ulna. Ligamentous union with false joint.

1119<sup>36</sup>. Old fracture of olecranon. There appears to have been a very perfect ligamentous union.

From Dissecting-Room. November 1854.

#### BONES OF THE HAND.

1119<sup>40</sup>. A malformed hand. The index and middle fingers are deficient, and a rather weak thumb is opposed to the ring and little fingers, which are considerably developed and congenitally united. A wet preparation.

See preps. 1119<sup>41</sup> and 1284<sup>80, 81</sup>.

From Dissecting-Room.

1119<sup>41</sup>. A similar specimen: the opposite limb from the same subject dissected and dried. The second and third metacarpal bones are seen with some digital tendons; the second bone is short and crooked. The feet were similarly affected.

1119<sup>60</sup>. The integuments of a hand having only the thumb and little finger; the other fingers, in consequence of injury, having been removed ten or fifteen years before death by B. Travers, Esq., senr.

See prep. 1119<sup>61</sup>, and cast 101.

Case of D. E., aged 42, who died under Dr. Addison's care, of phthisis, in 1836.

9. Misc. Insp. Book, p. 4.

1119<sup>61</sup>. Internal parts of the same, showing the alteration in the different tissues, which rendered the mutilated member still very efficient.

Dissected by Mr. Blackburn.

1119<sup>65</sup>. Portion of thumb, with the long flexor and extensor, and short extensor tendons, together with the nerves, torn off by machinery.

Case of Thomas F., aged 17, under Mr. B. Cooper, April, 1853. The wound healed well.

See drawing 30<sup>2</sup>.

1119<sup>60</sup>. Stump of finger, amputated by Mr. B. Cooper.

1120. Hand of a child, possessing a supernumerary finger.

1120<sup>10</sup>. Little finger, removed for deformity and disease, by Mr. Poland, August, 1855.

1120<sup>50</sup>. Small supernumerary finger, removed from the outer side of the little finger of a child; the bone is extremely small and imperfectly formed.

Presented by Mr. Stocker.

1121. Dried section of an osseo-cartilaginous tumor, removed from a finger.

1122. Enchondromatous tumor, from the first phalangeal bone of the little finger. There are numerous bony deposits within it.

1122<sup>50</sup>. A finger, from the phalanx of which an osteo-cartilaginous tumor as large as an egg has grown.

1123<sup>50</sup>. Hand and wrist, showing caries of the bones of the carpus.

1123<sup>75</sup>. Carpal bones ankylosed into one mass, and firmly united by bone to the radius.

1124. Bones of the carpus carious, and with the exception of the unciform bone, ankylosed to each other, and to two of the metacarpal bones.

1124<sup>8</sup>. Bones of the carpus ankylosed to one another, also to two metacarpal bones, and partly to the radius.

1124<sup>16</sup>. Bones of the carpus and metacarpus firmly united by ankylosis, and to the inferior extremities of the radius



and ulna. There is also considerable ulceration and displacement.

1124<sup>24</sup>. Radius, with carpal and metacarpal bones of the fore and middle fingers, united by ankylosis; probably from a female.

1124<sup>28</sup>. Necrosis of a middle digital phalanx, the joints and theca free, the tendon granulating.

1124<sup>29</sup>. Section of a stiff finger; soft ankylosis, and the remains of old necrosis.

1124<sup>30</sup>. Middle joint of a finger destroyed by ulceration; necrosis and sloughing of tendon have left a large vascular sinus.

Mr. Hilton.

1124<sup>32</sup>. A finger, of which the second phalangeal bone is affected with caries, probably scrofulous, producing a large external ulceration. Injected.

1124<sup>35</sup>. Two necrotic phalangeal bones, which exfoliated "after weeks of suffering."

From Mr. Bryant's collection.

1124<sup>38</sup>. Finger, showing the second phalangeal bone carious, arising probably from scrofula; this has led to a fungating ulcer on the surface.

1124<sup>41</sup>. Thumb, removed on account of caries of the last phalangeal bone; there is a large fungating ulcer around it.

1124<sup>44</sup>. Section of a thumb involved in a large tumor, which has grown around its extremity. The last phalanx is almost destroyed by the disease, which springs also in part from the phalanx below. It appears to be carcinoma. Amputated by Mr. Key.

See drawing No. 6.

1124<sup>45</sup>. Section of the thumb of a man affected with carcinomatous disease. The phalangeal extremity was removed some

time before, but the disease returned, and amputation was performed by Mr. Key.

See prep. 1545<sup>60</sup>.

1124<sup>46</sup>. Fibrous tumor removed from the index finger.

Case of Thomas H., aged 52, under the care of Mr. Callaway, junr, in 1854. Fourteen years before he injured his hand; a swelling appeared, which slowly increased, and of late rapidly. When removed it was the size of an orange.

See drawing 29<sup>20, 21</sup>.

1124<sup>50</sup>. Finger, presenting a large enchondromatous tumor growing from the metacarpal bone; removed by Mr. Key.

See drawing No. 30, and cast No. 111.

1124<sup>55</sup>. Enchondroma, with a bony shell; removed from the finger by Mr. Cock in 1854.

#### PELVIS.

1124<sup>65</sup>. A female pelvis of very small dimensions, being contracted in all its measurements.

Case of Mrs. E. A., aged 32, who was under Dr. Ashwell's care in 1835, and who died while under the operation of extraction of a foetus.

See drawing of uterus 490, and cast 34<sup>6</sup>.

For particulars of case, see Guy's Hosp. Rep. Series I., vol. i. p. 328.

1124<sup>80</sup>. A portion of the os innominatum, in which there is a remarkable deficiency of bony matter, both in the cancelli and shell; probably the result of caries.

1124<sup>90</sup>. Pelvis distorted by mollities ossium, and presenting the usual peculiarities produced by this disease; the acetabula have been thrust upwards, the spine downwards, and the pubes forward; the opening of the pelvis is thus much narrowed and of a heart shape, the pubes being rostrated.

From a female in Dissecting-Room, in 1837. She was below the ordinary stature; she had been very active until four years before, when her strength began to fail her; she afterwards complained of great pain in the lower, and subsequently in the upper extremities. During the last two years she had been confined to her bed, and was almost helpless

The urine during this time was said to be very thick and offensive. All the bones were more or less affected, some being so soft that they could be cut with a knife, and resembling bones which had been placed in acid. The spine had a lateral curvature, the ribs were bent, and the long bones were easily broken. Fractures of the femur and leg were also found.

See preps. of femur 1184 <sup>74, 75</sup>; and tibia and fibula 1212<sup>82</sup>, and drawing No. 8. For further particulars of history, see 2. Note-Book p. 33; and analysis of bones, Guy's Hosp. Rep., Series L, vol iv. p. 191.

1125. Male pelvis, showing ankylosis (synostosis) of the left sacro-iliac synchondrosis.
- 1125<sup>50</sup>. Articulated male pelvis with the ossa femorum, showing ankylosis of the sacrum to os innominatum on the right side; an obliquity of the pelvis is thus produced. At the point of union between the sacrum and os innominatum there is much loss of substance of both bones, and thus the former is more approximated to the right side than natural; the right half of the pelvis is also smaller than the left, and its walls are more straight. If the crests of the ilia be placed on a level, it will be seen that the tuberosity of the right ischium is above its fellow; consequently the os femoris on that side is higher than the other. The right os femoris is also slightly curved at its upper part, and bears the marks of recent periostitis, and below commencing necrosis.
1126. Sacrum and right os innominatum, having the sacro-iliac symphysis ankylosed.
1127. Male pelvis, having both sacro-iliac symphyses united. There are appearances indicating the existence of a slight general inflammation, affecting the edge of the bones, as the ischia and other parts are covered with small excrescences.
1128. Small male pelvis, having both sacro-iliac symphyses united; also numerous small bony excrescences or exostoses are seen along the outer labia of the ilia, the brims of the acetabula, the symphysis pubis, and the rami of the pubes

and ischia. This, and the three following specimens probably show the effects of chronic rheumatic arthritis.

- 1128<sup>25</sup>. Male pelvis, showing ankylosis of both sacro-iliac articulations, as well as of the symphysis pubis; also the last lumbar vertebra to the sacrum. It appears as if all the borders of the bones had suffered from osteitis, as there is an exudation of new osseous matter projecting from the rim of pubes and ischium, as well as adjoining borders of ilium; these might be called exostoses.
- 1128<sup>50</sup>. Portion of os innominatum of left side, with considerable exostosis about the foramen thyroideum; the irregularity of the bone might suggest a fracture.
1129. Large male pelvis having the left sacro-iliac synchondrosis united, and the right partially so. It presents also some bony excrescences or exostoses on its surface.
- 1129<sup>20</sup>. A deformed female pelvis, from an aged person, evidently resulting from a softening of the bones; the alteration of form is such as is generally met with in this disease. The acetabula are thrust upwards, and the pubes and ischia bent inwards; the promontory of sacrum, with lower lumbar vertebræ, is pushed downwards, and the sacrum is bent in its middle. The brim of the pelvis is much contracted, and is disposed to a heart shape. All the bones are thin, but especially the ilia which are diaphanous.
- 1129<sup>60</sup>. A dried preparation of a remarkably contracted pelvis, arising from mollities ossium. The bodies of the pubic bones are bent inwards, and the rami towards each other. The sacrum and lumbar vertebræ are forced downwards towards the front part of the pelvis, and this seems due to the yieldings of the ossa ilia on each side; these being bent at a right angle in their middle portions, the inclination being more towards the right side.

Presented by Mr Bransby Cooper.

1130. Ossa pubis ankylosed.

1131. Bones of hip-joint affected with chronic rheumatic arthritis (*malum coxae senile*) in early stage. The acetabulum is widened by the deposition of new bone upon its edge, and the head of the femur is similarly affected.

From Dissecting-Room.

- 1131<sup>33</sup>. Bones of hip-joint, showing results of chronic rheumatic arthritis. The head of the femur is enlarged in surface by the deposition of new bone to its margin, and at the same time is diminished in thickness; the neck is also much shortened, and the head is thus thrown close upon the trochanters. There is also a deposition of bone around the acetabulum, which makes its surface larger and less deep, and thus corresponds in size and shape to the head of the femur. There is also an excrescence of bone on the crest of the ilium. The articular cartilages are partially removed from the ends of the bone, and the projecting parts are eburnated.

- 1131<sup>50</sup>. Os innominatum and part of os femoris, showing chronic rheumatic arthritis in a more marked degree than in the previous cases. The head of the femur has been changed into a large irregular flattened mass of bone, which, from the absorption of the neck, is placed close upon the trochanter; it appears almost like a growth from this process. The acetabulum has a corresponding surface, being very much flattened, and more than twice its natural diameter. The bone deposited around is in large masses, some having only slight ligamentous union with the acetabulum. The articular surfaces are not uniform, but the projecting parts which come in contact are smooth and polished. There is also a slight disposition to bony excrescences on other parts of the os innominatum.

From a male aged 50; from the Dissecting-Room.

- 1131<sup>66</sup>. Os innominatum of the right side, and upper part of os femoris, with the acetabulum and head of femur greatly enlarged with ossific deposit, arising from chronic rheumatic arthritis. There is a deposition of new bone to a

slight extent around the acetabulum and the head of the femur. The articular cartilage is removed, and the surface of the bones is indurated and polished.

1132. Left os innominatum, of which the cavity of the acetabulum is increased, and the brim elevated by chronic rheumatic disease of the hip-joint. The head of the femur, enlarged by the disease, accompanies it. The articular cartilage appears to have been removed from both bones, and in its stead the surfaces are polished and indurated.

1132<sup>33</sup>. Left os innominatum of considerably advanced age, probably from the church-yard. The depth of the acetabulum is very remarkable, owing to a deposition of bone around its edge. An aperture remains at the original notch of the cavity.

Presented by Mr. Goddard.

1132<sup>50</sup>. Bones of pelvis and lower extremity affected with spongy hypertrophy. All the bones are much enlarged and heavy, but the structure appears less compact than in health. In the section of the tibia the external dense portion is wanting, being instead slightly porous; the sponginess increases towards the middle, where the structure is cancellous, the hollow medullary cavity being almost obliterated. The ossa innominata are well developed and of large size; the sacrum is bent at a right angle in its middle; the ossa femorum enlarged and curved forwards; the tibiæ are flattened from side to side, and the fibula is ankylosed to the lower part of the tibia.

1132<sup>52</sup>. The bony portion of a large enchondromatous tumor which grew from the os innominatum. A large coral-like mass of bone is seen projecting from the ilium within the pelvis; also another mass is seen growing upwards from the crest.

Case of John C., aged 26, under Mr. Morgan in 1845. He had a large tumor occupying the pelvis on right side, reaching to the median line in front, and to the liver above, and pushing the colon before it. It was found to grow from the iliac bones, and weighed, on removal,

twenty-two pounds; it was of three years' growth. It consisted almost entirely of cartilage, and contained cysts in which were several pints of a ropy tenacious fluid. The parts near the ilium contained bone.

1. New Insp. Book, p. 68.

1132<sup>53</sup>. A wet slice of the growth, showing the cartilaginous tubera with masses of bone in one part.

1132<sup>54</sup>. Ossa innominata presenting numerous excavations and hollows, apparently produced by cancer. The appearance is that of the osseous tissue eaten away by the development of cancer in its cancellous structure; a morbid process known as cancerous erosion or osteolyosis.

See similar disease in cranium, No's. 1081<sup>40</sup>, 1081<sup>74</sup>, &c.

Presented by Mr. Hilton.

1132<sup>58</sup>. Os innominatum and upper part of femur excavated by carcinomatous disease. The head is broken off from the shaft.

See drawing 10<sup>60</sup>.

1132<sup>66</sup>. A large spongy exostosis on the dorsum ilii; probably the bony portion of a carcinomatous or enchondromatous tumor.

1133. Right os innominatum fractured in various places; the ilium fissured in various directions, also the body of pubes and rami of pubes and ischia.

1134. Bones of pelvis fractured by the fall of a wall. The body and rami of pubes and ischia are broken, as well as the ilium. The sacrum is also fractured diagonally through its middle.

1134<sup>8</sup>. Severe fracture of pelvis. The body and rami of both pubes and ischia are broken; and the sacro-iliac synchondroses are separated.

1134<sup>16</sup>. Sacrum and right os innominatum of a male. There appears to have been a fracture just within the synchondroses.

droses. The body and ramus of pubes have also been fractured, but again united; the broken ends overlap, but are firm.

1134<sup>82</sup>. Right os innominatum, with united fracture of body of os pubis.

1134<sup>48</sup>. Pelvis showing a great irregularity in the left pubic bone, as if a fracture had taken place through its body and ramus. There is also a great deposition of new bone about the symphysis, and also about the sacro-iliac synchondroses.

1134<sup>68</sup>. Os innominatum, which has probably been the subject of fracture at the junction of the rami of ischia and pubes. There is much enlargement of bone at this part, and bony spiculæ are seen running from this spot across the thyroid foramen.

#### OS FEMORIS.

1134<sup>74</sup>. Two portions of the shaft of the femur greatly attenuated. The outer shell is thin, and the medullary canal proportionably enlarged.

From a female who suffered from mollities ossium. For history, see prep. 1124<sup>00</sup>. Drawing of bone, No. 8.

2. Note-Book, p. 33.

1134<sup>75</sup>. Another section of same bone, showing the excessive amount of yellowish-brown jelly-like medulla.

1134<sup>86</sup>. Os femoris somewhat distorted, and its lower part considerably enlarged; supposed to have been from rickets.

1134<sup>90</sup>. Os femoris, distorted from the effects of rickets, from a female aged sixty-four.

See preps. 1000<sup>25</sup> and 1214<sup>20</sup>.



1135<sup>40</sup>. The right os femoris, showing considerable distortion from rickets. The bone is much bent backwards on itself, or curved forward and outward.

See fibula, prep. 1213<sup>72</sup>.

1135<sup>45</sup>. Femur of an old person, flattened and bent outward.

1135<sup>48</sup>. Femur flattened and curved outward.

1135<sup>50</sup>. Two ossa femorum, both from the left side, and a section of a third, showing considerable distortion from rickets. There is a remarkable flattening of one bone, through which a section has been made.

1135<sup>75</sup>. Left half of the pelvis, with the femur, tibia, and fibula, showing the gibbous state of the bones of the thigh and leg, the effects of rachitis.

Cast, No. 113. From Langstaff's Museum.

1135<sup>85</sup>. Bones of leg, showing the femur much curved forward, and the tibia and fibula also much bent, the result of rickets.

1136. Section of the head and neck of the os femoris, showing absorption of the cancelli without depression of the neck.

1137. Section of the head and neck of the os femoris in an old subject, showing absorption of the cancelli without depression of the neck.

1138. Section of the head and neck of an old thigh-bone, without depression of the neck.

1139. Section of the head and neck of an old thigh-bone, showing the direction of the bony fibres in the cancellated structure giving support to the bone.

1139<sup>50</sup>. The right os femoris of an adult, said to be a Caffre; it is of moderate size and good form, but its density is extremely great.

Presented by Mr. J. Malleum.

1140. Neck of a thigh-bone of unusual length; the shaft of the bone remarkably spongy, and differing but little from the cancellated structure, which is more than usually close.
1141. Section of the head and neck of the os femoris in advanced age. The bone softened; the neck depressed and shortened.
1142. Section of the head of the thigh-bone sunk from age, and with the neck of the bone very much absorbed.
1143. Upper part of an old thigh-bone, of which the neck is shortened, and the head very remarkably depressed.
1144. Head of a thigh-bone altered by chronic rheumatic arthritis.
1145. Upper portion of a thigh-bone, of which the head is enlarged and deformed, apparently from chronic rheumatic arthritis.
1146. Head of femur much enlarged, and neck shortened by chronic rheumatic arthritis.
- 1146<sup>32</sup>. Section of the upper part of the thigh-bone, of which the head and neck are much enlarged, and deformed by rheumatic arthritis. The articular cartilage diseased. The patient was supposed to have fractured the cervix femoris.

Presented by Mr. T. Hardy, jun.

- 1146<sup>66</sup>. A section, the counterpart of the preceding.
1147. Section of the head of a thigh-bone enlarged by chronic rheumatic arthritis. The cartilage is absorbed, and the neck of the bone depressed and nearly absorbed.
1148. Section of the head of a thigh-bone affected with chronic rheumatic arthritis. Articular cartilage destroyed, and the surface of bone polished. The new osseous deposit is seen to be formed as a distinct mass upon the old bone.

1149. Section of the head of a thigh-bone, enlarged by ossific deposit round its junction with the neck, from chronic rheumatic arthritis. The cartilage absorbed, and the surface polished. This also shows how the new bone is deposited on the old.
1150. Two sections of the head of the thigh-bone enlarged by chronic rheumatic arthritis. Articular surface eburnated.
1151. Head of femur very much enlarged by chronic rheumatic arthritis. The cartilage is destroyed, and articular surface eburnated.
- 1151<sup>60</sup>. Upper part of left thigh-bone, having a large exostosis with a narrow attachment growing from between the trochanters. This is of an irregular square form, and has a reticular or almost hollow interior. It has the appearance of being perforated as by a vessel.
- 1151<sup>75</sup>. Lamellar exostosis in the middle of the femur anteriorly and internally. The bone is large and thick.
- Presented by Dr. Stuart of the Medical College, Philadelphia. 1839.
- 1151<sup>76</sup>. Lamellar exostosis on the middle of the femur anteriorly and externally.
- 1151<sup>78</sup>. A similar exostosis, anteriorly and internally.
- 1151<sup>79</sup>. Another specimen on the lower portion of the upper third of the thigh anteriorly.
1152. Exostosis on the femur at the origin of the short head of the biceps muscle.
- 1152<sup>5</sup>. Exostosis growing from the femur in the situation of the trochanter minor. It ascended beneath Poupart's ligament, and could be felt through the skin and abdominal muscles. There was a ligamentous union about the centre of the exostosis, and a bursa at the apex.

From a lad about eighteen years of age in Dissecting-Room. Mr. Birkett.

1152<sup>15</sup>. A section of the inferior half of the femur, having a narrow lengthened exostosis at the insertion of the adductor magnus. It has a remarkable correspondence to the supracondyloid process sometimes met with in the humerus.

See prep. 1100<sup>15</sup>.

1152<sup>16</sup>. Lower half of the os femoris, with an exostosis at the origin of the short head of the biceps.

1152<sup>32</sup>. Small exostosis from near the insertion of the adductor magnus of the thigh. It has cartilage on its exterior.

Removed from a young lady, 20 years of age, under Mr. B. Cooper.

1152<sup>48</sup>. An exostosis having a cartilaginous surface of varying thickness, from near the insertion of the adductor magnus muscle in a lady 17 years of age. The disease did not return.

Removed by Mr. Parrot of Clapham.

1152<sup>64</sup>. Os femoris, with a remarkable protuberance a little above the inner condyle. The shell of the bone at this part is of exceeding tenuity, scarcely exceeding that of paper.

1152<sup>68</sup>. A somewhat similar specimen, but the bone is more dense.

1152<sup>72</sup>. Left os femoris, showing the middle third thickened by inflammation. There is some appearance of fracture.

1152<sup>76</sup>. Right os femoris, the upper portion greatly thickened by inflammation.

1152<sup>80</sup>. Left os femoris, of which the shaft is greatly and uniformly thickened by periosteal inflammation. Its density is very considerable.

1152<sup>85</sup>. Longitudinal section of lower half of femur, showing the effects of osteitis. The shaft becomes gradually thicker and more dense, as far as the place where it has been sawn

through. Here the medullary cavity is entirely obliterated (Sclerosis.)

Case of Charles J., aged 37, under Mr. Cock in 1856. The inflammation of the bone resulted from an injury. After several months the joint became affected, and it was necessary to amputate. A small sequestrum came from upper part.

1153. Longitudinal section of the os femoris, showing the shell of the bone much thickened, and of very dense structure from periosteal inflammation.

1153<sup>25</sup>. Longitudinal section of femur much enlarged from new growth of bone from periosteal inflammation. The outline of the shaft is well seen in many places.

1153<sup>26</sup>. Dried section of same.

1155<sup>10</sup>. Piece of the external condyle of the right femur removed by the trephine for abscess in the bone.

Case of Frank H., aged 18, under Mr. Birkett in March 1854. He was a delicate lad, and six months before began to feel pain around the knee, and for six weeks there had been swelling. He suffered intense pain and great constitutional distress, and had no rest. The bone was trephined, and two drams of pus evacuated, with instant relief. The boy's health rapidly improved, and he left the hospital quite well.

1156. Upper part of thigh-bone, showing the head and neck almost destroyed by disease of the hip-joint. The head has quite disappeared, and the neck merely remains as a short pointed process projecting from the trochanter.

See cast 143.

1157<sup>50</sup>. Section of lower half of femur, showing the result of necrosis. Portions of sequestrum are seen within the shaft, and there is much new bone without. Several sinuses lead down to it, and the joint is involved.

See drawing No. 18. Amputated by Mr. Key.

1157<sup>70</sup>. Necrosis about trochanter major.

1157<sup>71</sup>. Counterpart of the preceding, dried.

1157<sup>80</sup>. Partial necrosis of the end of the femur. Loose portions of the shaft are seen reaching to the epiphysis. Fistulous openings on each side.

1158. Several portions of bone exhibiting the effects of inflammation, sequestra, &c. A portion of necrosed femur, and ends of radius and ulna much thickened by periostitis.

1158<sup>8</sup>. Amputated end of a thigh-bone, showing a coating of new osseous tissue on the surface.

Case of James H., aged 33, whose leg was amputated by Mr. Morgan in 1842, for osteosarcoma of the tibia of three years' growth. He died two weeks after the operation, of similar disease in the lungs.

19. Misc. Insp. Book, p. 86.

1158<sup>12</sup>. Amputated end of thigh-bone, showing commencing necrosis and deposit of new bone above it.

1158<sup>16</sup>. Amputated end of thigh-bone, showing necrosis and a considerable deposit of new bone, three weeks after removal of the limb in an adult.

From Mr. Howship's collection.

1158<sup>24</sup>. Amputated end of femur, showing commencing necrosis and considerable deposit of new bone around it.

Case of Joseph O., aged 36, whose limb was removed for diseased knee-joint by Mr. B. Cooper in 1842. He died of pyæmia eight weeks afterwards. The stump was partially healed, but the bone projected for half an inch. See drawing 7<sup>56</sup> & 57.

19. Misc. Insp. Book, p. 92.

1158<sup>25</sup>. A dried section of preceding.

1158<sup>32</sup>. A portion of femur after amputation. The lower end is seen to be dead, and undergoing the process of removal.

1158<sup>35</sup>. End of amputated femur, showing necrosis, a new layer of bone on the surface, and an abscess within the medulla.

Case of John B., aged 55, under Mr. Key in 1842. He died six weeks after the operation.

19. Misc. Insp. Book, p. 69.

- 1158<sup>36</sup>. Corresponding section of same.
- 1158<sup>40</sup>. End of amputated thigh-bone, showing the rounded end, and the closed medullary cavity two years after operation.

Case of Mary Ann F., aged 35, who died in the hospital in 1840.  
See stump showing bulbous nerves, No. 1620<sup>26</sup>.

17. Misc. Insp. Book, p. 94.

- 1158<sup>41</sup>. Corresponding section, dried.
- 1158<sup>50</sup>. An old thigh-stump, showing the rounded end of the bone, and upon the exterior an exostosis.

From Mr. Howship's collection.

- 1158<sup>64</sup>. Section of thigh-bone after amputation, showing a shell of new bone extending upwards upon the shaft for three inches.

Case of John J., aged 12, whose leg was amputated six weeks before for diseased knee-joint, by Mr. Key in 1831.

2. Misc. Insp. Book, p. 89.

- 1158<sup>70</sup>. Amputated end of thigh-bone removed several months after operation. The end of the shaft through its entire thickness, and to the extent of three-quarters of an inch, is becoming necrosed, and to a greater extent on the inner surface. New bone is seen on the periosteum to the extent of three inches, and this terminates abruptly immediately above the necrosed portion, at the line where the whole thickness of bone is decaying. The necrosed portion, if it had naturally come away, would have resembled the following specimens, consisting of a shell of the interior of the shaft, with a small portion composed of its entire thickness.

Mr. Hilton.

1159. Sequestrum five inches long, detached from the femur after amputation.
- 1159<sup>50</sup>. Large sequestrum from the thigh of a man, which separated about six months after amputation. The leg was removed by Mr. B. Cooper in 1838, for epithelial cancer. See prep. 1638<sup>50</sup>.

1160. Sequestrum six inches long, from an amputated femur.

1160<sup>16</sup>. Sequestrum from femur three inches long, after amputation.

1160<sup>17</sup>. Sequestrum four inches long, removed some months after amputation. The extreme end consists of the whole thickness of the bone, but the remainder is a necrosed portion which has separated from the new bone around, and this only on one side.

Case of Henry W., aged 44, under Mr. Hilton in October, 1856, for compound dislocation of astragalus. Suppuration followed, and secondary amputation. The stump sloughed, and the bone became exposed. Eventually cured.

1160<sup>18</sup>. A somewhat similar portion of bone removed from a stump.

Case of Thomas W., aged 48, under Mr. Birkett in 1857. The leg was amputated on account of inveterate ulcers, which had followed erysipelas. The stump sloughed, and the bone exposed, which was removed with forceps about ten weeks afterwards. Recovered.

1160<sup>24</sup>. Necrosis of shaft of femur detached from the ends, which are surrounded by large spongy masses of new bone. The patella is attached to one end of this. The relation of the parts is not quite evident.

Case of John N., aged 14, under Mr. Morgan in 1843. He had always had shortening of one leg, and this he struck. Inflammation of bone and abscesses followed, and death took place fourteen months afterwards.

19. Misc. Insp. Book, p. 202.

1160<sup>30</sup>. The lower end of the femur, showing necrosis of the shaft and condyles. The upper end of tibia was also implicated.

Case of Ann P., aged 32, under Mr. Birkett in 1856. Sixteen years before, she struck her right leg, and was in hospital under Mr. Morgan, when some portions of dead bone were removed from the thigh just above the knee. She recovered, but two years afterwards another portion of bone came away. She after this continued at her employment as a washerwoman, and always had weakness and pain in the limb. The last three weeks the joint became involved, with much constitutional disturbance, and the thigh was amputated. Recovered.



- 1160<sup>32</sup>. Fractured femur, showing the ends of bone undergoing necrosis. Around the upper part there is a deposition of some new bone.

From a lad under Mr. B. Cooper, in whom no repair took place after fracture, but suppuration and sinuses. See drawing No. 14.

- 1160<sup>35</sup>. A large portion of the femur of a child, which separated spontaneously from the upper part from necrosis. A considerable quantity of new bone is formed, and several portions of the old shaft are seen detached within.

Case of Elizabeth S., aged 12, under Mr. Birkett in 1855. She fell down stairs and struck her left hip. Abscess followed, with sinuses; dead bone came away, and two months afterwards the shaft gave way leaving the head of bone healthy, with the trochanters. As no union took place, the thigh was amputated at the seat of fracture, and the child recovered.

- 1160<sup>36</sup>. End of stump of femur removed by the saw, on account of necrosis; the amputated end of the shaft is seen surrounded by new bone, and the medullary-osseous plug in the centre.

Case of Ann P., aged 20, whose leg was amputated by Mr. Birkett in 1856, for recurrent fibroid tumor.

See prep. 1376<sup>30</sup> and drawing 37<sup>12</sup>.

- 1160<sup>48</sup>. Lower part of os femoris, with tibia and patella, showing necrosis of the bones; the epiphyses are also included in the disease. The tibia presents almost entirely a new bone, consisting of a shell from which the upper part of the old shaft has been removed; in the lower part there is a loose sequestrum. It appears as if the whole extremity would at length have become repaired, and the knee-joint ankylosed; the epiphyses themselves appear even renewed.

- 1160<sup>50</sup>. Myeloid disease of the lower end of the femur (formerly called spina ventosa). It consists at present merely of the sac composing the tumor, the contents having been removed; a small quantity, however, of the soft material, still adherent to the walls, was sufficient to give the peculiar

microscopic characters of this disease. The shaft of the femur ends by a jagged termination within the sac, and from its sides the periosteum leaves the bone, and spreads out on all sides, to form the inclosure; and below, on the lower part of the sac, are the cartilages of the condyles, quite healthy. On one side is a thin layer of new bone. The tumor measured five inches in diameter.

Presented by Mr. Key.

- 1160<sup>54</sup>. A carcinomatous tumor affecting the trochanter minor of os femoris.

See carcinoma of vertebræ from same case, No. 1028<sup>60</sup>.

- 1160<sup>56</sup>. Lateral half of the bones of the knee-joint partially hollowed from carcinomatous disease.

Case of Isabella H., aged 45, under Mr. Key in 1841. Four years before, she struck her knee; and for three years had suffered with a swelling. A large tumor surrounded the knee, and involved the joint; the limb was amputated.

18. Misc. Insp. Book, p. 49.

- 1160<sup>60</sup>. Lower half of femur, showing condyles absorbed by carcinomatous disease. At the back part of shaft is a mass of new bone.

- 1160<sup>64</sup>. Section of lower half of os femoris affected with mollities ossium. The earthy matter is almost wholly removed, and the bone is expanded, as if by some soft material growing from within. A dry preparation.

From a patient of Mr. Bryant's. When first seen, this man had the bones of his legs bent and broken; clavicles, &c., also bent. The bones could be cut with a knife.

1. Note-Book, p. 48<sup>a</sup>.

- 1160<sup>65</sup>. A counterpart of the preceding. Wet.

- 1160<sup>70</sup>. Section of lower part of femur, having a large spongy osseous tumor growing from its outer surface; the shaft of the bone is entire. It is probably the osseous part of a cartilaginous or osteosarcomatous tumor.

1160<sup>86</sup>. A large enchondromatous tumor affecting the upper part of the thigh-bone; it reaches as high as the neck, and involves the trochanters as well as a large part of the shaft. It not only grows around the bone, but has quite destroyed its form, so that only a few portions of the shaft are seen in the midst of it. It is made up almost wholly of nodules of cartilage, with an intervening fibrous tissue. There are also numerous small cysts throughout it, and thus it constitutes the form of disease known as cysto-enchondroma.

Removed after death, from a patient of Mr. Key.

1160<sup>91</sup>. Upper part of a thigh-bone having a large coral-like mass, as large as a child's head, growing from its surface. It proceeds principally from the front of the shaft, and reaches as high as the head of the bone. The tumor is amorphous and spongy, and appears to be the osseous portion of an osteosarcomatous growth. At the lower part of the shaft there is a little new bone.

Case of William B., aged 43, who was under Mr. B. Cooper in 1841.

18. Misc. Insp. Book, p. 139.

1160<sup>92</sup>. Bones of the knee-joint, from the same case, showing a number of exostoses growing from them, especially on inner side. On the inner condyle there are numerous exostoses projecting upwards, and which, together, form a large mass of new bone at this part. On the inner side of the head of the tibia there is in like manner a large osseous growth or exostosis, and the head of the fibula is also enlarged.

1161. Cancerous tubercle in the medullary structure of the upper part of the femur, from a patient who died of cancer of the breast. (Cast 283.) She had complained of pains in the thigh.

From a patient of Mr. Key.

1162<sup>12</sup>. Upper half of the os femoris, from a female who had carci-

nomatous disease of the mamma. The interior of the shaft of the bone is occupied by several rounded cancerous tubercles. About two inches below the neck, the whole circumference of the bone has been completely removed; separations of the upper and lower portions of the bone have been thus produced. The surface of the neck of the os femoris, for two inches beneath the neck, has its periosteal investment much thickened, and universally affected with malignant disease. The bone itself at this part is similarly diseased, though in a slighter degree.

Presented by Dr. Hodgkin.

1162<sup>24</sup>. A middle portion of the os femoris, from the same patient as the preceding specimen. The internal surface of the shaft of the bone is similarly affected; for the space of two inches a circle of the bone is entirely involved in the disease; the greater part of it is destroyed, and an almost complete separation is the consequence.

1162<sup>30</sup>. Myeloid disease of the lower part of the femur. The ends of the shaft and condyles are seen to be destroyed, and their place occupied by a growth somewhat resembling the spleen in structure—there being a number of fibrous processes passing in all directions through it, like the trabeculæ of this organ, and in the midst there is a red pulp. The latter is composed of myeloid matter contained in a matrix of fibrous tissue, which proceeds in great measure from a layer of periosteum passing off from the end of the bone. It is inclosed in a membranous sac which proceeds from the shaft at the point where it terminates in the tumor, and the cartilages of the joint are observed to be sound on the opposite side.

Case of James D., aged 25, a seaman admitted under Mr. Cock's care in November, 1854. He had struck his knee two years before, and the swelling had ensued in consequence. The tumor occupied the position of the condyles of the left thigh, and measured twenty-two inches in circumference; the section of the tumor after removal, was five inches in diameter. The man quite recovered.

See drawing 9<sup>56</sup>.

- 1162<sup>31</sup>. Myeloid disease of the lower part of the femur. A tumor composed of soft myeloid matter inclosed in a membranous sac, occupies the place of the condyles. The sac is formed from the periosteum which passes off from the jagged end of the shaft, and has the cartilages of the joint perfect on its under surface. There is no fibrous reticulum, as in 1162<sup>30</sup>.

Case of Mary Ann M., aged 33, was under Mr. Cock in 1856. A year before, when four months advanced in pregnancy, she fell and struck her right knee. It swelled, and she was unable ever after to walk upon it; she had subsequently miscarried. The limb was removed, and the tumor increased five inches in diameter. Drawing 9<sup>67</sup>.

- 1162<sup>32</sup>. Myeloid disease affecting the lower part of the femur. It exactly resembles No. 1162<sup>30</sup>, the description of which will serve for this, the only peculiarity being that the epiphysis in the present case is entirely unaffected by the disease. These specimens might be styled fibro-myeloid, in distinction to the simple myeloid of the preceding case.

Case of Joseph S., aged 15, was under Mr. Hilton's care in 1857. He was suffering from a tumor which affected the condyles of the left femur; this prevented him walking, but the joint was unaffected. He had observed the swelling for five months, but had had no pain. A few days after the amputation, pyæmia came on, with suppuration in the stump and pelvis, and the lad gradually sank. On post-mortem examination, no disease was found in the bones or other part of the body, except a fatty liver and the pelvic abscesses. Drawing 9<sup>58</sup>.

- 1162<sup>36</sup>. Part of the head and neck of the os femoris, fractured in consequence of the development of defined carcinomatous tubercles in the cancelli. There is extravasated blood mixed with it.

Presented by Mr. J. Babington.

- 1162<sup>40</sup>. Section of lower extremity of femur, the interior of which is affected by carcinomatous disease. The growth has destroyed one condyle, and is making its way externally; the disease extends some distance up the shaft. Injected.

Amputated by Mr. B. Cooper.

1162<sup>45</sup>. The lower end of the femur, with the parts of the knee-joint affected with carcinomatous disease. The bone is almost entirely destroyed, the outline of the condyles being only preserved by portions of the cartilage which remain. The disease appears to have commenced in the medulla and grown outwards, until the whole bone was involved in the tumor and destroyed. Also some carcinoma in head of tibia.

Case of Ann H., aged 30, under Mr. Birkett in 1855. For sixteen months she had felt pain and weakness of left thigh, which was soon followed by swelling. On admission, the lower half of the thigh was much swollen, and the woman was very ill and cachectic. While moving in bed, the bone broke. The limb was amputated, but she subsequently died, and carcinoma was found in the bones of the cranium.

Record of Insp., No. 154. 1855.

1162<sup>46</sup>. Section of os femoris of the preceding case, removed after death in order to show its healthy condition, and that the disease did not return in a part so contiguous to its original seat.

1162<sup>48</sup>. Section of lower half of os femoris affected with carcinoma. A large tumor occupies the shaft above the condyles, which has entirely destroyed the bone, which is broken through at this part. Injected.

1162<sup>60</sup>. Section of lower part of femur. The interior of the bone above the epiphysis is occupied by a soft carcinomatous growth, and projecting from the outside is a large tumor of the same character. Injected.

Amputated by Mr. Key.

1162<sup>65</sup>. Section of the lower half of the os femoris, and bones of knee-joint affected with osteosarcoma. A large tumor is growing from around the shaft at the condyles, and is composed principally of bony tissue. The shaft is seen passing through the mass, but at one part is closely incorporated with it, forming a dense osseous structure. The tumor contains much less soft material than most osteo-

sarcomas, and is probably less malignant or entirely innocent, and takes a place between simple osseous tumor and osteosarcoma. See similar specimen 1105<sup>50</sup>.

Case of John T., aged 41, whose thigh was amputated by Mr. Poland in 1854. It has been growing for five months, and was attributed to a blow.

1162<sup>66</sup>. Corresponding section dried.

1162<sup>77</sup>. Section of lower part of femur affected with a large osteosarcomatous tumor. The growth is seen to proceed from the surface of the bone, the shaft running through its midst intact. It consists of a mass of radiating fibre proceeding from the surface, intermixed with which are nodules of cartilage, and ossification is taking place amongst them. One part of the tumor has softened. The bony radii are nearest to the shaft of the femur, whilst the surface of the tumor consists of little more than cartilage.

Case of Sarah S., aged 14½ years, under Mr. Callaway in 1841. She was too ill for removal of the limb, and died shortly after admission. The lungs contained numerous tubercles about the size of peas and chestnuts—firm, roundish, nodular, semicartilaginous—some translucent, and some earthy. The latter were dried, and at present show nothing more than masses of bone about half an inch in diameter, although the description of the fresh specimen would make it appear that cartilage was present. Prep. 1750<sup>40</sup>. Drawing of limb during life, No. 9<sup>25</sup>. See similar specimen, No. 1117<sup>30</sup>.

18. Misc. Insp. Book, p. 85.

1162<sup>78</sup>. Corresponding section with the soft parts removed, showing the bony spiculæ growing from the shaft which pervaded the tumor.

Prep. of patella 1210<sup>90</sup>, affected with inflammation in consequence of neighbouring disease.

1162<sup>82</sup>. Macerated section of inferior half of femur affected with osteosarcoma, showing the solid earthy deposit in the form of radiated ossification which formed a part of the tumor. See two next specimens.

1162<sup>84</sup>. Portion of a large osteosarcomatous tumor which grew from the lower part of the thigh-bone. It is composed of fibro-tissue and cartilage, with some spiculæ of bone. The latter are in small quantity, and thus the growth is softer than some forms of osteosarcoma, and approaches nearer to carcinoma. Injected.

1162<sup>96</sup>. Another section of the same tumor presenting a tuberosity exterior, and thus resembling carcinomatous disease. There are large cavities within.

Case of John W., whose thigh was amputated by Mr. Morgan. He subsequently died, and the surface of lung was found covered with hard nodules, prep. 1782<sup>20</sup>; and also portion of diaphragm; prep. 2470<sup>63</sup>.

1163. Section of thigh affected with osteosarcoma. A large oval tumor composed of fibre, bone, and probably some cartilage, is seen growing around the lower end of the femur. It proceeds from the surface of the bone, so that the shaft is seen running through it intact.

Case of Anne G., aged 17, whose leg was amputated by Mr. Key in 1827. She ascribed the disease to a blow received several months before. She died a year afterwards, and the lungs and thoracic lymphatic glands were occupied by new growths. The lungs contained some hard nodules, surrounded by bone, prep. 1749<sup>32</sup>, and a large tumor encased in bone which encroaches on the heart, prep. 1400.

Misc. Insp. Book, p. 133.

1164. Corresponding section from preceding case.

1165. Small section of the preceding, showing the effect of the disease in separating the lamellæ of the shaft of the bone, and the more complete carcinomatous growth between the outer layer and the periosteum.

1165<sup>50</sup>. Section of the bones of the knee-joint affected with osteoid disease or osteoid cancer. A number of bony deposits are seen in the cancellous structure of lower end of femur; also in upper part of tibia, as well as in patella and parts around; so that it is sufficiently evident that in course of time the whole of these bones would have become



incorporated in one dense bony mass or tumor. This early condition of the disease well illustrates how the bony deposit occurs after the manner of cancer.

Case of Benjamin H., aged 56, was under Mr. Key in 1841. He was a farmer, and enjoyed good health until a few months before, when he struck his leg; pain followed, and subsequently swelling of the knee. The thigh was amputated, and the man died six weeks afterwards. The lungs contained beneath the pleura a number of oval patches or scales, the largest being the size of a shilling. They were thin and bony, and were said to contain but little membranous or soft structure. In the lungs themselves there were small angular masses of bone. Prep. 1750<sup>45,46</sup>. A large gland near the femoral artery had become converted into a hard, bony tumor. Prep. 1559<sup>12</sup>.

18. Misc. Insp. Book, p. 190.

1165<sup>51</sup>. Dried section of preceding.

1166. Section of the lower part of the femur, showing a large carcinomatous tumor which had begun in the medulla and entirely destroyed the shaft of the bone. A portion of the condyle is seen below.

Amputated by Mr. B. Cooper.

1167. A femur, of which the upper half is much enlarged by an irregular growth of bone. The osseous tissue is spongy, and appears to be the more solid part of an osteosarcoma growing from the shaft. The upper part of looser texture was probably mixed with cartilage, and the lower radiating portions of bone with fibrous tissue.

From Mr. Brooke's collection.

1167<sup>50</sup>. Os femoris, with several large exostoses upon it. There is a large coral-like mass of bone growing from the outer surface just above the condyle, and on the posterior part is a remarkable process of bone growing upwards, and dividing into two branches. The neck of the bone is also enlarged by a deposit of new bone between the trochanters, and this is almost obliterated. From the same patient

were the specimens, No. 1521, of the bones of the leg, also covered with exostoses.

Presented by Mr. W. Jackson. 1826.

1. Note-Book, p. 87.

1168. Section of the femur, showing a large tumor growing from the surface of the lower part of the shaft, and surrounding it. It is composed of fibrous tissue, bone, and cartilage. The centre of the shaft is seen to be hollow in one spot, as if the disease had penetrated it from behind.

The case is reported by Mr. Travers, and is that of Thomas H., aged 16, who was under Mr. Lucas in 1804. The whole thigh was swollen, and measured nineteen inches in circumference. Five months before, it had been laid open, and had since rapidly grown, and had profusely discharged. The limb was amputated, and the lad left the hospital with a good stump and improved health, but returned with the same disease in the chest, of which he died. This is shown in prep. 2434<sup>21</sup>, which is a large growth consisting of a soft structure and bone, involving the sternum, mediastinal glands, and lungs.

1169. Upper part of the thigh-bone, having a large carcinomatous growth below the trochanters, which has caused fracture at this part. The tumor has softened in the middle.

From a woman, 54 years of age, who had had cancer of the breast for seven years. For eight months she had felt her legs weak, and two months before death the thigh-bones suddenly broke.

Presented by Mr. Edward C. May.

1. Note-Book, p. 210<sup>a</sup>.

1172. Section of the upper part of the thigh-bone fractured through the neck and trochanters.

Presented by Sir A. Cooper.

1173. A dry section corresponding to the preceding.

1174. Upper part of the thigh-bone, with a fracture through the neck, principally within the capsular ligament, from an old man between 60 and 70 years of age. He had fallen down two steps, and died fourteen days after the accident with gastric irritation and delirium.

Presented by Mr. Fogerty.

1176. Recent fracture of the neck of the thigh-bone within the capsule. This is a very good example of the ordinary form of accident.

Drawing 10<sup>68</sup>.

1177. Recent fracture of cervix femoris within the capsule.
- 1177<sup>50</sup>. Upper part of the os femoris, with fracture through the cervix within the capsule. It appears to have taken place but a short time before death.

Presented by Dr. Hodgkin.

1178. Recent fracture of cervix femoris within the capsule.
1180. Old intracapsular fracture of the neck of the thigh-bone. There is no attempt at repair, although there is some deposition of new bone upon the fractured end; the neck is absorbed, and the articular cartilage, both of head and acetabulum, is partially destroyed.
1181. Old intracapsular fracture of cervix femoris; the neck has been absorbed and the head atrophied. The cartilage is also partially destroyed.
1182. Old intracapsular fracture of cervix femoris followed by complete absorption of neck. There is a little deposition of new bone about the fractured end of the shaft, and a protuberance below the lesser trochanter.
1183. Fracture of the head of the thigh-bone, partly within and partly without the capsular ligament. There is dense fibrous tissue uniting the fractured ends, and the head of the bone sunk nearly to the level of the trochanter major. The accident occurred probably several years before death.

Drawing 10<sup>52</sup>.

Presented by Mr. T. Hardy.

1184. Fracture of the neck of the thigh-bone in a child nine years of age, involving also the trochanters. There is abundance of new bone around the latter portions and shaft, but the reparation is deficient towards the head of the bone within the capsule.

- 1184<sup>50</sup>. Fracture through cervix femoris within the capsule: the separation is not seen on the external surface.

Case of James P., aged 72, under Mr. B. Cooper in 1843. He died eight weeks after the accident from injuries received, and decay of internal organs.

19. Misc. Insp. Book, p. 199.

1185. Section of fractured cervix femoris within the capsule, showing very close ligamentous union.

- 1185<sup>5</sup>. Intracapsular fracture of cervix femoris, showing partial reparation. The union is by fibrous tissue, intermixed with cartilage and a small quantity of new bone; nearly the whole of the neck is absorbed, and contrasts strongly with a section of the healthy femur from the other thigh.

Case of Mary F. H., aged 60. She had been an inmate of the Hospital Lunatic House for several years, and five years before her death, she fell and fractured the neck of thigh-bone within the capsule. All the symptoms were well marked: she was confined to her bed some months, but there was a difficulty in keeping on the splints. She afterwards sat up in a chair, and this was her position until three weeks before her death. She died of pneumonic phthisis. The limb was quite moveable in the socket.

Drawing 9<sup>91</sup>.

Record of Insp., No. 8. 1857.

- 1185<sup>10</sup>. Dried section of preceding specimen, with the other half of the healthy bone.

- 1185<sup>15</sup>. Fractured cervix femoris within the capsule, of the usual kind.

Case of Sarah M., aged 71, under Mr. Cock's care. She fell on her hip, and died a fortnight afterwards.

Record of Insp., No. 3. 1857.

1186. Preparation, showing ligamentous union of an intracapsular fractured cervix femoris.

1187. Section of the head and neck of a thigh-bone, preserved to show osseous union after fracture, but this is very doubt-

ful. It appears rather to represent the wasting of the neck and other degenerative changes which take place in old age.

See drawing 10<sup>65</sup>.

- 1187<sup>50</sup>. Fracture through the neck of the femur within the capsule. From the bony deposit on the trochanter it appears as if there had been some previous senile changes in the part.

Case of Eliza J., aged 68, who died sixteen days after the injury, in June, 1837.

See Mr. Bryant's catalogue, p. 107.

- 1187<sup>51</sup>. Fracture of the cervix femoris outside the capsule, and close above the trochanters. There appears to be some slight bony union.

Case of Mary M., aged 84, who died two months after the injury, in 1836.

See Mr. Bryant's catalogue, p. 105.

- 1187<sup>52</sup>. Fracture of the neck of the femur external to the capsule; the great trochanter has been fractured, and the neck driven into it; the lesser trochanter is also broken off.

Case of Elizabeth K., aged 67, who died in 1835, a month after the accident.

See drawing 10<sup>53</sup>.

See Mr. Bryant's catalogue, p. 106.

- 1187<sup>54</sup>. Fracture of the neck of the femur outside the capsule, with both the trochanters broken off. All these portions have united firmly, though irregularly, so that the head is at right angles to the shaft; the trochanters encompass the neck, the lesser one forming a large irregular mass of bone which supports it below. The preparation shows that the disease had probably been the seat of chronic rheumatic arthritis, there being a rim of new osseous matter around the acetabulum, and also on the head of the femur. The disease is more advanced in the joint of the opposite limb. (See prep. 1319<sup>10</sup>). This condition may, however, have arisen subsequent to the accident.

Case of John S., aged 87, who died sixteen months after having fallen down in a state of intoxication, in the year 1835. He was quite confined to his bed.

See drawing 10<sup>61</sup>.

See Mr. Bryant's catalogue, p. 107.

1187<sup>55</sup>. Neck of the thigh-bone fractured without the capsule, and driven into the trochanters, which are broken through. There is much deposition of new bone, and union of trochanters. There are also new osseous deposits on acetabulum, as well as tuberosity of ischium, and crest of ilium.

Case of Mrs. L., aged 60, who had a fall on the part, but was able to walk about six weeks after the accident. She died about nine months later.

See Mr. Bryant's catalogue, p. 100.

1187<sup>58</sup>. Fracture through the neck and trochanters of femur; the latter are isolated. It appears a recent injury.

See Mr. Bryant's catalogue, p. 98.

1187<sup>64</sup>. Fracture through neck and trochanters of thigh-bone. A large mass of bone unites the broken ends together, and encircles the neck; the trochanter major curves upwards above it, and in the same manner the trochanter minor below. The neck has in a manner slid down over the shaft, which partly penetrates its cancelli.

From a man about seventy years of age.

Presented by Mr. Cock, and Mr. Duke.

1187<sup>70</sup>. Fracture at the base of the cervix femoris, and the neck sunk into the shaft; there is slight displacement, but good union.

1187<sup>76</sup>. Fracture at the base of the cervix femoris; the neck sunk into the shaft, with old union.

1188. Fracture of the femur, in which the neck is sunk between the two trochanters, of which the greater is broken. The patient died in the Hospital from injury to the head, received at the same time.

See drawing 10<sup>60</sup>.

1188<sup>50</sup>. Head of the thigh-bone fractured through the neck and trochanters, with considerable comminution.

Case of Samuel J., aged 27, under Mr. Key in 1827. He survived the accident only five days.

See drawing 10<sup>66</sup>.

3. Green Insp. Book, p. 128.

1188<sup>55</sup>. Fracture through the neck of thigh-bone external to the capsule, and just implicating the trochanters. There is also a slight fissure passing downwards; a more severe blow would have produced the ordinary impacted fracture.

Case of Mary G., aged 70, under Mr. Cock. She lived twenty days after the accident.

Record of Insp., No. 206. 1855.

1188<sup>60</sup>. Head of femur, showing a firmly-united fracture of the neck and trochanters of the impacted variety. The head is at right angles to the shaft, and the trochanter forms an irregular mass of bone at its upper part. A section shows the head driven inwards into the cancelli of the shaft for more than an inch.

Case of Ann C., aged 66, an inmate of the Kent County Lunatic Asylum, fell and injured her hip seventeen months before her death. The limb was put upon a straight splint, and the patient kept her bed for six weeks; she then gradually gained strength in it, and she was able to walk about, although the leg was shorter than the other.

Presented by Mr. W. Hills. 1857.

1189. Section, showing the neck of the femur driven into the cancellated structures between the trochanters and united. The union is by a ligamentous material, but the adjacent parts of the shaft are encrusted with a little new bone.

See drawing 10<sup>64</sup>.

1189<sup>10</sup>. Corresponding section, dry.

1189<sup>50</sup>. An impacted fracture of the neck of the thigh-bone firmly united. The head has been driven in, and the trochanters separated, but they have all become firmly united.

1189<sup>60</sup>. Impacted fracture of thigh-bone united. The head has been driven quite into the cancelli of the shaft; the trochanter, which has also been fractured, is firmly united, and forms a large buttress by its junction with the trochanter minor.

1191. Os femoris, fractured through the neck and trochanters; the head of the bone is lodged in the acetabulum. There is no appearance of union.

1191<sup>50</sup>. Fracture of the neck of the femur external to the capsule, with isolation of trochanters. New bone has been thrown out, and the repair was proceeding.

Case of Samuel P., aged 66, under Mr. B. Cooper, in 1838. He lived nine weeks after the injury, and was able to walk with tolerable firmness before his death.

14. Misc. Insp. Book, p. 96.

1191<sup>65</sup>. Section of a fractured femur. It appears doubtful whether the neck has been broken, but the shaft is seen to be undergoing repair after fracture.

1192. Neck of thigh-bone, fractured obliquely between the trochanters, and rather on their lower surface towards the shaft. Firm union has taken place, but the head is united to the shaft almost in a straight line.

1193. Head of femur, showing oblique fracture through the trochanters. Firm union has taken place, though with some displacement.

1194. Comminuted fracture of the upper part of the thigh-bone; the neck has been broken through at its root, and forced downwards between the trochanters, which are separated into several pieces. There is no direct union between the portions, but there is a quantity of osseous deposit external to them, and holding them together.

Case of Dennis D., aged 44, under Mr. Cock. A load of earth fell upon him, producing the fracture of the left thigh. He died of pyæmia at the end of seven weeks.

Record of Insp., No. 233. 1854.



1195. Fracture and separation of trochanter major.

Case of Elizabeth C., aged 15, under Mr. Key, March, 1822. She fell and struck her right trochanter on the curb-stone; she rose and walked home. On the sixth day, having become exceedingly ill, she was admitted into the hospital. She died on the ninth day, of pericarditis (pyæmia?) The epiphysis was found detached, but the tendons still adherent to it.

See drawing 10<sup>67</sup>.

See Mr. C. A. Key's Record of Insp.

1196. Os femoris, fractured between the trochanters, and obliquely through the upper part of the shaft; union is complete.

1197. Oblique fracture through the upper part of the femur and trochanters; united.

1197<sup>8</sup>. Oblique fracture through upper half of femur at junction with trochanters. A large excrescence of new bone surrounds the latter, and end of shaft. The osseous tissue has become very dense (sclerosis).

From Mr. Howship's collection.

1197<sup>16</sup>. Os femoris obliquely fractured a little above the middle. It is very badly united, as the ends ride over each other for several inches; the lower part is in front, and reaches nearly as high as the trochanters and is directed outwards, while the upper portion is placed behind; the latter has probably been comminuted, and is undergoing necrosis in places.

1197<sup>18</sup>. A specimen very much like the preceding, only the upper part rides in front of the lower, which reaches as high as the trochanter major. The shortening is several inches, and union has taken place between the contiguous surfaces of the shaft.

1197<sup>19</sup>. Portion of shaft of femur, split into several longitudinal portions.

1197<sup>20</sup>. Oblique fracture of the shaft of the femur a little below the trochanters. The lower portion is carried upwards in front of the superior portion and above it, while the latter

passes horizontally behind it. The broken end is thus higher than the head, and in order to unite it to the part below, a very remarkable mass of bone proceeds downwards from the fractured end to the cervix; there is also good union at the place where the bones meet. The lower part of shaft is rotated inwards.

See drawing 13<sup>50</sup>.

From Mr. Howship's collection.

1197<sup>28</sup>. Fracture of femur about its middle; the ends ride and cross at an angle. A large quantity of new bone has formed around them, although firm union has not taken place.

1197<sup>32</sup>. Portion of middle part of shaft of femur, showing a badly-comminuted fracture; these have become united by a quantity of new bone formed around them, some of which appears in a state of necrosis.

Presented by Mr. Key.

1197<sup>36</sup>. Upper part of the femur, showing a compound fracture of a previously-broken bone. There appears to have been an oblique fracture at the upper part of the shaft below the trochanters, and a firm union has taken place. Upon this there is a recent compound fracture of the neck and trochanters, by which the head is separated, and the trochanters isolated.

1197<sup>40</sup>. Fracture of the shaft of the femur. The ends overlap, but repair is going on by some deposition of bone between them.

Case of William P., aged 55, who was under Mr. Key in 1840 for several severe injuries. He survived thirty-one days. See fractured rib 1051<sup>50</sup>.

17. Misc. Insp. Book, p. 303.

1197<sup>44</sup>. Femur fractured almost transversely in the middle of shaft. Repair is proceeding, and there is deposit of new bone above and below. It separated without force on removal.

Case of Thomas P., aged 48, under Mr. Key in 1844, and who died two months after the accident.

19. Misc. Insp. Book, p. 296.

1197<sup>48</sup>. Os femoris obliquely fractured a little above the middle. It is nearly united, although the overlapping is extreme, and it is three inches shorter than its fellow-bone. The head and trochanters are somewhat diseased, and there is extensive ulceration on the articular surface of the condyles. The medullary structure of the inner condyle is also diseased.

1197<sup>50</sup>. Upper part of a femur which has probably been fractured. It is covered with large exostoses growing outward from the trochanters. The most remarkable is one curving upwards from the trochanter minor, and which, with the osteophytes above, tend to form a cup-shaped mass of bone. In the midst is the head of the femur, the neck of the bone being absorbed. There is also a little deposit of new bone upon the acetabulum.

1197<sup>64</sup>. Os femoris obliquely fractured at its upper part. The ends overlap to the extent of six inches. New bone is thrown out between them; union is proceeding.

1197<sup>65</sup>. Os femoris fractured at the lower third. Overlapping has taken place to the length of three inches, but firm union has occurred. Strong cancellous bone unites the sides of the shaft together, the original dense shell of the two ends being still present.

Case of James D., aged 37, under Mr. Hilton for diseased finger. He died of pyæmia. See prep. of liver, 1898<sup>85</sup>. The thigh had been fractured nineteen years before.

Record of Insp., 120. 1856.

1197<sup>66</sup>. Dried section of same.

1197<sup>80</sup>. A section of a small portion of the shaft of the os femoris, showing the result of a lateral union between six and seven months after fracture. The process is completed, and junction firm. About one and a half inch of length is lost by overlapping, and a thickness of about one-third of an inch of cancellated bone, with a solid exterior, inter-

venes between the two portions of the shaft, whose ends are closed in and rounded. The centre of the solid callus is also in process of excavation, while its outline is dense and thick. The limb was amputated by Mr. Key in 1835 for disease of the knee-joint.

Case of J. W., aged 30. Drawing, 15<sup>70</sup>.

1197<sup>82</sup>. Partial fracture of a femur in a child. The bone should rather be called bent.

From Mr. Howship's collection.

1197<sup>88</sup>. Os femoris fractured transversely at its middle, and united at an angle. There has also been considerable disease of the bones of the knee, and destruction of the joint. The condyles are partly dislocated, but ankylosed to the tibia. The patella is also firmly united to the outer condyle, and growing downwards from it are two long bony processes or exostoses.

1198. Non-union of a fractured femur from a loose piece of bone between the extremities.

1199. Oblique fracture through the middle of os femoris. Firm union has taken place, but the lower end has been necrosed, and is now seen as a sequestrum, the union having taken place to the new bone, or capsule, which has formed around it. The sequestrum is loose, and is ready for removal.

1199<sup>50</sup>. Portion of femur showing the result of compound fracture and process of union. The ends overlap for the space of three inches, and meet at an angle. The exterior of each end is necrosed, and in process of separation, while union is taking place between the healthy portions above.

Case of William Y., aged 63, under Mr. Key in 1837. He died eleven weeks after the accident.

12. Misc. Insp. Book, p. 99.

1200. Lower extremity of os femoris, amputated by Mr. Key for compound fracture occasioned by a fall from a scaffold. The upper portion was protruded, and stuck in the ground.

1201. Fracture of the femur piercing the rectus externus.
1202. Os femoris of a young subject much wasted and distorted. There appears to have been a separation of the lower epiphysis, followed by reunion. The condyles ulcerated. There is no history of this case, but there seems no doubt that the specimen truly represents a transverse fracture of the right femur a little above the condyles, which has been long repaired.
1203. Os femoris showing a fracture and union, though by an overlapping to the extent of three inches. A mass of cancellous bone unites the dense sides of the shaft, and this has a hollow space in the middle. This specimen has been placed in acid, and a portion of the earthy matter removed.
- Drawing, 15<sup>86</sup>.
1204. Corresponding section of same, which has been deprived in great measure of its animal matter.
1205. Os femoris fractured at the upper part of the shaft, and well united. The head and neck of the bone are much distorted by chronic rheumatic arthritis.
- 1205<sup>50</sup>. Fracture of the femur above its middle, with much displacement, but good union.
1206. Os femoris fractured through the middle, and firmly united. The ends overlap to the extent of three inches, but the line of union is good. As in the three other specimens of this kind, the medullary canal is closed, and the ends rounded as in amputation.
- 1206<sup>50</sup>. Two sections of the femur, showing oblique fracture just above the middle of the shaft. Firm union has taken place, but the ends overlap for more than four inches, though at a slight angle.
1207. Section of os femoris fractured through the middle; firmly

united, but the bones shortened to the extent of from two to three inches, and at a slight angle.

1208. Os femoris fractured a little below the middle, firmly united in a straight line, but the ends overlap to the extent of from two to three inches.

1208<sup>50</sup>. Left femur sawn longitudinally, in which there has been a fracture just above the middle of the shaft. Firm union has taken place, but the bone is bent and shortened. It is difficult to follow the line of fracture, but it is apparently seen running obliquely through the cancellous structure which unites the bones, and probably overlapping has taken place to the extent of from two to three inches. The shell of the bone is much thicker on the concave than the convex surface.

From the Dissecting-Room.

1209. Os femoris fractured just above the middle third. Firm union has taken place, but the bones overlap to the extent of two inches, and at a slight angle. The new bone uniting them is not solid throughout. There has also been an oblique fracture just above the condyles, but firmly united.

1209<sup>32</sup>. Os femoris showing fracture in upper part of shaft. Firm union has taken place in a straight line, but the bones overlap to the extent of four inches. The head of the bone is also much enlarged by chronic rheumatic arthritis.

1209<sup>36</sup>. Os femoris fractured below its middle. Firm union has taken place in a straight line, but the bones overlap to the extent of three inches.

1209<sup>64</sup>. Os femoris fractured at commencement of middle third, firmly united, but the bones overlap from two to three inches, and form an angle.

1209<sup>72</sup>. Os femoris showing comminuted fracture at its upper third ; the bone has been split longitudinally into several portions.

These have, however, become firmly united to one another. There is slight shortening to the extent of  $1\frac{1}{2}$  inches.

Case of James B., aged 53, under Mr. B. Cooper in 1839. He had been in the hospital for four months, and was able to walk on crutches, when he suddenly died of an aneurism of the aorta.

17. Misc. Insp. Book, p. 14.

- 1209<sup>74</sup>. Oblique fracture in upper part of femur just below trochanters, firmly united.
- 1209<sup>75</sup>. Oblique fracture at upper part of shaft below trochanters, firmly united.
- 1209<sup>76</sup>. Oblique fracture at upper part of shaft below trochanters, firmly united at an angle.
- 1209<sup>77</sup>. Os femoris showing a severe fracture at the upper third. It is much altered in shape, and is much enlarged by deposit of new bone. It has apparently been comminuted, and the portions united. Between the upper end of shaft and the lower, there appears to have been an isolated portion.
- 1209<sup>78</sup>. Os femoris showing oblique fracture in the middle. It is firmly united, and in a tolerably straight line.
- 1209<sup>79</sup>. Os femoris showing a very severe comminuted fracture of the lower part of the shaft. There is a long oblique fracture reaching nearly down to the condyles, and the portion of shaft which is below this, is also broken off above the condyles, so that the latter appear as if they were thrust upwards between the broken portions of bone, one of which has been completely detached above. They have all again become firmly united.
- 1209<sup>80</sup>. Os femoris fractured at its lower third, but well united in a straight line, although overlapping for about two inches.
- 1209<sup>81</sup>. Os femoris fractured at junction of middle and lower third. Firm union has taken place, though at a slight angle, and there is overlapping of the bones.

- 1209<sup>82</sup>. Os femoris showing a very oblique fracture of seven inches long, and extending from the upper third to the lower third, quite through the middle portion of the shaft. Some shortening has taken place, but union is firm, and in a good line.
- 1209<sup>83</sup>. Portion of femur showing oblique fracture through the middle, and united.
- 1209<sup>84</sup>. Os femoris showing transverse fracture just below the middle. There is firm union, but overlapping to the extent of three inches. These ends are rounded as in other specimens.
- 1209<sup>85</sup>. Os femoris showing oblique fracture at lower part of shaft. Firm union has taken place.
- 1209<sup>86</sup>. Os femoris showing fracture at middle of the shaft. There is firm union in a straight line, but overlapping for two inches.
1210. Os femoris fractured about the middle, and united with much overlapping. Abundance of ossified callus, and one long process extending upwards forming an exostosis.
- 1210<sup>10</sup>. Os femoris which has been the subject of compound fracture. The ends have overlapped for nearly four inches, but firm union has taken place. There is much deposition of new bone all around.

Case of William C., aged 33, who died of phthisis in 1840. He was supposed to have fractured his thigh nine years before; and since, several portions of bone had come away.

17. *Miscell. Insp. Book*, p. 156.

- 1210<sup>20</sup>. Os femoris showing a fracture at its lower part; firm union has taken place. The original shaft has evidently been necrosed, for there is a hollow space in which it has been contained, while the bone at the seat of fracture is new tissue, and has been formed around it.

Presented by Mr. John Paine of Burton, Norfolk.



1210<sup>40</sup>. Os femoris which has been the subject of fracture obliquely below the middle, and vertically between the condyles; much overlapping has attended the union. The shaft appears to have undergone the commencement of necrosis.

Presented by Mr. Price of Greenwich, where the bone was found.

1210<sup>60</sup>. Left os femoris with a vertical fracture through the condyles. Firm union has taken place, with slight retraction of the internal condyle, which has been broken off. The new bone, both before and behind, is abundant to the very margin of the articular cartilage, beyond which there is a mere fissure. Drawing 15<sup>86</sup>.

1210<sup>65</sup>. Disunited epiphysis of lower end of femur.

1210<sup>66</sup>. Dried section of same.

#### PATELLA.

1210<sup>70</sup>. Patellæ of a young woman. One is somewhat deformed and wasted, the hip-joint of the same limb having been long partially contracted.

1210<sup>80</sup>. Section of a knee-joint of a young subject, in which ligamentous ankylosis has taken place. The patella is affected with necrosis, accompanied with tuberculous deposit; there is an external opening.

Amputated by Mr. Key in 1831.

1210<sup>90</sup>. Patella having numerous bony excrescences on its circumference, the result of periostitis.

From the case of Sarah S. See prep. 1162<sup>77</sup>.

1210<sup>95</sup>. This specimen was originally styled fungoid disease of the patella, but is in all probability myeloid. It consists of an expansion of the bone, whereby it measures three

inches in length and two in breadth; the internal soft contents have been removed, and thus a mere shell is left. The latter is no doubt composed of new bone, for the cords of the ligamentum patellæ are seen passing down on its inner surface; the new growth having absorbed all the original bone, and pressed through the interstices of the tendon of the extensors, and upon these fresh osseous tissue has been developed. The microscope shows that the soft matter still left within is composed of myeloid cells.

Case of Mary G., aged 24, a servant, admitted under Mr. B. Cooper in 1842. She had struck her knee two and a half years before; pain followed, but no swelling until twelve months afterwards. The tumor was felt as a simple enlargement of the patella, for it could be readily moved, and the joint was unaffected. The leg was amputated, and she left well.

18. Misc. Insp. Book, p. 265.

1210<sup>97</sup>. Section of a patella affected by carcinoma; it consists of a soft tumor resembling somewhat the form of the bone, but the original structures are mostly destroyed.

Case of Mary L., aged 71, under Mr. Key in 1843, for cancer of the knee; see prep. 1347<sup>60</sup>. The calvaria was also affected; see prep. 1081<sup>92</sup>.

19. Misc. Insp. Book, p. 144.

1210<sup>98</sup>. Dried section of same.

1211. Patella fractured longitudinally, and firmly united by bone; its shape is somewhat altered.

1211<sup>32</sup>. Patella with oblique fracture at the upper part; the two small fragments which have been detached are united by very firm ligamentous structure.

1211<sup>64</sup>. Patella showing a vertical fracture united by bone.

1211<sup>65</sup>. Patella showing a fracture longitudinally divided, and united by bone.

Presented by Mr. Duke.

1211<sup>75</sup>. Patella broken transversely, and reunited by bone. There is no history of this specimen; but it appears very clearly to have been fractured, repaired by osseous union, and been used for some time subsequently. On the anterior surface is a broad sulcus indicating the seat of fracture and original separation of the upper and lower portions; it presents two small oval fissures, where ossification is defective. The posterior surface shows still better the evidence of disunion; there are three transverse portions of articular cartilage, the middle one of which is flattened by contact with the condyles. The section shows a perfect union by cancellous osseous structure, although the cortical parts are slightly interrupted.

Drawing 15<sup>83, 94, 95, 96</sup>.

For further details of this specimen, see Guy's Hosp. Rep., Series I., vol. vi. p. 392.

From Mr. Bryant's collection.

1211<sup>80, 81</sup>. Section of two patellæ (dried) showing transverse fractures united by ligament. In the right this is an inch long; in the left there is a wide sulcus, and the two ends are moveable.

Case of James M., aged 58, who was killed by fracture of the pelvis. He had broken his patellæ some time before.

18. Misc. Insp. Book, p. 257.

1211<sup>82, 83</sup>. Corresponding sections wet.

1211<sup>90</sup>. Section of a patella showing fracture and ligamentous union. The displacement is great, but the separation of the broken portions is slight.

Presented by Mr. Hilton, from the Dissecting-Room.

1211<sup>91</sup>. Corresponding section dried.

1212. Bones of the knee-joint, with transverse fracture of the patella. The upper and lower portions are several inches apart; the former is resting on the shaft of the femur above the condyles, while the lower is on the tubercle of the tibia.

1212<sup>20</sup>. Three dried preparations of patellæ fractured transversely ;  
one of them is broken into four distinct portions.

From Mr. Bryant's collection.

1212<sup>32</sup>. Transverse fracture of the patella united by a ligament of  
about an inch in length.

1212<sup>64</sup>. Transverse fracture of the patella united by ligament of  
from two to three inches in length.

### TIBIA AND FIBULA.

1212<sup>82</sup>. Sections of the lower half of the tibia and fibula, from an  
old woman who had general atrophy of the osseous system,  
or mollities ossium.

For history, see prep. 1124<sup>90</sup>. 2. Note-Book, p. 33.

1213. Tibia of a young subject rather crooked and much wasted.

1213<sup>32</sup>. A similar specimen.

1213<sup>50</sup>. Tibia enlarged in size, irregular and nodular in form, and  
curved forwards. A section has been made, showing the  
hollowness of the bone and the thinness of its walls.

1213<sup>64</sup>. Two sections of a fibula very remarkably curved and  
flattened. It has evidently belonged to a leg deformed  
by rickets, and has been bent inwards, as is usual in this  
disease ; the enlargement and flattening is greatest at the  
curve—at that spot where the pressure of the body which  
it supported was greatest.

1213<sup>72</sup>. Fibula resembling the preceding, curved and flattened like  
a rib, as result of rickets.

See femur of the same limb, prep. 1135<sup>40</sup>.

1214. Tibia much distorted, considerably thickened and enlarged  
—the effects of rickets.

- 1214<sup>20</sup>. Tibia and fibula enlarged and distorted from rickets; they are flattened from before to behind, and curve inwards, and the two conditions thus represented accompany each other in the same portion of the bone, being in the tibia in the middle of the shaft, and in the fibula somewhat below.

See vertebral column, 1000<sup>25</sup>; and femur, 1134<sup>20</sup>.

1215. Small exostoses on the upper and inner part of the tibia.

- 1215<sup>50</sup>. Lamellar exostosis of the front of tibia, probably been connected with an ulcer. It is rather an enlargement of the lower part of the tibia, from a deposition of bone arising from periostitis.

From Mr. Howship's collection.

1216. Tibia of which the head is somewhat enlarged by a number of bony excrescences, evidently the result of inflammation.

- 1216<sup>50</sup>. Section of a tibia denuded by inflammation and suppuration; there is a slight deposition of new bone on parts of the shaft, while other parts are becoming necrosed, so that in all probability the whole tibia would have died.

Drawing No. 17.

From a lad, a patient of Mr. Key.

- 1216<sup>75</sup>. Two sections of tibia affected with caries and necrosis; the shaft in various places is seen to be decaying, and in other parts new bone is forming on the surface of periosteum.

Case of William A., aged 15, under Mr. Key in 1846. Two months before, he struck the leg, and suppuration followed, involving the ankle-joint; amputation, and recovery.

New Vol. I., p. 198.

1217. Portion of tibia exhibiting periosteal inflammation with sloughing, from hospital gangrene following syphilis; injected.

Prep. of sloughing tendon, from same case, No. 1376.

1217<sup>50</sup>. Portion of tibia showing necrosis of the surface, and parts of the shaft very much indurated by inflammation.

Case of John W., aged 89, under Mr. Morgan in 1844 for injury to the leg, resulting in inflammation of the bone.

From same case, preps. of hydrocele, 2367<sup>44</sup>; and heart, 1384<sup>46</sup>.

20. Misc. Insp. Book, p. 2.

1218. Portion of tibia and fibula much enlarged by inflammation, particularly at one spot constituting a node. The increase in size appears to be entirely due to periostitis, as all the new bone is external to the wall of the shaft, which is seen taking a straight course through the middle.

1219. Tibia having a great enlargement or node at its upper part.

1220 & 1221. Tibia and fibula exhibiting the effects of periosteal inflammation; the upper half and front part of tibia show the new bone on the surface, and the fibula especially, along its outer side.

1222. Portion of a chronic ulcer on the leg, injected; showing granulations, new but diseased cuticle, thickened and indurated subjacent cellular membrane, and periosteal inflammation. See preps. 1622 and 1653.

From a patient of Mr. Key.

1223. Lower portion of tibia showing granulations from periosteum, —the effect of an ulcer.

1223<sup>20</sup>. Section of tibia showing caries of the bone beneath a chronic ulcer (probably the form of ulcer styled malignant). The front part of the wall of the bone is eaten away to the extent of two inches, and its place occupied by small portions of necrotic bone inclosed in lymph or an epithelial growth. The shaft posteriorly shows the effects of periostitis, being covered with bony granulations, and the whole thickness of the wall of the tibia at this part is enlarged and indurated. The limb was amputated by Mr. B. Cooper, and the man died soon afterwards from exhaustion.

1223<sup>50</sup>. Upper part of the tibia in fragments, showing progressive absorption of bone, in consequence of an aneurism; from a young woman whose limb was amputated.

1224. The lower end of tibia in a state of caries.

1224<sup>50</sup>. Sections of the bones of the leg thickened without, and partially hollowed within, the result of periosteal inflammation.

See prep. 1366<sup>25</sup> (tendon), and drawing 37<sup>14</sup>.

1225. Tibia and fibula very much enlarged by periosteal inflammation and addition of bone to the surface. The tibia is principally affected on its outer side; the fibula is altogether altered in shape and size. At their lower part they are firmly ankylosed by a mass of new bone which blends them together, and, at the same time, the astragalus and os calcis; so that the joints between these respective bones are altogether destroyed.

1225<sup>32</sup>. Tibia and fibula very much enlarged and distorted in shape by periosteal inflammation; there is a slight bony union between their lower ends, and there is a patch of caries on the lower part.

From an old sailor who died in the hospital, and had taken large quantities of mercury.

1225<sup>45</sup>. Tibia and fibula very much enlarged and distorted by periosteal inflammation; the bones are united at their lower part.

1225<sup>64</sup>. Tibia and fibula very much enlarged and altered in shape by the deposit of new bone on the surface, by periostitis. The channels of the blood-vessels are seen marked in the new bone.

1225<sup>80</sup>. Tibia very much enlarged at its upper part, in consequence of periosteal inflammation.

1225<sup>90</sup>. Tibia very much enlarged; there is not much deposition of new bone on the surface, as in the preceding specimens, but the whole bone is enlarged, as if the osseous structure had been hypertrophied throughout.

1226. Fibula very much enlarged and angular in shape, in consequence of periosteal inflammation.

From Brooke's collection.

1227. Fibula with considerable irregular bony deposits, from periosteal inflammation near its lower extremity.

1227<sup>50</sup>. Fibula affected with necrosis, from a young subject. The dead bone is inclosed in a case of new bone formed around it, and in the latter are several openings leading to the sequestrum.

1227<sup>55</sup>. Tibia exhibiting periosteal inflammation and necrosis of the shaft.

1227<sup>60</sup>. Tibia and fibula greatly enlarged by periostitis. A section shows that the deposit of new bone is almost entirely due to an addition to the surface; and this is in so large amount posteriorly, that the flexor tendons are quite inclosed in a bony case. The tibia and fibula are united below.

1228. Lower part of tibia and fibula enlarged at lower part by periosteal inflammation, and united.

1229. Tibia and fibula very much enlarged at lower part by periosteal inflammation, and bones united.

1230. Tibia and fibula very much enlarged at lower part by periosteal inflammation, and bones united.

1231. Tibia and fibula ankylosed. The bones bear little if any marks of inflammation, except where the union has taken place.



1231<sup>50</sup>. Tibia and fibula united at their lower extremity by periosteal inflammation. There is considerable distortion of both bones.

1232<sup>10</sup>. A portion of bone six inches long, thrown off from the surface of the tibia, in consequence of hospital gangrene.

Case of Thomas G., aged 19, under Mr. Cock in October, 1855. The disease commenced by a slight abrasion of the leg in consequence of a kick, followed by suppuration, sloughing, and destruction of the surface of the tibia.

1232<sup>30</sup>. Section of tibia showing periostitis, and especially an oval mass of new bone on the anterior surface, which corresponded to an ulcer on the leg.

Case of Thomas F., aged 40, under Mr. Birkett. He had struck his leg twelve years before, producing an ulcer which had never healed. This was styled malignant; and all attempts to cure it having failed, the limb was amputated. The man subsequently died of cirrhosis of the liver.

Record of Insp., No. 141. 1855.

1232<sup>31</sup>. A wet section of same.

1233<sup>10</sup>. Shavings of bone from a tibia enlarged by inflammation.

Case of Thomas K., aged 19, admitted under Mr. Hilton, May 20, 1857. Three years before, a waggon had passed over his leg, producing inflammation of the bone. An ulcer existed, with great enlargement of the tibia, so that Mr. Hilton, by means of a chisel, pared off the exuberant osseous growth. The part afterwards slowly healed, and the lad left well.

1233<sup>20</sup>. Portion of necrosed bone removed from surface of tibia. One side is of a black colour, and the under is still seen covered with purulent matters.

Case of Edwin C., aged 11, under Mr. Hilton in 1857. The leg became spontaneously inflamed, suppuration followed, the bone became exposed, and decayed, and four months afterwards, the sequestrum came away; granulations subsequently sprung up on the bone, the wound healed, and the lad recovered.

Drawing, 16<sup>5</sup>.

1233<sup>40</sup>. Section of tibia, of which the wall of shaft is very much enlarged at its posterior part. This appears the result of an inflammation of the whole tissue of the bone or osteitis.

1233<sup>50</sup>. Section of tibia, showing the shaft at one part very much enlarged by an osteitis. This had probably been called a node.

1234<sup>32</sup>. Section of tibia very much enlarged by inflammation. There is much periosteal deposit on the surface, but the whole bone is involved in the enlargement, as well as the medullary canal, which is quite occupied by new bone.

1234<sup>64</sup>. Tibia very much enlarged by inflammation, apparently mostly periosteal.

1235. Tibia greatly enlarged by inflammation of whole tissue. It is nearly solid throughout, but the walls especially are much thickened and increased in density.

1236. Fibula enlarged by periosteal inflammation.

1236<sup>50</sup>. Fibula affected with enlargement about its middle, from periostitis.

Presented by Dr. Stuart of Philadelphia. 1839.

1237. Section of the lower extremities of the tibia and fibula ankylosed by periosteal inflammation.

1238. Section of tibia and fibula united by periosteal inflammation.

1238<sup>50</sup>. Tibia and fibula both extensively affected with periosteal inflammation. In the former there is also considerable exfoliation. The disease, which commenced in the tibia, was occasioned by a blow.

Amputated by Mr. B. Cooper.

1239. Head of tibia, with a considerable sequestrum in the medullary structure. Amputated.

- 1239<sup>82</sup>. The lower extremities of the tibia and fibula, with the astragalus, from a young subject. There is a small delicate sequestrum in the medullary structure of the tibia immediately above the epiphysis, and a considerable opening in the shaft of the bone, and another opening communicating with the joint through the epiphysis, the greater part of which has been destroyed by ulceration. The corresponding surface of the astragalus is also extensively and deeply ulcerated.
- 1239<sup>64</sup>. Tibia greatly enlarged by periostitis; the upper part contains sequestra, and is perforated in four or five places by ulceration.
1240. Tibia enlarged by inflammation, and a new shaft in process of formation. Portions of the old dead bone are seen within.
1242. Necrosis of tibia. A large capsule of new thick spongy bone is seen to have formed to replace the old, nearly the whole of which is contained as a sequestrum within. The new bone is firmly united to the epiphysis below, but the latter is removed above.
- 1242<sup>50</sup>. About five inches of the middle and upper part of the tibia separated as a sequestrum, from a lad about 17 years old. The disease originated in a blow, and the process of exfoliation occupied about fifteen months. The patient afterwards regained the free use of his limb without shortening.

Presented by Mr. W. Shortland of Ilchester.

- 1242<sup>55</sup>. A large necrotic portion of bone from above the middle of the tibia.
1243. Necrosis of tibia, in which the whole length of the shaft has been involved. The dead bone is separated, and is completely inclosed in a capsule of new bone formed around it, and which is of a soft spongy texture. In the

latter are numerous large openings communicating with the sequestrum within. The new bone is firmly united to the epiphyses.

1244. Necrosis of tibia, involving the whole length of shaft. Around it a new capsule of bone has been formed, which is firmly united to the epiphysis below, but separate from that above. Attempts have been made to remove the sequestrum, for a portion of it is seen to have been sawn through and removed.

1244<sup>50</sup>. Section of necrosed tibia. The portions of dead shaft are seen within the capsule of new bone formed around it.

Drawing, 17<sup>38</sup>.

1244<sup>55</sup>. Necrosis of tibia. Portions of the dead shaft are seen within, and surrounding it new bone formed by the periosteum. Also a section of foot, showing repair after removal of os calcis.

Case of a child, 3 years old, admitted under Mr. Birkett in 1854, for injury to the os calcis; this became necrosed, and was removed. Prep. 1284<sup>49</sup>, and drawing 24<sup>82</sup>. The disease afterwards extended to the ankle-joint, and afterwards to the tibia. This necessitated removal of the limb. The inflammation of the tibia had probably existed from two to three months. Recovery.

For details of case, see drawing 17<sup>51</sup>.

1245. Necrosis of lower part of tibia. The sequestra are seen through numerous cloacæ in the new-formed capsule around them.

1245<sup>32</sup>. Portion of new bone removed by the trephine from a tibia affected with necrosis, in order to extricate a sequestrum, which, however, could not be effected at that time.

By Mr. Morgan. 1830.

1245<sup>40</sup>. Section of tibia showing effects of periostitis. A layer of new bone is seen covering the shaft in patches; isolated portions of the old bone are becoming necrosed. The

disease has extended to the epiphyses, and involved the joints, the internal condyle being carious.

Case of Caleb L., aged 15, under Mr. Birkett in 1855. Three months before amputation he was quite well. At that time he felt a pain about the left knee, and afterwards suffered with general inflammation of the leg.

For further details, see drawing 17<sup>40</sup>.

1245<sup>45</sup>. Head of the tibia in a state of necrosis. There is seen a large hole produced by decay of the bone within.

Case of John W., aged 56, under Mr. Birkett in 1856. Fifteen months before his death, he began to feel pain about the head of the right tibia; inflammation and suppuration followed, and five months afterwards some necrosed bone was removed. Ten weeks afterwards, on readmission to the hospital, fistulous openings still existed leading to the diseased bone, and in a short time acute inflammation of the knee-joint was set up, followed by suppuration, and the man quickly died. There was a direct communication between the cavity in the head of the tibia, and the joint beneath the semilunar cartilage.

1245<sup>48</sup>. Necrosis of the head of the tibia. A section shows an almost detached necrotic portion of bone in the centre.

Case of L. B., aged 27, under Mr. Birkett in 1856. A twelvemonth before amputation he was seized with pain in left knee; abscess formed over tibia, and carious bone could be felt. From time to time small portions of dead bone were removed, but no permanent benefit ensuing, the limb was removed. Slight ulceration of the cartilage had commenced. Recovered.

1245<sup>50</sup>. Section of the knee-joint of a child, showing ligamentous ankylosis, and a large cavity at the head of the tibia, part being within the epiphysis, and part without. It is lined by a smooth membrane, and probably shows the process of cure after removal of a necrotic portion of bone.

Amputated by Mr. Hilton.

1245<sup>55</sup>. Bones of the knee-joint showing the effects of inflammation and necrosis. The disease appears to have originated in an injury, as a section shows the existence of an oblique fracture just above the condyles; the ends ride over each

other for the space of three or four inches, and are firmly united together, and around them is a large bony callus. The condyles are of very irregular shape, covered with osseous excrescences and carious, the articular surfaces being wholly destroyed. The head of the tibia, in a similar way, has large necrotic portions still attached to it, and all around are numerous bony excrescences. The patella is hollowed out, and its surface roughened. The fibula is also enlarged by ostitis.

- 1245<sup>60</sup>. Bones of knee-joint, showing the effects of inflammation and necrosis. The whole articular surface of the condyles is carious, and the surrounding parts covered with bony excrescences. The head of the tibia is necrotic, and has entirely lost its articular surfaces. Its external parts are covered with osteophytes, as is also the patella.

Case of John L., aged 34, under Mr. Hilton in 1857. For six years he had had enlargement of the knee-joint, unattended with pain. Admitted with enlarged joint, placed at a right angle, the tibia and fibula dislocated partially backwards, and many sinuses were present, communicating with necrosed bones. Amputation was performed, but the man died of pyæmia.

1246. Exfoliation of the tibia, and thickening of the periosteum, consequent on external ulceration. A node appears to have preceded it.
1247. Sloughing ulcer of the leg, and necrosis of the tibia. The surface of the latter is seen to be black and dead.
1248. Sections of the tibia and fibula softened and crooked. From a child affected with rickets.
- 1248<sup>s</sup>. Section of the head of the tibia, showing the results of inflammation and necrosis. The surface of the bone is covered with osseous excrescences, and within is seen a hollow from which a dead portion of bone has been removed. This disease followed amputation, and necessitated another operation above the knee.

1248<sup>12</sup>. The ends of the tibia and fibula after amputation. They are seen to be well closed by bone, quite rounded, and united together by strong ligamentous tissue.

Prep. of ends of nerves from same case, 1620<sup>28</sup>.

1248<sup>16</sup>. Section of the head of tibia affected with scrofula, producing exfoliation of bone, disease of the joint, and a sinuous opening below the knee. It probably commenced between the epiphysis and the shaft of the bone.

Amputated by Mr. Morgan from a boy aged 9 years.

Drawing, No. 19.

1248<sup>32</sup>. A section, the counterpart of preceding, showing some portions that have undergone necrosis.

1248<sup>40</sup>. Necrosis, probably strumous, in the head of the tibia. The articular cartilages were destroyed. The disease was supposed to have commenced in the former.

Case of Miss H., aged 24, who had long suffered and declined under the affection. She recovered after amputation. 1831.

From Mr. Bryant's collection.

1248<sup>48</sup>. An injected section of the head of the tibia, affected with inflammation, caries, and necrosis; also sinuses and sloughing. It appears as if a large part of the cancellous structure was quite dead, and was just ready for removal.

1248<sup>64</sup>. A macerated specimen, the counterpart of the preceding.

1248<sup>66</sup>. Head of the tibia, excavated by the loss of a sequestrum, arising from necrosis of the cancellous structure of the bone.

From Mr. Howship's collection.

1248<sup>70</sup>. Strumous necrosis in the head of the tibia, with inflammation of the knee-joint. A second amputation.

From Mr. Bryant's collection.

1248<sup>80</sup>. Carcinomatous ulcer of leg involving the bone. Its interior wall is destroyed for several inches, the cancellous struc-

ture is full of deposit, and the posterior wall of the tibia is also broken through. Amputated by Mr. Key. The disease returned in the internal organs; see cancer of heart, prep. 1399; kidneys, 2055; tumor in the skin, 1658; and the corresponding section of the leg, showing the disease of the integument, prep. 1641.

- 1248<sup>88</sup>. Section of tibia, showing epithelial cancer growing from the periosteum, from a space of more than two inches in diameter. The bone itself seems slightly affected, and the cancellous structure within infiltrated.

See wax model (pathological), No. 19; and drawing, No. 21.

1249. Carcinoma of the leg which has led to the destruction of the tibia and fibula.

1250. Tibia and fibula, showing the shafts of both bones nearly destroyed by carcinomatous disease. The soft parts have been removed and the bones left dry.

- 1250<sup>50</sup>. Tibia and fibula ankylosed at the lower portion.

1251. Tibia and fibula ankylosed and presenting several large exostoses. The upper part of both bones is covered with large osseous growths; below they are firmly united, and projecting from the point of union is a large exostosis.

See prep. 1167<sup>50</sup>. of exostoses of femur.

- 1251<sup>25</sup>. Section of the upper part of the tibia of a young person affected with osteosarcoma. It grows outwards from the shaft in a radiating form, the epiphysis being unaffected; the medulla is ossified, but otherwise the bone is healthy. The growth is made up of a fibrous structure ossifying, intermixed with nodules of cartilage. In one part softening has taken place.

Drawing No. 20.

- 1251<sup>50</sup>. Corresponding section, the muscles and integuments not removed. Amputated by Mr. Key.



1251<sup>55</sup>. Carcinoma of the fibula, showing nearly the whole of the bone destroyed; only small portions of earthy matter being in its site. The tumor is soft, and, as it grew originally from the whole length of the bone, is of an oval shape, and corresponds to the form of the leg; it has also a radiated structure.

Case of Elizabeth C., aged 7, under Mr. Birkett in 1853. Four months before the limb was amputated, the child had received a blow on the leg, and the latter rapidly swelled. A good recovery followed, but in nine months' time some tumors appeared on the head, accompanied by cerebral symptoms, and in three months more she died. Cancerous tumors were found in the calvaria.

For further history see drawing 20<sup>19</sup>.

1251<sup>75</sup>. Section of a tibia involved in an osteosarcomatous growth. The tumor grows from a great length of its surface, the shaft of the bone being unaffected. The part nearest the tibia is bony, but the circumference is soft and fleshy. On the posterior surface it is seen to be protruding through the skin, which is ulcerating.

Presented by Sir A. Cooper.

1251<sup>80</sup>. Osteosarcoma of upper part of tibia. A large growth is seen proceeding from the surface of the shaft, including the epiphysis, the latter not yet being united. It consists, like other tumors of this description, of dense fibres radiating from the surface of the bone, which pass directly outwards, and are in part ossified; amongst them are numerous nodules of well-formed cartilage. At the lower part where it commences to grow gradually outwards, the periosteum is seen to cover it, so that the tumor is manifestly between the wall of the shaft and the periosteum. The tibia itself, with the cancellous structure within, has become much indurated.

Case of James W., aged 19, under Mr. Cock in April 1857. He had suffered from pain in the leg for a year, and a visible swelling for four months. He died of pyæmia six weeks after amputation. There were no adventitious growths found in the body.

1251<sup>85</sup>. Section of the head of the tibia, showing a carcinomatous growth invading its tissue. The disease projects as a tumor on the inner side; it also penetrates the whole thickness of the bone, and involves the wall on the outer side. The consistence of the growth is very firm, resembling cartilage; it is composed of nucleated cells with fibrous tissue, constituting, in fact, scirrhus cancer.

Case of Ann L., aged 32, under Mr. Birkett in May, 1857. She had begun to suffer intense pain in head of tibia a twelvemonth before, and for nine months had observed a swelling. The tumor was evidently a part of the tibia itself, and was very hard and white on the surface. Amputation and recovery.

See drawing 20<sup>60, 61</sup>.

1252. Tibia of a young person, presenting a large spongy bony growth from its upper half; the shaft appears to be perfect in its centre. It is the bony portion left after maceration of an osteosarcomatous growth.

1252<sup>25</sup>. Bony portion of an osteosarcomatous tumor of the tibia.

1252<sup>87</sup>. A large osteosarcomatous tumor growing from the lower end of the tibia. The shaft of the bone is seen running through it, and has, with the cancellous structure, become extremely dense. The growth consists of fibres radiating from the surface, which in part are ossifying, and amongst them are distributed numerous nodules of cartilage.

1254. Parts of two tibiæ affected with large spongy bony tumors, the bases of osteosarcomatous growths.

Presented by Mr. Patchet of Plaistow.

1255. Head of the tibia expanded into a large bony case. It is nearly round, and is perforated with numerous holes; the articular surfaces are still seen present at its upper part. This is a very old specimen, and has no history connected with it, but it very much resembles in its general form the myeloid tumors, and thus no doubt belongs to this class. It has probably commenced by a growth from the centre of the bone, destroying its tissue, leaving a sac of periosteum around, which has afterwards become ossified.

1255<sup>25</sup>. The dried half of the following myeloid tumor.

1255<sup>26</sup>. Section of myeloid tumor of the head of the tibia, injected. It consists of a round mass, four inches in diameter, inclosed in a fibrous sac continuous with the periosteum, and containing numerous cysts within it; a fibrous network runs throughout it, in the meshes of which the marrow-like matter is contained. The cartilages of the joint are perfect above; and below, the shaft of the tibia ends abruptly in the tumor. The head of fibula and patella are quite unaffected. There is no history, but it is evidently from a young person.

1255<sup>30</sup>. Large myeloid tumor of the head of the tibia. This had originally been put up as "fungoid disease of the knee-joint, commencing in the head of the tibia." It is, however, a very good example of myeloid disease; it is quite round, of soft consistence, having no fibrous matrix within it, and measures six inches in diameter. The jagged end of the shaft of the bone terminates in the interior, the periosteum continues around it, to form its dense membranous walls; and above, the cartilages of the tibia and condyles of femur are quite healthy. Amputated by Mr. New.

1255<sup>60</sup>. Large osteosarcomatous tumor, growing from the upper part of the tibia. The shaft of the bone is seen to be perfect. The growth proceeds outwards from it, and evidently contains a large quantity of cartilage; it is softening at one part.

Removed from a lad, aged 16, by Mr. Robert Wells of Benenden, Kent.

2. Note-Book, p. 30.

1257. Lower end of tibia and fibula, with part of foot, showing some large tumors growing from the former bones. There are two large ones in front and another behind; they appear to be of a fibrous character. There is a little bone growing on the outer surface of one. Amputated by Mr. Key. The patient died.

1257<sup>50</sup>. Portion of periosteum from tibia affected with melanosis.

From a woman 46 years of age, who had numerous melanotic tumors covering the leg, see model (skin) 292. After death various organs were found pervaded with them; see heart prep. 1400<sup>20</sup>; melanosis of colon 1873<sup>76</sup>; inguinal glands 1559<sup>35</sup>; and drawing 52<sup>25</sup>.

1258. Section of the upper part of the tibia, containing a cavity the size of a small egg, which was filled with hydatids. There appears a little necrosis of bone around, and a fistulous opening leading from without to within the cavity.

1259. Tibia and fibula, from a leg amputated by Mr. Key for compound fracture; one of the broken extremities of the tibia was sawn off to favour the reduction, but a fragment of bone, piercing and irritating the tibialis posticus muscle, prevented the limb from being retained in its proper position.

Drawing 23.

1259<sup>50</sup>. Compound fracture of tibia and fibula, showing the upper broken ends of the bone.

From a man aged 62, under Mr. Key in 1840, who had his leg broken from a cart wheel passing over it.

2. Note-Book, p. 47.

1260<sup>6</sup>. Fragment of tibia longitudinally fractured.

1260<sup>12</sup>. Upper half of the left tibia perforated by a bullet (?) from side to side, behind the tubercle. It is manifest that the penetrating body passed from within to without, as externally the shell of the bone is broken up or forced outwards. A fissure is also seen running downwards, and traces of new osseous tissue are seen about it. The bone is injured by maceration, &c.

1260<sup>15</sup>. Amputated ends of tibia and fibula, showing the soft plug of lymph within them, preceding the osseous callus; fifteen days after operation.

Record of Insp., No. 81. 1857.

1260<sup>18</sup>. Portion of tibia, showing a double oblique fracture. From a private patient of Mr. Key.

1260<sup>20</sup>. Upper portions of tibia and fibula just below the heads of the bones, showing the result of an old fracture and false joint. The ends of the bones are rounded and smooth.

From the Dissecting-Room.

1260<sup>25</sup>. Two portions of the tibia, which has been fractured near its upper part, in which a slight and very imperfect attempt at union appears to have taken place, although considerable time seems to have elapsed.

From the Dissecting-Room.

1260<sup>30</sup>. Section of tibia, showing fracture, want of union, and excision of the ends of the bones. The small detached portions show the original terminations of the fractured bone; these are rounded on their surfaces, but present no attempt at union; they are placed upon the ends of the bones from which they were removed. A section is made through the latter, which also have made no attempt to unite, but are simply placed side by side.

Case of Henry R., aged 23, under Mr. Birkett in 1855; who had a piece of iron fall on his leg, producing compound fracture. Four months afterwards, no union having taken place, the ends of the broken bones were sawn off; and still no union taking place, the leg was amputated three months afterwards. Recovery.

1260<sup>40</sup>. Compound fracture of tibia and fibula, showing partial reparation. There is an oblique comminuted fracture through the lower part of the shaft, and the detached pieces of bone, although misplaced, are becoming united, and there is much new bone thrown out around from the periosteum. There is also a long vertical fissure which passes down into the ankle-joint, and also another similar one which separates the inner malleolus; the whole is surrounded by much new bone. The fibula is broken at its lower third; the ends overlap, but are united; the malleolus is also chipped.

Robert G., aged 38, under Mr. Birkett. He fell from a height, producing compound fracture of his leg. He refused to have it amputated; suppuration followed to a great extent, and the man sinking, the limb was removed, as a last resource, three months afterwards. He, however, rapidly sunk, having great visceral disease.

Record of Insp., No. 125. 1855.

1260<sup>45</sup>. Section of the tibia, showing great induration and hypertrophy of the bone, the result of a compound fracture. On the external surface ridges are seen, indicating the overlapping of the ends of the bones; within, all trace of the original line of fracture is destroyed, the broken ends being fused together, and a dense mass of ivory-like bone produced. The fibula has been fractured nearly three inches above, and near where amputation has been performed.

Case of William S., aged 36, a brewer's servant, who met with a compound fracture of the leg in April, 1852. Suffering from delirium tremens, it was impossible to keep his leg in a right position. A tolerably good union, however, took place, but the leg never healed. Ever since an ulcer existed, which resisted all attempts at cure, and occasionally some dead portions of bone were removed. The leg was therefore amputated in January, 1858.

1260<sup>50</sup>. The upper part of the tibia, showing an oblique fracture badly united.

1260<sup>75</sup>. Section of a tibia recently fractured; union in part effected.

1260<sup>76</sup>. A small section of the preceding, dried.

1261. Section of tibia obliquely fractured below the middle; the ends slightly overlap, but are well united.

1262. Tibia obliquely fractured in its lower third; slightly overlapping, but well united.

1263. Tibia cut in two, showing an oblique fracture just below the middle, and well united.

1265. Oblique fracture of the tibia in its lower third, united.

1265<sup>32</sup>. A tibia, fractured near its middle, and badly united at an angle.

- 1265<sup>64</sup>. Section of the lower part of a tibia, showing a fracture badly united, and accompanied by a partial thickening of the shell.
1266. Oblique fracture of the tibia in its lower third, badly united.
- 1266<sup>25</sup>. Oblique fracture of tibia just below the head; the upper portion overlaps, but there is firm union.
- 1266<sup>26</sup>. Transverse fracture of tibia in its middle, and well united.
- 1266<sup>27</sup>. Oblique fracture in middle of tibia, and firmly united.
- 1266<sup>28</sup>. Oblique fracture in middle of tibia, the ends overlapping, and firmly united at an angle.
- 1266<sup>29</sup>. Transverse fracture of middle of tibia, the ends overlapping for more than an inch, but firmly united.
- 1266<sup>30</sup>. Oblique fracture at lower third of tibia, firmly united, the upper part projecting.
- 1266<sup>31</sup>. Oblique fracture in lower third of tibia; firm union and enlargement of the bone at this part.
- 1266<sup>32</sup>. Oblique fracture at lower third of tibia, slightly overlapping and firmly united.
- 1266<sup>37</sup>. Fracture of tibia and fibula, the latter above the former; the ends slightly overlapping, but firmly united at their fractured ends, and also to one another. Sections have been made.
- 1266<sup>50</sup>. Section of the lower end of the tibia, showing an impacted fracture. By reason of a rotatory displacement a long point of the wall of the upper portion is driven into the cancelli below, but only a short piece above. At the base of inner malleolus there is a simple fissure, which extends about two inches up the shaft. There is only slight reparation, after twenty-eight days.

Case of Jane C., aged 52, under Mr. Morgan in 1842. While lifting down a bird cage from a wall, she fell from a chair on her foot, producing the fracture. There was not more than half an inch of shortening of the limb.

Preparation of cœcum, from same case 1879<sup>45</sup>.

18. Misc. Insp. Book, p. 247.

1266<sup>75</sup>. Lower end of tibia having a vertical fissure passing downwards on its outer side into the joint. This appears like a fracture. The articular surface is carious and covered with new bone, and the corresponding surface of the astragalus is in a like condition.

1267. Tibia united after a compound fracture. The bone has been broken in two distinct places several inches intervening. This middle portion has also been fractured longitudinally, and one piece been removed, so that the tibia is only of half its natural thickness at this part.

Presented by Mr. M'Intyre, Newcastle.

1268. Tibia and fibula, showing result of a comminuted fracture of the former bone. There has been much loss of substance, so that the ends of the bones are pointed and slightly overlap; there is only slight union between them. The whole support of the leg appears to have been received by the fibula; this is very much enlarged, being almost the size of the tibia, and is curved in consequence of the shortening of the fractured bone. There is also a production of bone in the interosseous space.

Drawing 177<sup>5</sup>.

Presented by Dr. Sims to Sir A. Cooper.

1268<sup>82</sup>. Section of tibia which has been much comminuted. The detached portions of bone, as well as the two fractured ends, are held together by fibrous tissue.

Sir A. Cooper.

1268<sup>46</sup>. Carcinomatous growth at lower end of fibula. It has grown from the interior of the malleolus, is of a soft vascular character, and has sprouted through the skin.



1268<sup>50</sup>. Myeloid disease of the head of the fibula. This has been developed wholly within the head of the bone, and has not involved the surrounding parts. It is round, measures four and a half inches in diameter, and consists of a fibrous capsule continuous with the periosteum; numerous fibrous bands run through it, forming meshes in which the red myeloid matter is contained.

Case of Daniel K., aged 30, under Mr. Cock in 1856. His health had always been good until seven months before, when he perceived a lump growing on the outside of the left knee. It gradually increased, and during the last three weeks had caused much pain from pressure on peroneal nerve. His health was good; the limb was amputated, and he recovered.

Drawing 21<sup>10</sup>.

1268<sup>51</sup>. Osteoid cancer of head of fibula. The tumor consists of a soft bony growth, being composed of a mixture of earthy and softer material. The shaft of the fibula is quite destroyed, and its place taken by the adventitious structure. The microscopic elements are amorphous bony matter, nucleated cells like those of cancer, and well-marked poly-nucleated myeloid cells.

Case of George W., aged 18, admitted under Mr. Birkett in March, 1857, with a large swelling on the outer side of the left leg, presenting a very malignant appearance. It had been growing for six months (see drawing 21<sup>15</sup>). Amputation not being permitted, the lad left the hospital, and again returned under Mr. Cock's care in May, when the tumor had much enlarged and had begun to soften. The limb was removed, and on section presented the appearance seen in the preparation (and drawing 21<sup>16</sup>). At the end of August he began to feel a numbness in his limbs, and in a few days he became quite paraplegic, and thus he died in October. The post-mortem examination revealed disease in the spine, and in the lungs. The dorsal vertebræ were infiltrated with a soft bony matter of exactly the same constitution as that in the tumor removed from the leg, and throughout the lungs were numerous nodules consisting of the same structure.

See drawing 21<sup>17</sup>; and prep. 1760<sup>52</sup>.

1268<sup>60</sup>. Carcinoma of the fibula. The tumor, having grown from the whole length of the bone, is of the length of the leg, and of an oval shape. It consists of soft medullary matter having a few spiculæ of bone in its centre, the remains of the fibula. The epiphyses are unaffected.

Case of Selina B., aged 8, whose leg was amputated by Mr. Hilton in January, 1857. The growth had been noticed for two years, and at last rapidly increased. She left with the stump healed about a month afterwards.

Drawing 20<sup>70</sup>.

1268<sup>64</sup>. Fibula fractured near its upper part; a good union seems to have been prevented by motion between the fractured ends, but there is abundant bony callus around them.

Drawing 24<sup>60</sup>.

From the Dissecting-Room.

1268<sup>82</sup>. Two sections of the inferior half of the fibula which has been broken transversely in two places, and subsequently well united.

Presented by Mr. Gardiner.

1268<sup>90</sup>. A fibula, showing a fracture which has united within two inches of its inferior extremity.

1269. Section of fibula broken in the middle, firmly united, but the ends slightly overlapping.

1269<sup>82</sup>. Fibula broken in the middle; firmly united, but at an angle.

1269<sup>64</sup>. Fibula fractured obliquely near its lower extremity, and very badly united by the sides; the ends riding for more than an inch.

From Brooke's collection.

1269<sup>72</sup>. Fibula obliquely fractured, and the ends, which are united laterally, overlapping for two inches.

1169<sup>80</sup>. Fibula obliquely fractured in the middle and firmly united, but ends slightly overlapping.

1270. Fibula fractured in its lower third, and only partially united. The broken ends are much enlarged, and their surfaces correspond as if there had been motion for some time between them, and an attempt at a false joint, but subsequent union.

- 1270<sup>50</sup>. Upper portion of fibula, which appears to have its head broken off and comminuted by direct violence. The fragments have again firmly united, but with some enlargement and irregularity of surface.
1271. Fibula which has been comminuted, but again firmly united. The shaft has been broken through obliquely, and the upper portion also split longitudinally.
1272. Portion of fibula fractured through the middle; the ends are displaced so that they barely touch, but union has taken place. There is also a small fragment intervening between the extremities of the larger portions, and united to both.
1273. Tibia and fibula fractured obliquely through their middle, with good union.
1274. Tibia and fibula fractured obliquely below their middle. They are both bent inwards at an angle, and enlarged at this spot.
1275. Portion of tibia and fibula which have been fractured; firmly united, and also to each other.
1276. Tibia and fibula, of which the former presents a well-united transverse fracture. Some distance below this spot, the two bones are united together, and somewhat enlarged, as if there had been another fracture or injury at this part.
1277. Tibia and fibula obliquely fractured at their lower part, and firmly united, with some overlapping. The fibula is fractured an inch below the tibia, and the two bones are united together.
- 1277<sup>40</sup>. Section of tibia and fibula which had suffered compound fracture, but now firmly united. The former bone is broken about three inches above the ankle, and the latter two inches higher up. The two bones are also joined near the seat of injury.

1277<sup>50</sup>. Tibia and fibula which have received a compound fracture towards their lower portion, the tibia obliquely about three inches above the ankle; firm union has taken place, but at a slight angle, and there is some projection of the edges of the bone. The fibula is also fractured two inches above, and united at an angle.

1278. Section of tibia and fibula, showing fracture at their lower third. There is firm union between both ends, and between each other; but the ends overlap to the extent of an inch.

1278<sup>50</sup>. Oblique fracture of tibia and fibula just below the middle. The former has well united, though not quite in a straight line; the latter, however, has very badly united. The lower portion is firmly joined to the tibia at the seat of fracture, but the upper portion has formed only a slight attachment to the lower by its side, and projects downwards as a sharp pointed process.

Case of Robert C., aged 41, under Mr. B. Cooper in 1840. Three years before, he suffered compound fracture of the leg, and this being shorter than the other, and having an incurable ulcer, he wished its removal. It was amputated, and the man recovered.

1279. The counterpart of 1278.

1279<sup>85</sup>. Tibia and fibula fractured in the middle; united, but bent inwards nearly at a right angle.

From Howship's collection.

1279<sup>50</sup>. Tibia and fibula fractured; firmly united, but ends overriding to the extent of two inches.

Presented by Mr. Shoobridge.

1279<sup>75</sup>. Oblique fracture of tibia and fibula, the former at the lower part with shortening, the latter above, just below the head. It would appear as if superincumbent weight, obliquely applied, had first broken the tibia and then the fibula.

Drawing, 15<sup>86</sup>.

From Howship's collection.

1279<sup>80</sup>. Oblique fracture of tibia and fibula, the former well united with some shortening; the latter broken at its upper part, and united, with much enlargement of the bone at this spot. A similar form of fracture to preceding specimen.

1279<sup>86</sup>. Lower half of tibia and fibula obliquely fractured just above the joint, and firmly united. It shows the parallelism of the line of obliquity, produced by a pressure exerted downwards and outwards.

Drawing, 15<sup>80</sup>.

From Howship's collection.

1280. Tibia and fibula fractured, and imperfectly united. There appears to have been some tendency to the formation of a false joint.

1281. Tibia and fibula said to have been fractured at birth, and not united several years afterwards, when removed. The broken ends, which are at the lower part of the leg, form right angles with one another, so that the side of the foot must have rested on the ground. There is some slight deposition of bone around them, but the union is principally ligamentous, and no doubt some motion had been allowed between them.

1281<sup>25</sup>. Four specimens, showing some of the more usual forms of fracture of the leg. All recent—

A. Tibia fractured above the ankle, and outer malleolus broken through.

B. Comminuted fracture of tibia, with numerous longitudinal fissures.

C. Fracture through both bones a little above the ankle.

D. Oblique fracture of tibia in lower third, and the fibula broken through in two places, a little above and a little below the fracture in tibia.

1281<sup>50</sup>. Six specimens of compound fracture of the leg in process of union. From France, and supposed to be military injuries.

- 1281<sup>75</sup>. Fractured tibia repaired, with ankylosis of fibula and ankle-joint, probably the result of a gun-shot. All these parts are firmly united in one mass of bone, so that it is difficult to state accurately the original injury; but it appears as if there had been a longitudinal fracture of the tibia into the joint, and the latter had necessarily been destroyed by the subsequent inflammatory processes. A deep fissure in which are two holes, indicates the line of injury.
1282. Section of fractured tibia and fibula, subsequently united, from which the earthy matter has been removed.
1283. Compound fracture of tibia and fibula into ankle-joint, with foot attached, and ligaments dissected.

#### BONES OF THE FOOT.

1284. Leg of a fœtus somewhat distorted.
- 1284<sup>32</sup>. Lower part of the tibia and fibula, with the os calcis and tarsus, showing extensive ulceration of the protuberance of the os calcis.
- 1284<sup>48</sup>. An injected section of the ankle-joint removed by Mr. Key. The os calcis is undergoing necrosis, and its articulation with the astragalus is destroyed. A sinus is seen opening towards the malleolus, and the integuments above the heel are ulcerated.
- 1284<sup>49</sup>. The ossified centre of os calcis of a child, removed on account of necrosis.
- Case of William H., aged 2 years, under Mr. Birkett in 1853 for disease of the os calcis, resulting from a blow received three months previously. The whole leg subsequently became diseased, and was amputated; see prep. 1244<sup>55</sup>, and drawing, 17<sup>51</sup>. The section of foot showed the repair which had taken place in the course of two years, see drawing, 24<sup>82</sup>, and above-named preparation.
- 1284<sup>50</sup>. Ankylosis of astragalus and os calcis; bones much worm-eaten, probably the result of caries.

1284<sup>54</sup>. The whole of the tarsal and metatarsal bones united by ankylosis.

1284<sup>60</sup>. Section of foot, showing repair of the bones after removal of the scaphoid, and base of metatarsal. The latter portions are seen loose at the bottom of the jar.

Case of Frederick C., aged 18, under Mr. Hilton in 1857. Five years previously his foot was trodden on; inflammation and suppuration followed, and a year before admission, a piece of the internal cuneiform was removed. Mr. Hilton then excised the above-named bones, and recovery was tardily progressing, but the patient not being able to walk on it, it was removed, at his request, four months afterwards. Recovered.

1284<sup>62</sup>. Section of foot, showing recovery after removal of the greater part of the scaphoid. A portion is seen still left, united by bone to the astragalus and internal cuneiform.

Case of William J., aged 20, under Mr. Birkett in 1854. The foot had been bad for three months, and had numerous fistulous openings leading to diseased bone. The greater part of scaphoid, which was necrosed, was removed. Hospital gangrene followed, and partial recovery, when the ankle-joint became affected, and amputation was had recourse to. This was performed at the joint, the malleoli being sawn off. Recovery.

Drawing, 24<sup>81</sup>.

1284<sup>64</sup>. Tarsal and metatarsal bones, united with some enlargement.

1284<sup>70</sup>. Tarsal and metatarsal bones united.

1284<sup>75</sup>. Compound dislocation of the ankle-joint, with fracture of astragalus. The latter bone is seen to be split almost vertically downwards, the plane of fracture passing through the superior articular surface in a diagonal direction, so that the outer malleolus is left with its ligaments untouched, but the inner articular surface is fractured, and the ligaments torn. The line of fracture is directly covered by the end of the tibia. Peronei muscles not torn.

Case of George T., aged 44, under Mr. Hilton in 1855. He was a carman, and fell from the shafts of the cart on which he was riding on to his foot, producing the injury. The foot was bent at right angles

with the leg; the tibia and astragalus projected through a wound on the inner side; the latter being broken through the middle, had a part attached to the tibia, and the other to the scaphoid and foot. By using some force, the fractured ends were placed in position, but the man died three days afterwards of delirium tremens. Drawing, 24<sup>84</sup>.

Record of Insp. 110. 1855.

1284<sup>80</sup>. A malformed foot, in which the three middle toe are absent, and the two which remain are considerably separated at their bases, but are recurved downwards towards each other, the fifth being disproportionately large. A wet specimen.

See malformed hands, 1119<sup>40, 41</sup>.

From the Dissecting-Room.

1284<sup>81</sup>. A similar specimen; the opposite limb, from the same subject, dissected and dried. The second metatarsus and its digits are wanting; the third joins the fifth, to support the little toe. Some trace of the fourth metatarsus probably separates the bases of the two last-named.

1285. Foot of an infant having six toes.

1285<sup>50</sup>. Metatarsal bone of great toe, showing enlargement of its head, and deposit of bone around, probably either from simple inflammation or chronic rheumatic arthritis.

1285<sup>75</sup>. Metatarsal bone which has been the subject of periostitis, being much enlarged by the deposition of osseous matter all over it.

1285<sup>80</sup>. Portions of enchondromatous tumors removed from the toes.

Mr. Hilton.

1286. A double toe.

Removed by Sir A. Cooper.

1286<sup>50</sup>. First phalanx of little toe malformed.

1286<sup>60</sup>. A double little toe.

Drawing, 522<sup>22</sup>.



1287. Exostosis from the extremity of the little toe.
- 1287<sup>32</sup>. First and second phalangeal bones of a toe ankylosed.
- 1287<sup>64</sup>. First and second phalangeal bones of a toe ankylosed.
1288. Several bones of the foot affected by periosteal inflammation, with ankylosis and ulceration.
- 1288<sup>32</sup>. Great toe amputated, with its metatarsal bone, by Mr. B. Cooper. The first phalangeal bone is necrosed. There is a large sinuous opening in the soft parts which is shown in the preparation.
- 1288<sup>40</sup>. Portion of metatarsal bone of great toe removed for necrosis.
- Case of Hannah D., aged 8, under Mr. Birkett in 1857. Sore on foot for some weeks, incision made, and distal extremity of shaft of bone, which was loose and detached from epiphysis, was removed. Recovered.
1289. One of the bones of the tarsus exhibiting incipient disease in the cancelli, with apparent scrofulous deposit.
- 1289<sup>16</sup>. Metatarsal bone fractured and united.
- 1289<sup>17</sup>. Exostosis removed from the great toe. The centre is bone, and the circumference cartilage.
- Case of Isaac E., aged 33, under Mr. Hilton in 1857. It had been growing for nine months beneath the nail of the left great toe.
- Drawing, 24<sup>85</sup>.

## DISEASES AND INJURIES OF THE JOINTS.

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### VERTEBRAL JOINTS.

1289<sup>32</sup>. The first three cervical vertebræ, showing a rupture of the transverse ligament of the processus dentatus from ulceration.

1289<sup>40</sup>. Dried section of three vertebræ, showing destruction of the intervertebral cartilage and slight caries. There is also superficial ankylosis of the anterior surface of the bones.

1289<sup>42</sup>. Dried section of the two last dorsal, and two first lumbar vertebræ, showing destruction of the intervertebral cartilage between two of them, and considerable caries of the adjoining vertebræ. There is slight bony union between the articular processes.

1289<sup>43</sup>. Section of two lumbar vertebræ, showing ulceration of intervertebral cartilage, and decay of the adjoining bones.

Case of Frederick B., aged 24, under Mr. B. Cooper in 1842, for lumbar abscess, which had been coming for two years. He died from exhaustion, the cord being unaffected.

19. Misc. Insp. Book, p. 52.

1289<sup>48</sup>. Lumbar vertebræ, showing a thickening and ossification of the intervertebral substance, which, projecting into the spinal canal, was supposed to have caused paraplegia.

Case of Samuel D., aged 48, admitted under Mr. Key in 1836, for stricture and perineal fistula, from which he had suffered for several years. While under treatment, he was seized with pyrexia and rigors, and shortly the power in the lower limbs failed, until he became paraplegic.

After death the bladder was found inflamed, the kidneys were suppurating, and one hip-joint contained pus. The intervertebral substances were partly ossified, and, projecting into the spinal canal, were thought to exert pressure on the cord, and had produced the paraplegia.

8. Misc. Insp. Book, p. 53.

- 1289<sup>80</sup>. Dorsal and lumbar portion of the spinal column, showing ossified intervertebral substance between eleventh and twelfth vertebræ, which was thought to press on the cord in a case of paraplegia.

Case of George W., aged 44, admitted under Dr. Back in 1836, for paraplegia. The symptoms had been gradually progressing for a twelvemonth, and he shortly died. There was a deep bed sore on the back, the bladder was covered with lymph, and kidneys suppurating. The spinal medulla was thought to be quite sound.

9. Misc. Insp. Book, p. 130.

For further particulars of this and the above case, with comments, see Guy's Hospital Reports, Series I., vol. iii, p. 17. Considerable doubt has been expressed as to the explanation given by Mr. Key to account for the paraplegia in these cases, since the condition of vertebræ here exhibited is far from uncommon, and, at the same time, softening of the spinal cord can be attributed to so many other causes.

1290. Section of the spine, showing extensive caries of the vertebræ, with angular curvature. The last four dorsal are greatly diseased, the two middle are nearly destroyed, and the portions which are left of the upper and lower have fallen together, producing an angular curvature. The other dorsal vertebræ are also affected on their anterior surface.

Case of James G., aged 17, in the hospital in 1817, for angular curvature of the spine and paralysis. There was cretaceous matter in the bronchial glands. Prep. 1547.

Old Museum-Book, No. 73.

1291. Ulceration of the intervertebral substance between the last cervical and first dorsal vertebræ, with caries of the adjoining bones. There is an abscess burrowing in the soft parts anterior to the bodies of several of these bones.

1292. Section of three cervical vertebræ, showing their partial destruction by caries. The counterpart of preparation 1021.

1292<sup>5</sup>. Dorsal and lumbar vertebræ united by ligament. The last bodies of the dorsal, and parts of the two adjoining bones, have been affected with ulceration; and the dried walls of sinuous abscesses are seen extending far upwards and downwards.

1292<sup>10</sup>. Preparation which is said to be the sac of a psoas abscess converted into bone. The disease had existed nearly two years.

From Langstaff's collection.

1292<sup>20</sup>. Section of a large carcinomatous tumor growing from the ligamentous structure on the anterior and posterior surfaces of the sacrum and os coccygis. It occupies nearly the whole of the pelvis: it is soft, and appears to spring mainly from the surface of the bone.

Case of Wm. P., aged 18, under Mr. Key in 1830. He was admitted for this large growth in his pelvis, and shortly partial paraplegia came on. Carcinoma was found in the lungs.

Drawing 27, and cast 51.

9. Green Insp. Book, p. 119.

1292<sup>21</sup>. Counterpart section to the preceding specimen.

1292<sup>60</sup>. Some of the cervical vertebræ showing dislocation of the fifth without fracture, except a very small fragment at the extremity of one of the transverse processes. The accident had not caused any displacement or other appearance of injury discoverable during life.

Case of Thomas D., aged 75, who was run over in 1829; paralysis ensued, and he survived the accident six days. The spinal cord was completely softened below the point of dislocation.

1. Note-Book, p. 150.

1292<sup>65</sup>. Dislocation of the fifth cervical vertebra; a fragment of bone is adhering to the posterior ligament of the bodies.

1292<sup>70</sup>. Dislocation of the fourth cervical vertebra forwards.

Presented by Sir A. Cooper.

### CLAVICULAR JOINTS.

1292<sup>90</sup>. Dislocation of the sternal extremity of the clavicle, upwards and outwards.

Case of George R., aged 40, in the hospital, 1828. He fell from a height by which he dislocated his clavicle; it could be reduced, but was with difficulty retained in its position. He also fractured his ribs, and died nine days afterwards of pneumonia. See from same case, prep. of gall-bladder 1958; and gall-stones 1967.

5. Green Insp. Book, p. 138.

1293. Scapula and clavicles of a man imagined to have carried milk; the clavicle is articulated, by a distinct joint, with the upper part of the coronoid process on either side. The coronoid and trapezoid ligaments were as usual, but shorter.

### COSTAL CARTILAGES.

1294<sup>25</sup>. Dried preparation of an aneurismal sac, protruding the left rib-cartilages.

Case of John H., aged 55, who was under Dr. Addison in 1834. He had suffered from symptoms of the disease for three years. Prep. of aneurism 1450<sup>25</sup>; and pneumogastric nerve compressed by it, 1613<sup>50</sup>.

5. Misc. Insp. Book, p. 116.

1294<sup>50</sup>. Cartilage of a rib having a supplementary process.

1294<sup>60</sup>. The cartilages of the eleventh ribs ossifying.

From Charles M'L., aged 40, who died in the hospital in 1837.

11. Misc. Insp. Book, p. 144.

1294<sup>68</sup>. Lower rib-cartilages ossified and disunited.

1294<sup>69</sup>. Similar parts, dried.

Mr. Hilton.

## SHOULDER JOINT.

- 1295<sup>25</sup>. Chronic rheumatic arthritis of shoulder-joint. The articular surfaces are surrounded by a quantity of new bone, and are thus much altered in shape. The glenoid cavity has osseous deposit on its edges, and its surface is thus widened, and at the same time flattened. The end of the humerus is also expanded by the deposition of new osseous matter around it. The more prominent parts of both articular surfaces, which came in contact, are eburnated and polished.
- 1295<sup>50</sup>. Preparation put up as one of dislocation of the head of the humerus. Some displacement has evidently occurred, but at the same time, there is so much disease about the parts, that it is questionable whether the changes seen be not due altogether to chronic rheumatic inflammation. The acromion is enlarged, and its under surface is hollowed out into a smooth articular surface, which corresponds to a newly-formed facet of the head of the humerus. The latter has thus two articular surfaces; the one being for the glenoid cavity, and the other for the acromion; the latter is raised, polished, and eburnated. There are also numerous bony excrescences surrounding the joint, and one large distinct portion has formed in the ligament, at the extremity of the coracoid process.
- 1297<sup>25</sup>. Scapula and humerus, showing great disease of the shoulder-joint, supposed to have arisen from a dislocation forwards of the latter bone. The original glenoid cavity is destroyed, as well as the neck of the scapula, and in its place is a mass of spongy new bone which presents two facets—an upper one, which appears to be the remains of the original articular surface; and a lower one situated on the inferior border of the scapula, against which the head of the humerus rested. The latter is much enlarged by a

deposition of new bone all over it, producing a nodular uneven mass; its inner side is flattened, where it appears to have rested against a corresponding surface on the scapula. There is also some enlargement by inflammation of the acromion and coracoid process. A clavicle placed with these specimens is fractured longitudinally, and well united.

1297<sup>30</sup>. Scapula and humerus, showing great disease of the parts forming the joint, and thought to arise from dislocation. The head of the humerus, as well as neck and tuberosities, is quite destroyed, and the bone thereby very much shortened. In the place of the head is a large irregular mass of bone, having a facet which corresponds to a similar one on the scapula. The glenoid cavity and neck are quite destroyed, and on the edge of the scapula is merely a roundish flat irregular mass of bone, having an articular surface on the half of it; this is smooth and indurated.

1297<sup>50</sup>. Dislocation of shoulder-joint. The head of the humerus has been thrown on to the anterior part of the glenoid cavity and neck of scapula, where a new articulating surface has been formed. A raised eburnated surface on the head of the humerus corresponds to it. There is a production of new bone in the tendons of the joint.

1297<sup>70</sup>. Specimen, thought to exhibit dislocation of the shoulder-joint. There is considerable change in the parts, as a result of injury or of disease. The head of the humerus had been thrown out of the cavity, and a new socket is in process of formation. There is a large development of bone at the end of the acromion process, whereby a new articular surface is formed beneath it, corresponding to the head of the humerus, and on the outer side there are masses of new bone formed in the tendons, especially of the infra-spinatus. Part of the greater tuberosity of the humerus has been broken off, and around it is seen a production of new bone. The tendon of the biceps is split in two.

From a man who had a load of gravel fall upon him while in a stooping position. He at the same time injured his chest, which caused his death thirteen weeks afterwards.

See particulars of case by Mr. Hilton, in Guy's H. R. Series II., vol. v. page 93.

1298<sup>50</sup>. Dislocation of shoulder-joint. The head of the humerus is seen to have left the glenoid cavity, and is resting on the outer surface. Considerable change has taken place, and a quantity of new bone has been formed in the tendons around.

1298<sup>55</sup>. Old dislocation of shoulder-joint. The head of the humerus has formed a new articulating surface on the anterior border of the scapula. Existed for five years.

Case of William H., aged 29, patient of Mr. Hilton.

Record of Insp., No. 210. 1854.

1298<sup>60</sup>. Specimen sent to the museum as one of fracture of the acromion process, in consequence of there being a large detached portion of bone at its extremity. It appears, however, to have been a new production, and the result of chronic rheumatic arthritis, as in some preceding specimens. By meeting with the acromion process, it forms by its under surface an articulating surface for the upper part of the head of the humerus. There is also some new deposit of bone around the latter.

#### ELBOW JOINT.

1298<sup>75</sup>. Condyle of humerus, showing a peduncular ossicle in the fossa of the olecranon.

1298<sup>77</sup>. A similar specimen.

1298<sup>89</sup>. Elbow-joint, showing wasting of cartilages on corresponding surfaces of radius and humerus.

From Dissecting-Room. Mr. Hilton.



1299. Elbow-joint, amputated for scrofulous disease. One of the condyles of the humerus is partially necrosed and exposed, and the soft parts around are ulcerated.

1300. Diseased elbow-joint, exhibiting commencing ligamentous ankylosis; an injected preparation.

Sir A. Cooper.

1301. Inflammation of elbow-joint and the neighbouring bones. A quantity of new vascular membrane is seen within; the cartilage is partly absorbed with caries of the articular extremities of the bones, and the latter are seen above covered with new osseous deposit.

1301<sup>50</sup>. Elbow-joint extensively diseased. The whole synovial membrane is covered with lymph, and converted into a pulpy tissue; the articular cartilage is exfoliating in large pieces, and parts of the ends of the bones are carious, and olecranon detached.

1301<sup>75</sup>. Upper ends of radius and ulna, showing a quantity of adventitious membrane covering them. Some portions of necrosed bone are seen at the bottom of the articulating surface.

1301<sup>76</sup>. A specimen from the same subject of the lower end of the humerus, showing the same kind of membrane upon the articulating surface, with much surrounding thickening; there are also portions of necrosed bone.

1302. Section of humerus and elbow in which ankylosis followed disease of the joint. The ulna and humerus meet at a right angle; no trace of division can be seen between them, so perfect a fusion of the bones having occurred, or rather this is due to a production of new bone, which has taken the place of the original ones. The whole of the shaft of the humerus has undergone necrosis, a part of which is now seen as a loose sequestrum in the midst of the new bone. The latter consists of osseous structure of the

densest character, and the walls are thrice as thick as ordinary. The head of the bone appears to have been unaffected, nor does the head of the radius appear involved.

Case of Samuel J., aged 40, under Mr. Morgan in 1828. He was admitted for necrosis of the humerus, of which several portions had already been removed. Although the elbow was fixed, rotation of the fore-arm was perfect.

6. Green Insp. Book, p. 79.

1302<sup>1</sup>. The corresponding section of above, dried. In this, the fistulous openings are seen, which communicated with the sequestrum within.

1302<sup>10</sup>. Parts removed in excision of the elbow-joint. The cartilage is seen to have been destroyed in several places. Recovery.

From a child, a patient of Mr. Hilton's. 1853.

1302<sup>15</sup>. Parts removed in excision of the elbow-joint. On the condyles, large portions of the cartilage have been absorbed, and on the radius and ulna scarcely any is left, thus leaving the bone bare and carious beneath. The inflammation had extended some distance along the bones, for at the point of section of the ulna some new osseous tissue is seen on the surface, the result of periostitis.

From a lad, a patient of Mr. Hilton's. Recovery.

1302<sup>20</sup>. Portions of humerus, radius, and ulna, from which the articular ends had been excised for disease of the joint. The surfaces are slightly carious, and the extremities enlarged by a deposition of new bone around them.

Case of Margaret J., aged 29, under Mr. Birkett in May, 1855, for disease of the right elbow-joint, of a year's duration. On the 28th an incision was made, the olecranon removed, together with articular surface of humerus. The girl returned to the country, when suppuration continuing and her health failing, the arm was amputated by Mr. Rump of Wells, Norfolk. There were open sinuses leading to the ends of humerus, ulna, and head of radius; the extremities of the two former bones were tolerably healthy, but that of the radius was carious, and firmly united to the ulna. Vascular granulations about the ends of the bones. Recovery.

1303. Elbow-joint, exhibiting ulceration of the cartilage, and partial membranous ankylosis. The bone appears sound.

Amputated by Mr. Morgan.

- 1303<sup>25</sup>. Bones of elbow-joint, exhibiting chronic rheumatic arthritis. The edges of the bones are fringed with new osseous excrescences, by which they are enlarged and much altered in shape. The inner articular surface of the humerus is diminished in size, while the external one is enlarged and flattened. The head of the radius, in like manner, is broader and larger, from a deposition of new bone upon it. The cartilages have been destroyed in many places, and the articular surfaces eburnated.

- 1303<sup>30</sup>. A similar specimen, in which the ends of the bones are enlarged by a deposit of osseous matter on their edges resulting from chronic rheumatic arthritis. The articular surface of the outer condyle is seen to be eburnated and polished.

- 1303<sup>50</sup>. Ends of radius and ulna which have been involved in disease of the elbow-joint; a quantity of flocculent membrane is surrounding them, the cartilages are destroyed, and at the end of the ulna is a large cavity formed by the removal of necrosed bone.

*The following six specimens show perfect bony ankylosis or synostosis of the elbow-joint.*

1304. Bones of arm, showing perfect osseous union between ulna and humerus, which meet at a right angle.
- 1304<sup>15</sup>. Firm bony ankylosis of the elbow-joint, the bones meeting at a very obtuse angle. The disease has probably been secondary to a fracture; for a deep fissure at the upper part of the ulna, looks as if its head had been broken by an oblique fracture.

- 1304<sup>25</sup>. Firm bony union between ulna and radius at a right angle. It appears to have originated from a fracture of the

humerus, for both condyles have a deep fissure passing down them into the joint, as if they had been broken entirely through. The articular surface for the head of the radius is seen at the junction of the bones.

1304<sup>30</sup>. Elbow-joint ankylosed at an obtuse angle. Both the bones of the fore-arm are firmly fixed to the humerus. From the great angularity of the bones, and their fissured condition, it is probable that the inflammatory process originated in injury.

1304<sup>35</sup>. Elbow-joint ankylosed almost in a straight line.

1304<sup>50</sup>. Ankylosis of elbow at a little above a right angle. Both the radius and ulna form a solid bony union with the humerus, and they are both thrown very much forward. It is possible that the disease, in this case, may have resulted from injury, as the neck of the humerus has been fractured, though now well united.

1305. Bones of elbow-joint, showing result of chronic rheumatic arthritis. Their ends are much enlarged by a deposition of new bone on the edges; this is seen particularly in the coronoid process of ulna and head of radius. Several distinct portions of new bone are developed within the ligaments.

1306. Old and partial dislocation of the ulna inwards.

Presented by Mr. C. Fagge of Hythe.

1306<sup>32</sup>. An old and partial dislocation of the elbow-joint; the radius thrown outward, and its head so much altered by absorption that rotation must have been nearly or quite impossible.

1306<sup>40</sup>. Dislocation of the head of the radius forwards and upwards. It is much altered in form, having two vertical grooves upon it, and the cup-like depression on the top has dis-

appeared, while that part in contact with the humerus still retains its cartilage.

From a man, 50 years of age, to whom the accident occurred about seven years previous to his death. The luxation could not be reduced, and thus the bone remained permanently displaced. The joint could be flexed to a great extent, and supination and pronation were limited.

See details of case by Mr. Hilton, Guy's H. Rep., Series II., vol. v. page 96.

- 1306<sup>56</sup>. Fore-arm of an adult defective below the elbow, the radius ankylosed, and supporting a carpus with digital phalanges; a rudimentary ulna is ankylosed to the humerus.

From a female, aged 76.

Presented by Mr. Cock.

- 1306<sup>59</sup>. Radius and ulna ankylosed above, the former displaced backwards: casts of specimens in St. Thomas' museum, taken from a man of middle age.

- 1306<sup>64</sup>. Bones of the upper and fore-arm semiflexed, but without ankylosis. An old dislocation of the radius upwards and backwards, by which the articular end of the bone is thrown quite off the humerus, and just below is a smooth hollow space which is fitted to the outer condyle.

- 1306<sup>90</sup>. Bones of fore-arm ankylosed above in a semiprone position.

1307. Dislocation of the elbow-joint, and much change in the articular ends of the bones in consequence. Both ulna and radius are thrown backwards, and the articular surfaces of the condyles are altered to their new position. The inner condyle is rounded, and elevated by a portion of bone in front for the ulna; and a hollow space on the external condyle, protected by a raised process of bone behind, contains the head of the radius.

## WRIST, CARPAL, AND PHALANGEAL JOINTS.

1309. Section of hand, showing inflammation of the carpal-joints, also of the wrist, with ulceration of the inter-articular cartilage of the ulna.

1309<sup>40</sup>. Preparation, showing the bones of the carpus; the carpal extremities of the metacarpal bones, and the carpal ends of the ulna and radius, are entirely denuded of cartilage. The disease commenced as a whitlow on one of the fingers, occasioned by a punctured wound. Extensive inflammation and suppuration surrounding the joint. Injected.

Removed by Mr. B. Cooper.

1309<sup>50</sup>. Two sections of the carpus, with ulceration of the articulations, and an external opening at the back of the hand.

1310. Section of hand, showing extensive disease of the bones of the carpus; the cartilage between many of the bones has been destroyed, and the bones are ankylosed. There also appears a ligamentous union of the wrist-joint.

1311. Finger, amputated for disease of one of the joints, with necrosis.

1311<sup>10</sup>. Section of finger, showing pulpy degeneration of one of the joints. The synovial membrane is nearly half an inch thick, by the effusion of an adventitious lymph which has become organized into nucleated fibres.

Edward C., aged 20, under Mr. Bryant, who removed his finger in 1857. Eleven months before, the patient cut his finger over the joint; the wound healed, but the joint inflamed, and became much enlarged.

1312<sup>50</sup>. Dislocation of the middle bone of the thumb forwards upon the first bone.

1313. Dislocation of the finger between the metacarpal bone and the first phalanx.

Mr. J. Stocker.

1313<sup>10</sup>. Dislocation between the first and second phalangeal bones of a finger.

## PELVIC JOINTS.

1314. A section of the ossa pubis, showing the state of reparation of a fractured portion. There appears also to have been some violent separation of the articulation.
- 1314<sup>16</sup>. Symphysis pubis of a woman, which forms an inflamed cavity.
- 1314<sup>25</sup>. Pelvis of a male, showing ankylosis of the pubes.
- 1314<sup>30</sup>. Pelvis of a male, showing ankylosis of the pubes, and considerable growth of new bone around it.
- 1314<sup>50</sup>. The bones of the pubes, and a small portion of the bladder from a female. The sychondrosis is ossified and carious, and there are several tracks of ulceration, one of which opens into the bladder.

Presented by Mr. Gazelee.

## HIP JOINT.

1315. Head of a thigh-bone, from which a portion of the articular cartilage has been absorbed, and it appears as if some reparative action was going on around it.

Case of Sarah H., an old woman under Dr. Cholmeley in 1827, for a paralytic attack which came on suddenly three months before her death. Previous to this she was able to walk about. The disease was not suspected during life, but only found accidentally after death.

4. Green Insp. Book, p. 100

- 1315<sup>50</sup>. Head and neck of the os femoris, in which the ligamentum teres at its insertion is almost destroyed; short flocculi of tendinous matter remaining attached to the bone. The cartilage on the internal part of the head, and around its edge to the extent of two-thirds of its circumference, is destroyed, the bone being denuded. The cartilage between the epiphysis of the head of the shaft is nearly removed.

1316. Absorption of articular cartilage near the ligamentum teres, and loose osseous bodies in the condensed cellular structure, near the trochanter.

Case of Mary S., under Mr. B. Cooper in 1826. She had been in the hospital about a year.

1. Green Insp. Book, p. 20.

- 1316<sup>25</sup>. Part of an adult acetabulum, with an adventitious bipeduncular cartilage.

- 1316<sup>50</sup>. Portion of the head of a femur, together with some albuminous grains, or melon-seed bodies, found loose in the joint. There is a loss of cartilage near the ligamentum teres, and some adventitious membrane.

Case of Isabella D., aged 26, a patient of Mr. Key in 1838.

13. Misc. Insp. Book, p. 26.

1317. Upper part of femur and os innominatum, showing great destruction of the bones from hip-joint disease. The head of the femur is quite gone, there remaining an irregular mass of bone formed by the neck, and which lay in the acetabulum. The surface of the latter is also carious, and at its bottom is a perforation by which the joint communicated with the pelvis. There appears to have been some attempt at ankylosis.

From a patient of Mr. Key's before the year 1829.

- 1317<sup>7</sup>. Hip-joint of a young person, in which necrosis of the bones has taken place, in consequence of inflammation of the joint. The head of the femur is almost destroyed, and the acetabulum is carious throughout.

From a boy 12 years of age, who lay for some time with his thigh flexed on the abdomen.

From Mr. Bryant's collection.

- 1317<sup>11</sup>. Disease of the hip-joint in a young subject. The cartilage and articular surfaces are quite gone, and the bones, both of femur and acetabulum, are carious.



1317<sup>15</sup>. Bones of the hip-joint from a little girl. The joint is quite destroyed, part of the head gone, the acetabulum carious, and a hole passing through it into the pelvis.

1317<sup>20</sup>. Inflammation and suppuration of hip-joint. A quantity of flocculent membrane is seen within, and destruction of the cartilage in some parts. The ligamentum teres is also destroyed.

Presented by Mr. Cock.

1317<sup>25</sup> Wasting of the head of the femur from old disease and dislocation. Only a trace of the epiphysis is seen on the head of the bone, and the trochanter major is reduced to a small protuberance.

Case of Anthony B., aged 8, under Mr. Hilton for disease of hip-joint, from which he had suffered two and a half years, with open sinuses around joint. The acetabulum was black and carious. He died of general tuberculosis.

Prep. of atrophied kidney, No. 2026<sup>20</sup>.

Record of Insp. 24. 1855.

1317<sup>40</sup>. Left os innominatum, and upper third of os femoris, showing great destruction of the bones from hip-joint disease. The head of the bone has entirely disappeared, and there only remains a small necrosed portion of the neck attached to the trochanters. The acetabulum has also suffered in like manner, and is perforated at its bottom by a hole which passes into the pelvis. The surrounding parts of the innominatum show the numerous abscesses which existed about the joint.

Case of Joseph R., aged 10, under Mr. Key in 1834. He had suffered for two years with disease of the joint, and attendant abscess. Preparation of artery, from which hæmorrhage took place, 1504<sup>80</sup>; and lardaceous liver, 1896<sup>20</sup>.

6. Miscell. Insp. book, p. 28.

1317<sup>60</sup>. Destruction of hip-joint by disease. The head of the bone is carious and wasted, and at the neck a dead portion is seen. The walls of the acetabulum are necrotic, and the latter communicates with the pelvis within.

- 1317<sup>70</sup>. Bones of hip-joint in state of necrosis. About half of the femur is destroyed. The surface of acetabulum is necrotic, and the tuberosity of the ischium contains also a large mass of necrotic bone.
- 1317<sup>75</sup>. Bones of hip-joint in state of necrosis. The head is nearly destroyed, and the acetabulum contains a large mass of necrotic bone. The surrounding parts have a quantity of new bone around them.
- 1317<sup>80</sup>. Hip-joint in a state of suppuration, with much deposition of lymph and thickening of articulation. The trochanter major contains a large sequestrum, and immediately below, at the upper part of the shaft, is a large aperture formed by the loss of bone. The disease of the joint has probably been secondary to the diseased bone below.
- 1317<sup>90</sup>. Suppuration of hip-joint, with necrosis of bone. The whole articular cavity is filled with lymph, and the surface of head of bone where seen, as well as the acetabulum, is undergoing necrosis. A large purulent cyst is seen at the back of the joint.
1318. Extensive disease of the hip-joint. The head of the femur is partially destroyed, and a large part of the acetabulum contains necrotic bone.
- 1318<sup>8</sup>. Extensive disease of the hip-joint. The head of the bone is quite destroyed, there being merely a small process of bone representing the neck growing out from the trochanters. The acetabulum corresponds in shape and size to this, being much contracted by the deposition of lymph (styled strumous matter) within. It appears as if the diseased action had ceased, and a ligamentous process of union was commencing.
- 1318<sup>16</sup>. Head of femur belonging to a diseased joint, showing the

articular surfaces destroyed, and the bone carious. The neck and upper part of shaft is enlarged by periostitis.

Case of James W., aged 38, who died under Dr. Back's care in 1838, for phthisis. There were large abscesses about the hip, and sinuses leading to the acetabulum.

14. Misc. Insp. Book, p. 31.

1318<sup>18</sup>. Disease of the hip-joint, showing great destruction of the head of the bone, but apparent repair proceeding.

1318<sup>20</sup>. Upper part of the thigh-bone in case of hip disease, showing total destruction of its head and neck, the necrosis penetrating even to the trochanters, and excavating them.

Case of Matilda J., aged 22, under Mr. Key in 1841.

18. Misc. Insp. Book, p. 74.

1318<sup>21</sup>. Part of ilium of same case, showing caries of the bone.

1318<sup>24</sup>. Head of a femur macerated, from a case of soft ankylosis of the right hip-joint. It is reduced in size, and flattened.

Case of William S., aged 47, who died under Dr. Bright with phthisis in 1840. The head of the right femur was partially destroyed, but had become ankylosed to ilium by soft ankylosis, so that there was only slight motion.

17. Misc. Insp. Book, p. 79.

1318<sup>28</sup>. Two sections of ankylosed hip-joint; the union is by perfect bone, the cancellous structure being continuous, as well as the dense walls on the external parts.

1318<sup>32</sup>. Ankylosis of hip-joint. There is perfect osseous union between the bones, although all trace of their original separation is not quite lost.

Case of John D., aged 19, under Mr. Morgan in 1828. For several years he had suffered from hip disease, with open sinuses; the cellular tissue around the joint was very dense, and like cartilage. He died of diseased liver and kidneys.

Preparations of chronic cystitis, from same case, No. 2092<sup>16</sup>.

6. Green Insp. Book, p. 135.

1318<sup>33</sup>. Counterpart of the preceding specimen.

1318<sup>35</sup>. Section of hip-joint of a child, in which there has been destruction of the synovial membrane and cartilage. A part also of the epiphysis of the bone has been destroyed, and the head and acetabulum have been pretty accurately fitted. There is fibrous tissue between them, and ligamentous union has commenced.

1318<sup>40</sup>. Two sections of ankylosis of the hip-joint. The union, however, is not yet perfect; there is a continuous osseous structure in some parts, but in others the original line of the femur is still seen, or rather of the remains of the neck, which penetrates the correspondingly altered acetabulum, the head of the bone being quite destroyed. There are also hollow spaces, from which dead bone has proceeded. On the exterior, also, there is much development of new osseous tissue, showing the reparative process was still going on.

Case of James S., aged 46, under Mr. Morgan in 1839, for stricture and cystitis; there were numerous scars around the joint.

16. Misc. Insp. Book, p. 159.

1318<sup>45</sup>. Ankylosis of hip-joint. There is perfect bony union, but a hollow place is seen within, which has contained a sequestrum.

1318<sup>48</sup>. Complete ankylosis of the hip-joint. There is a perfect bony union, and the interior cancellous structure is continuous, as are also the external dense walls.

Case of James K., aged 42, who died of phthisis in 1842. He had been a horse-keeper at the Horns Tavern, Kennington, for several years, and had a stiff joint for thirty years.

From Mr. Bryant's collection

1318<sup>49</sup>. Counterpart to preceding.

1318<sup>51</sup>. Complete ankylosis of hip-joint. There are large bony excrescences or exostoses surrounding it.

1318<sup>53</sup>. Complete bony ankylosis of hip-joint.

1318<sup>55</sup>. Ankylosis of hip-joint. The union is not yet complete, and the edge of the acetabulum is still seen covering the head of the femur.

1318<sup>60</sup>. Complete bony ankylosis of the hip-joint.

Mr. Cock.

1318<sup>65</sup>. Ankylosis of the hip. The union is merely by ligamentous structure, and the cartilage is still seen remaining. It has been caused simply by disuse, there being no disease of the parts.

Case of James L., aged 27, admitted under Mr. Hilton in July, 1854, for synovitis of the right knee. Subsequently suppuration took place, and the leg was amputated in April, 1855. He slowly recovered, but again took to his bed in January, 1856, for suppuration about the left hip and pelvis; this communicated with the rectum, and at the same time the hip of the amputated limb became quite stiff. At the latter end of April he died.

Preparation of knee-joint 1335<sup>10</sup>, and drawing 33<sup>13</sup>; rectum with fistulous opening 1882<sup>6</sup>.

Record of Insp. No. 95. 1856.

1318<sup>70</sup>. Hip-joint, showing partial ankylosis. The articular surfaces are quite destroyed, and there is some slight bony deposit in a few places between them, but elsewhere the connecting tissue is merely ligamentous; some small portions of necrotic bone are still seen.

Case of James D., aged 18, under Mr. Hilton's care, and who at the time of his death had suffered from disease of the hip for more than four years, with open sinuses. In April, 1853, when he left hospital after fifteen months' illness, the joint was quite stiff, and he subsequently walked on crutches. He was again admitted in December, 1855, with impaired health, and he died in March.

Preparation of lardaceous liver and spleen; see 1896<sup>25</sup> and 2005.

Record of Insp., No. 71. 1856.

1318<sup>71</sup>. Dried section of same, showing the general inflammation and expansion of the bone around the joint, seen especially in the section of the os innominatum.

1319. Head of the thigh-bone affected with chronic rheumatic arthritis. There is a quantity of osseous deposit all around it, as well as on the neck; the articular cartilage is destroyed, and the bone is highly polished.

1319<sup>10</sup>. Bones of the hip-joint, showing chronic rheumatic arthritis. There is a quantity of new bone all around the head of the femur, as well as on the neck and trochanters; and the articular surface is polished. The acetabulum is also deepened by deposit around its edges, and here also the cartilage is destroyed, and the surface eburnated.

Case of John S., aged 87, who fell down in December, 1834, and died in February, 1836. It was thought that he had fractured the neck of the thigh-bone, and the appearances found after death were thought not to preclude the possibility of this having taken place.

From Mr. Bryant's collection.

1319<sup>20</sup>. Head of femur enlarged, and altered in shape by chronic rheumatic arthritis.

1319<sup>24</sup>. Head of femur affected with similar disease, in which the new bone formed around projects in a great degree, forming indeed an exostosis.

1319<sup>26</sup>. Femur and os innominatum, showing chronic rheumatic arthritis of the hip-joint. The head of the former has a large rim of new bone around it, as well as a projection near the ligamentum teres. The acetabulum is also increased in depth and thickness by new bone, and at its bottom is a perforation.

1319<sup>28</sup>. Femur, whose head is much altered in shape by chronic rheumatic arthritis; a quantity of new bone is developed all over it, but especially at its lower part, and on neck.

1319<sup>30</sup>. Femur, in which the head of the bone is very much altered by chronic rheumatic arthritis; the neck has entirely disappeared, and with it the adjoining or under part of the head; the articular surface is thus flattened and expanded, and lies on the trochanter major and below its summit. The surface is highly polished.

- 1319<sup>32</sup>. Femur, with the head very much altered by chronic rheumatic arthritis. The whole surface is expanded by a deposition of new bone, and the prominent parts are eburnated.
- 1319<sup>36</sup>. Sections of head of femur with acetabulum, showing the change produced by chronic rheumatic arthritis. The former is much reduced in thickness, though somewhat increased in breadth by a deposition of new bone on its edges. The acetabulum probably belongs to the same case; it is much deepened by deposition of new bone on its margin.
- 1319<sup>40</sup>. Section of head of femur, with a thin deposition of new bone all around it, as a result of rheumatic arthritis.
- 1319<sup>50</sup>. The right os innominatum, showing a deep triangular cavity (once the acetabulum) which presents doubtful traces of former ulceration. Above this, on the superior and posterior cotyloid margin, there is a wide plain articular surface, which has been formed by the displaced head of the femur. Whether this has occurred from disease alone, or disease subsequent to dislocation, is doubtful.

Presented by Mr. Gardiner.

1320. Dry preparation, showing dislocation of the head of the femur on the dorsum ilii. The dislocation has evidently been of long standing, for the acetabulum is almost closed, and a new articular surface is seen above it. The latter, however, is smooth and very slightly cup-shaped, no deposit of bone being yet formed around it. The head of the bone is reduced in size, and the articular surface flattened; the neck also is much shortened.
- 1321<sup>50</sup>. The principal part of the capsular ligament much thickened and condensed, from a hip-joint in which the femur had been dislocated on the pubes.

From Mr. Howship's collection.

- 1321<sup>55</sup>. Head of femur which had been dislocated twenty-two times; the ligamentum teres is totally destroyed.

Case of Emily G. See prep. 1369<sup>55</sup>.

- 1322<sup>32</sup>. Dislocation of head of femur on to brim of pelvis, just on inner side of anterior and inferior spinous process of ilium. The old acetabulum is very much reduced in size, from the deposition of osseous matter, and above it is placed the new acetabulum, formed partly by the body of the pubes and partly by the inner side of the inferior spinous process of ilium. The former resembles the natural cavity, though not of equal dimensions. On the outer and inferior side—that is, above the old acetabulum—is a smooth articular surface, upon which the posterior and upper part of the trochanter major rested, and moved in the newly-acquired motions of the joint. The shape of the head of the femur is altered, so as to be adapted to the new acetabulum; but its posterior and upper part only have been in contact with the latter, and on the upper part of trochanter major is the above-named articular surface.

Case of John F., aged 28 when he died. Sixteen years before, his thigh was dislocated by a severe blow. In a few days he could walk, though only on the toes, and the foot was everted; after a few years, he could walk as many miles as he had done before the accident.

Drawing, 30<sup>20</sup>.

Presented by Mr. Oldnow of Nottingham, to Sir A. Cooper.

See Guy's Hosp. Reports, Vol. I. page 97.

- 1324<sup>25</sup>. Femur, the upper part of which had been long dislocated into the ischiatic notch. The head is altered in shape, being narrowed, and having a deposition of bone around its margin.

Presented by Mr. Silk.



## KNEE JOINT.

1325. Condyles of the os femoris, exhibiting recent and acute inflammation of the synovial membrane and cartilage.

From Mr. F., a patient of Mr. C. A. Key. He was labouring under stone in the bladder, and ten days before his death he was seized with acute inflammation of the knee-joint. The knee-joint was found full of purulent fluid; there was no external opening.

- 1325<sup>50</sup>. Condyles of femur with a circumscribed depression from loss of cartilage.

From the Dissecting-Room. Mr. Hilton.

1326. Condyles of the os femoris, exhibiting recent and acute inflammation of the synovial membrane and cartilage.

- 1326<sup>50</sup>. Knee-joint removed from a boy who had received an injury with a bill-hook. The patella is seen cut through obliquely, and the outer condyle is wounded. There is some loss of cartilage.

Case of John B., aged 9, who wounded his knee in the above-mentioned manner. Inflammation and suppuration followed, and he died of pyæmia.

Presented by Mr. Bottomley of Croydon. 1833.

1327. Knee-joint exhibiting extensive destruction of the articular cartilage on the condyles of the os femoris, on the head of the tibia, and on the patella; the other textures little affected. The bone around is also inflamed.

From a patient of Mr. Key.

- 1327<sup>50</sup>. Knee-joint showing articular surfaces covered with gouty deposit. A thick layer of mortar-like matter is seen covering the cartilages, and this, analysed by Dr. Rees, was found to be urate of soda. Masses of concretion of

a similar kind are seen also in the synovial membrane and the surrounding cellular tissue; the largest of these deposits was half an inch thick, and nearly two inches long.

Prep. of kidney from same case, affected with Bright's disease; see 2038<sup>64</sup>.

1328. Knee-joint, of which the outer semi-lunar cartilage, and the cartilage from the outer condyle of the os femoris, and also that from the corresponding surface of the tibia, are absorbed; the knee was strongly turned in, in consequence. This preparation was found in the dissecting-room; there was no appearance of recent disease of the joint. The surface of the bone is hard, but not eburnated.

1329<sup>10</sup>. Patella and condyles of the femur, showing inflammation of synovial membrane, and commencing absorption of cartilage.

Case of Thomas L., aged 32, under Mr. Morgan in 1841. He had suffered with his knee slightly for two years, and severely for a month; the leg was amputated, and the man died subsequently of phthisis.

17. Misc. Insp. Book, p. 348.

1329<sup>11</sup>. Tumid, injected, softened, and ulcerated semilunar cartilage, from the preceding case.

1329<sup>20</sup>. Synovial false membrane.

From John S., aged 44, under Mr. B. Cooper in 1840 for inflammation and suppuration of knee, produced by a fall three months previously. The limb was amputated, and he recovered.

17. Misc. Insp. Book, p. 214.

1329<sup>40</sup>. Section of knee-joint of a child, injected, showing a vascular false membrane covering the articular surfaces.

1329<sup>41</sup>. A semilunar cartilage from same joint, showing the membrane finely injected under a state of inflammation.

Limb amputated by Mr. Key.

1329<sup>50</sup>. Articular adhesion and atrophy of articular cartilage, the result of inflammation.

Case of Ishmael W., aged 30, who had his leg amputated in 1840.

17. Misc. Insp. Book, p. 305.

1329<sup>55</sup>. Diseased knee-joint, with fistulous openings passing into it. The cartilages appear to be in great measure destroyed, and ankylosis is taking place.

From Charles W., aged  $3\frac{1}{2}$  years, whose limb was amputated by Mr. Hilton in April, 1855. The child's knee was said to have been enlarged and contracted since he was a few months old. Recovered.

1329<sup>57</sup>. Knee-joint which has undergone the operation of resection. The condyles have been cut off, as well as the articular surfaces of tibia and patella. No union has taken place, and the extremities of the bones have somewhat slipped off one another. At the back of the jar the ulcerated articular surfaces are seen.

Case of William B., aged 34, admitted under Mr. Birkett in January, 1855, for disease of the right knee-joint, from which he had suffered for three years. On May 29, the joint was excised; hospital gangrene subsequently attacked the limb, and it was necessary to amputate it on July 6. Sloughing again occurred, but eventually the man recovered.

Drawing, 31<sup>81</sup>.

1329<sup>60</sup>. Knee-joint amputated by Mr. Key. The synovial membrane is thickened, villous, and highly vascular, and has effected a remarkable absorption, without ulceration of the articular cartilage on the patella and condyles of the femur. The patient was received into accident ward, having received a wound from an axe, by which the internal ligament was divided, and the semilunar cartilage injured. An abscess extended from the joint high up the thigh. Amputation was resorted to five weeks after the accident.

Drawing, 32.

This preparation, and some others, illustrated Mr. Key's views of the absorption of cartilage, by means of a newly-formed vascular membrane.—*See Med. Chir. Trans., Vol. XVIII.*

1329<sup>65</sup>. Diseased knee-joint, showing a fistulous opening through the patella.

Case of Peter F., aged 4 years, under Mr. Cock in March, 1853.

Drawing, 31<sup>80</sup>.

1329<sup>70</sup>. Diseased knee-joint, showing almost entire destruction of cartilage on the condyles, except over some small spaces. The medullary canal of the femur is enlarged, and the cancellous structure absorbed. The patella shows the thickened and flocculent synovial membrane.

Case of John C., aged 49, under Mr. Hilton in July, 1854. He had suffered from diseased knee-joint for three years. Amputation and recovery.

For further history see drawing, 31<sup>20</sup>.

1329<sup>75</sup>. Dried preparation of diseased knee-joint on left side, with partial dislocation. The disease has been almost entirely confined to the epiphysis. The femur is rotated inwards, so that the outer condyle is entirely thrown off its corresponding articular surface, and rests by a long process of bone which takes its place on the spine of the tibia. The patella is thus attached to the outer condyle.

From the Dissecting-Room.

1329<sup>88</sup>. Condyles of femur showing partial absorption of cartilage, and, in places of latter, raised patches of false membrane.

1329<sup>89</sup>. Head of tibia from same case, showing loss of cartilage and lymph in the joint.

1329<sup>90</sup>. Semilunar cartilages from same case.

1329<sup>91</sup>. Patella from same case.

1332. Knee-joint showing the destruction of the outer semilunar cartilage with suppurative inflammation of the synovial membrane, absorption of the articular cartilage on the same side, disorganization of the semilunar cartilage, and adhesion of the synovial membrane, without suppuration on the inner side.

From a patient of Mr. Key.

1332<sup>5</sup>. Ulceration of the cartilage of the patella, from same case.

1332<sup>50</sup>. Surface of the knee-joint showing effects of acute inflammation, with absorption of cartilage in some places, and its separation in large flakes in others.

1333. Knee-joint amputated by Mr. Key. There is extensive inflammation of the synovial membrane, destruction of the semilunar cartilage, and absorption of the articular cartilage; some projecting portions of the articular ends are eburnated.

1333<sup>50</sup>. Inflamed knee-joint showing destruction of cartilage.

From William J., aged 11, whose leg was amputated in 1836. The disease had existed for sixteen months.

From Mr. Bryant's collection.

1334<sup>25</sup>. Condyles of femur showing destruction of cartilage; and in one, of which a section has been made, some necrotic bone exists.

Drawing, 33<sup>32</sup>.

1334<sup>38</sup>. Knee-joint of a young person ankylosed at an acute angle. The union appears to be merely ligamentous.

Case of William Y., aged 16, under Mr. B. Cooper in 1840. The disease had existed six years; limb amputated. Recovery.

17. Misc. Insp. Book, p. 234.

1334<sup>50</sup>. Section of knee-joint showing ligamentous ankylosis; remains of abscess are seen around the ligamentum patellæ.

The limb was amputated by Mr. B. Cooper, and had been affected for several years.

1334<sup>75</sup>. Section of a knee-joint amputated by Mr. B. Cooper, from a young patient. There is complete ligamentous ankylosis between the articular surfaces of the tibia and os femoris. There is a small abscess partially separating the epiphysis of the tibia from the shaft of that bone, and which communicated by a sinus with an abscess situated exterior to the tuberosity.

1334<sup>81</sup>. Cartilage of the knee-joint undergoing gradual destruction.

1334<sup>84</sup>. Head of tibia in case of diseased knee-joint, showing necrosis of the bone.

Case of Thomas H., aged 32, who had his leg amputated in 1840 for disease which had existed two years.

17. Misc. Insp. Book, p. 136.

1334<sup>85</sup>. Condyles of femur from same case, showing flocculent new membrane covering the articular surface.

1334<sup>86</sup>. Patella similarly affected.

1334<sup>87</sup>. Portion of synovial membrane, also from same case, showing large granulations arising from the surface, produced by inflammatory lymph.

1335. Longitudinal section of the knee-joint, showing ligamentous union between the tibia and femur, with adhesion of the latter to the patella; ankylosis commencing. The leg was amputated by Mr. Key, at the patient's request.

1335<sup>5</sup>. Counterpart to preceding.

1335<sup>10</sup>. Section of diseased knee-joint, showing commencing ligamentous ankylosis at a right angle. A few remnants of articular cartilage are still seen.

Case of James L., aged 27, who had his leg amputated for disease of the joint, produced by an injury ten months before.

For further history, see prep. 1318<sup>65</sup>.

1335<sup>20</sup>. Knee-joint in which ankylosis has occurred, and the uniting tissue subsequently softened. The bare ends of the femur and tibia are seen to be well fitted, but there is no union between them.

Case of Elizabeth W., aged 53, who had her thigh amputated on January 24, 1856. Twenty-seven years before, she fell on her knee

and was in Guy's for synovitis of the joint; she subsequently went to Margate, where suppuration occurred, followed by a stiff but useful limb. For the twenty-two years following, the limb had been a useful member; but two years before the above date, she accidentally struck it, when it became inflamed and afterwards suppurated. The examination of the limb seemed to show, as in the preparation, that osseous ankylosis had once occurred, and the uniting medium had again degenerated from the second inflammation.

- 1335<sup>30</sup>. Disease of the knee-joint with almost total destruction of cartilage, and partial dislocation of the bones.

Case of John G., aged 26, whose leg was amputated in February, 1856.

- 1335<sup>35</sup>. Knee-joint, showing total destruction of cartilage; and extensive necrosis of adjoining bones, produced by long-standing disease. The head of the tibia is thus hollowed out, and the ends of the condyles are very irregular, the projecting portions of which are eburnated. The patella is attached by ligamentous tissue to the outer condyle.

Case of George R., aged 27, under Mr. Birkett in 1855. His left knee had been bad for thirteen years, and quite stiff for five years. Acute inflammation and suppuration was suddenly set up, necessitating the amputation of the limb. Recovery.

- 1335<sup>40</sup>. Acute inflammation of knee-joint, showing the loosening of the semilunar cartilages.

Case of Thomas G., aged 30, under Mr. Hilton. Three months before amputation the knee became inflamed, and subsequently suppurated. When removed, it showed the synovial membrane soft, vascular, and flocculent; the cartilages ulcerated, and the semilunar cartilages attached only by their posterior ends. Hæmorrhage took place, and afterwards death. See prep. of artery, 1506<sup>65</sup>.

Record of Insp. No. 79. 1856.

1336. Disease of the knee-joint, with a growth of cartilage at the posterior part of the head of the tibia. The disease originated in the bone, which is seen to be necrosed. The cartilages are destroyed and loosened, and around the head of the bone, especially at its posterior part, there are

large nodules of cartilage equal to an egg in size; these grow principally from the periosteum, but at the same time there are distinct deposits within the cancellous structure of the bone.

Case of Josiah G., aged 35, under Mr. Cock. The disease originated in the head of the bone in consequence of a blow, necrosis took place, and some portions of bone were removed; but the joint subsequently became affected, and the limb was amputated. The man died of pyæmia.

Record of Insp. No. 167. 1857.

1337. Section of a diseased knee-joint, in which a dislocation forwards of the femur has taken place, and ligamentous ankylosis. A patient of Mr. B. Cooper.

1337<sup>25</sup>. Section of the knee-joint, showing firm but partial bony union of the patella to the extremity of the os femoris, and ligamentous union of the latter to the head of the tibia.

Amputated by Mr. Morgan, from a patient who had suffered several years from chronic inflammation of the joint.

1337<sup>26</sup>. A dried section, counterpart to the preceding.

1337<sup>30</sup>. Knee ankylosed at a right angle; the union is by bone.

1337<sup>45</sup>. Ankylosed knee-joint; there is a bony union between femur, tibia, and patella; and also between tibia and fibula.

1337<sup>50</sup>. Section of knee-joint, showing bony ankylosis (synostosis).

From a private patient of Mr. B. Cooper.

1337<sup>75</sup>. Section of a knee-joint from a young person, in which ligamentous ankylosis has taken place at an angle.

Removed by amputation from a patient of Mr. Morgan's.

1338. Section of a knee-joint from a young person, showing ligamentous ankylosis; also abscesses around, and deposit in the cancellous structure of the bone, which at the time of the amputation was styled tuberculous.



- 1338<sup>25</sup>. Patella,  
 1338<sup>26</sup>. Head of tibia, } showing recent soft ankylosis torn through  
 1338<sup>27</sup>. Condyles, } and injected.

1338<sup>50</sup>. Section of diseased knee-joint, showing partial ankylosis.  
 There are abscesses and fistulous openings around.

1339. Section of knee-joint, showing ligamentous ankylosis of the  
 bones at an acute angle. The union of the tibia to the  
 head of the fibula appears to be partly osseous. The shell  
 of the bones is much rarified.

Removed by amputation from William H., a private patient of Mr.  
 B. Cooper.

1339<sup>50</sup>. Knee-joint, showing firm bony ankylosis, and also disloca-  
 tion. The external condyle is thrown upon the inner  
 articular surface of the tibia, and the patella is firmly  
 united to the external condyle. The external lateral  
 ligament is seen to be still present, but the internal is de-  
 stroyed.

From a woman, 30 years of age, who died of phthisis.

From Mr. Bryant's collection.

1340. Head of tibia, showing serpiginous ulceration of the articular  
 cartilages, as well as caries of the bone beneath.

1340<sup>50</sup>. Two patellæ, the cartilage tumid and softened; when recent  
 it had a ragged appearance.

Dissecting-Room. Mr. Hilton.

1340<sup>60</sup>. Patella, the cartilage of which is irregularly tumid, softened,  
 and ragged.

Dissecting-Room. Mr. Hilton.

1341. Acute inflammation of the synovial membrane, with in-  
 cipient ulceration of the articular cartilage of the patella  
 injected.

1341<sup>50</sup>. Patella, with ulceration of cartilage, and deposition of coagulable lymph on the articulating surface.

From a patient of Mr. Key.

1343. Ulceration of the cartilage of the patella; injected preparation.

1343<sup>50</sup>. Lower extremity of a thigh-bone, the cartilage removed from the articular surface which is surrounded by an elevated bony rim in the situation of the attachment of the capsular ligament. This has probably been the result of chronic rheumatic arthritis.

1344<sup>10</sup>. Bones of the knee-joint, showing destruction of their articular ends. The condyles of the femur are deeply excavated by necrosis, and the head of the tibia likewise in its central part; the edges being hard and polished.

1344<sup>20</sup>. A cartilage from the knee-joint; two-lobed, partially ossified, with peduncular bodies on the surface.

Successfully removed by Mr. Key from a young woman.

1344<sup>30</sup>. Loose cartilage from the knee-joint. Operation fatal.

Drawing 33<sup>14</sup>.

1344<sup>40</sup>. A portion of loose cartilage from the knee-joint.

1344<sup>60</sup>. Loose cartilage, removed from the knee-joint of Mr. H. R., a private patient of Mr. Key. It had existed a year and a half, and no inconvenience followed the operation.

1344<sup>80</sup>. Knee-joint which appeared to have been long partially dislocated inwards from the effects of disease. Small pyri-form granulations are attached to some parts.

1345. Knee-joint dislocated from disease.

- 1345<sup>50</sup>. Dislocation of knee-joint from disease; the outer condyle is thrown on the inner articular surface of the tibia. The outer surface of the latter, which is thus exposed, contains a sequestrum of necrosed bone; the patella is attached to the outer condyle.

Case of John G., aged 18, a patient of Mr. B. Cooper, in 1830. The swelling in the knee commenced when he was about six years of age. It prevented him working in the spring of 1827, and became dislocated in June 1829.

See cast 151.

1346. Partial dislocation of the knee from disease; the outer condyle is thrown upon the middle of the tibia, and to this the patella is attached.
1347. A small tumor, called carcinomatous, attached to the synovial membrane of the semilunar cartilages.

From a knee amputated by Sir Everard Home.

Presented by Mr. W. King.

- 1347<sup>50</sup>. Sections of the condyle of a femur involved in carcinomatous disease; synovial membranes adherent.

Case of Mary S., aged 70, under Mr. Key. See also patella 1210<sup>97,98</sup> and calvaria 1081<sup>92</sup>.

19. Misc. Insp. Book, p. 144.

- 1347<sup>60</sup>. Section of knee-joint involved in carcinomatous disease; the integument presents a large fungous ulcer.

Case of Mrs. B., a private patient of Mr. Callaway, sen.

#### ANKLE JOINT.

1349. Lower extremity of tibia and fibula, showing a fissure in the articular cartilage of the former, probably the result of fracture, with little or no displacement.
1352. Ankle-joint disorganized from inflammation. The cartilage of the astragalus has quite gone, and there is much adven-

titious flocculent membrane between the bones. There is an external fistulous opening which communicates with the joints.

From the same case as prep. 1289.

1352<sup>12</sup>. Three principal surfaces of tarsal cartilages in a state of inflammation. Injected.

1322<sup>18</sup>. Inflammatory product between the tibia and astragalus.

1352<sup>25</sup>. Section of the ankle-joint, showing ulceration and absorption of the articular cartilage between the astragalus and os calcis, communicating with a large external ulceration.

Amputated by Mr. Key, from a private patient.

1352<sup>55</sup>. Dissection of right foot affected with talipes.

Case of Edwin E., aged 19, under Mr. Hilton in 1854. The leg was amputated, and he died of pyæmia.

See drawing 34<sup>60</sup>; prep. of stomach showing ulceration, 1802<sup>25</sup>.

Record of Insp. No. 110. 1854.

1352<sup>60</sup>. Bones of the foot united by their ligaments.

From a Chinese lady. Dissected by Mr. John Dalrymple.

See wax-model (pathological) 84.

1352<sup>75</sup>. Skeleton of the foot and ankle, in which there is deformity chiefly by inversion of the dorsum, the outer part of which is thus made the point of support. The relation and form of the bones are consequently much altered; the upper articular surface of astragalus looks forwards, and the tibia rests upon its inner side, and also forms an articulating surface with the os calcis. The tuberosity of the os calcis projects outwards and upwards as does the whole sole of foot. The other bones of the tarsus are also cramped and altered in shape.

1353. Ankylosis of ankle-joint after fracture. The ends of tibia, astragalus, and os calcis, are firmly united, as well as the broken malleolus.

- 1353<sup>10</sup>. Section of foot in which the astragalus has been removed for disease. The end of the tibia is seen resting on the os calcis, the cartilage of each being gone; there is no union between them, but it appears as if a new joint was in process of formation. The other bones of the tarsus are partially united together by fibrous tissue.

Case of George B., aged 42, admitted under Mr. Cock in May 1853, for disease of the bones of the tarsus, of long standing, with occasional discharge of necrosed bone; sinuses open, joint stiff. In December, some portions of astragalus were removed, and in September of following year Mr. Cock excised whole of astragalus and end of tibia. After this, the foot never quite healed, but small portions of bone occasionally came away, and in April, 1855, the leg was amputated. Made a slow recovery.

1354. Ankle-joint, seven weeks after compound dislocation, with fracture of inner malleolus and astragalus. The latter has its outer side split off into two pieces; these, however, together with the malleolus are all in process of union, and new bone is thrown out around them.

From a patient of Mr. Key.

1355. Dislocation of the tibia forwards, with fracture of both malleoli, which are badly united; much ossified callus deposited about the joint.

1356. Dislocated ankle-joint; both malleoli fractured.

1357. Lower portion of the tibia, removed in a case of compound dislocation of the ankle-joint.

- 1357<sup>50</sup>. Large portion of astragalus, removed to facilitate reparation of compound fracture, by Mr. B. Cooper.

The patient was a man, aged 48, who fell off the shaft of his cart in 1839, by which the foot was thrown inwards, and the astragalus dislocated outwards; the latter was also broken through the neck. Mr. Cooper cut out the bone and reduced the dislocation, but the man died ten days afterwards of tetanus.

2. Note-Book, p. 34.

1360. Scaphoid bone, from which a large portion of the articular cartilage has been removed by absorption.

1360<sup>25</sup>. Section of the foot, showing obliteration of the cartilage in all the tarsal joints, and the union of the bones by ligamentous tissue.

1360<sup>26</sup>. Dry parts of preceding case.

1360<sup>50</sup>. Second joint of the great toe affected with inflammation, and communicating with an extensive external opening. Both the metatarsal and phalangeal bones are diseased.

From a patient of Mr. B. Cooper.

1360<sup>55</sup>. Toe dislocated by the pressure of a shoe.

Amputated by Sir A. Cooper, at the request of the patient.

1360<sup>80</sup>. Section of a great toe affected with carcinomatous disease, which springs from the head of the right metatarsal bone internally and superficially. It is a fungating tumor, with an ulcerated surface, and fibres radiating from the fascia at its base.

From a patient of Mr. Morgan.

MUSCLES, TENDONS, APONEUROSES,  
BURSÆ MUCOSÆ, &c.

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1361. Osseo-cartilaginous tumor, removed from the neck of a young woman by Mr. Key. It consists of a bony shell, which is very dense and sends processes inwards, and between these there is a tough fibro-cartilaginous tissue. It differs from ordinary forms of bony growths, and it is not stated whence the tumor sprung, and thus its true nature is doubtful.

See drawing 37<sup>10</sup>.

- 1361<sup>30</sup>. A portion of dried muscle containing the "trichina spiralis." This preparation was described in the catalogue printed in 1829, and is probably older than this date; it is styled "portion of sterno-hyoid muscle speckled with numerous minute bony points." These have been examined by the microscope, and found to consist of as perfect bony cases and included worms as fresh specimens.
- 1361<sup>40</sup>. The larger muscles of the larynx affected with "trichina spiralis."
- 1361<sup>45</sup>. Fibro-plastic tumor from the neck, removed by Mr. Cock from Elizabeth M., aged 29, in 1856. It had been growing below the angle of the jaw for 11 years, and it was thought to have originated in a lymphatic gland. The cut surface, when fresh, was tough and translucent; it consisted of a close tissue of nucleated cells with a few blood-vessels.

1361<sup>46</sup>. Fibro-cartilaginous tumor removed from the neck of Caroline C., aged 26, by Mr. Callaway in 1856. It had been growing beneath the lower jaw for six years; it was very hard, of an opaque white color, resembling the section of a turnip. It consisted of a network of delicate fibres and nucleated cells, spreading into fibrous processes.

See drawing, with microscopic appearances, 197<sup>78</sup>.

1361<sup>47</sup>. Fibro-cartilaginous tumor removed from the neck of John B., aged 23, by Mr. Hilton in 1856. It had been growing for twelve years beneath the lower jaw, and a portion had been removed four years previously. It was larger than the preceding, being about the size of an orange, and consisted, like it, of a mixture of fibre-tissue and cartilage.

1361<sup>48</sup>. Fibro-cartilaginous tumor removed by Mr. Birkett from the neck of Mary Ann S., aged 41, in 1856. It had existed for fourteen years. Although the microscopic elements very much resembled those of the preceding specimens, it was more soft and succulent; it might with equal propriety be called gelatinous sarcoma.

Drawing 197<sup>79</sup>.

1361<sup>50</sup>. A portion of muscle in state of suppuration.

Case of Jeremiah P., aged 16, who died in the hospital in 1834 of general suppurative inflammation of pyæmia.

1361<sup>55</sup>. Two preparations of shoulder-joints, dried, showing the long-head of the biceps deficient.

1361<sup>57</sup>. Preparation of arm, showing the biceps muscle with three heads.

1361<sup>60</sup>. Tendons of one of the muscles of the back, partly ossified.

1362<sup>16</sup>. Portion of the rectus abdominis muscle, containing the trichina spiralis.



1362<sup>30</sup>. Fibrous tumor from the abdominal walls of a man, preserved to show its resemblance to a mammary tumor or adenocele of the female breast.

Record of Insp., No. 215. 1854.

1362<sup>30</sup>. *Cysticercus cellulosæ*, removed from the pectoral muscle of Anne V., aged 23, by Mr. Birkett in 1854. It had been noticed six months.

1362<sup>32</sup>. Cyst, of about the size of an orange, removed from beneath the *latissimus dorsi*, from a middle aged man by Mr. Morgan. It contained a sanguinolent fluid, and some membranous flakes of coagulable lymph. There are variously shaped peduncular bodies growing from its internal surface. It is probably a sebaceous cyst.

1362<sup>35</sup>. Melanotic tumor removed from the back by Mr. Birkett.

The patient, Harriet C., aged 34, stated that about six or seven years before its removal, she observed a mole on her back which occasionally bled, and that about fourteen months before the present tumor was removed, it fungated and was excised. In the cicatrix the melanotic tumor sprung up. This was removed, but she died a few days afterwards of hæmorrhage and exhaustion. No disease was found internally.

Record of Insp., No. 163. 1854.

1362<sup>40</sup>. Carcinomatous tumor removed from the loin of John L., aged 60, by Mr. Callaway in 1856. Recovery. It had been growing for four months. It was preserved as a good specimen of primary and independent cancerous tumor of the scirrhus variety.

1362<sup>48</sup>. Portion of a recurrent fibroid tumor, removed from the shoulder by Mr. Bossey of Woolwich. Similar tumors had been removed before, but returned. About the year 1835.

Drawing 37<sup>2</sup>.

1362<sup>64</sup>. Two steatomatous tumors removed by Mr. Bossey from the inferior costa of the scapula of a convict at Woolwich.

1362<sup>65</sup>. Two steatomatous tumors from the same case as preceding. They were removed from the scapula, whence the others had sprung. The tumors also returned a third time. They have been examined, and found to consist simply of fat.

1362<sup>70</sup>. Recurrent fibroid tumor removed from the shoulder. The tumor is more than a pound in weight, and consists of fusiform nucleated fibres, and has all the characteristics of this form of growth.

It was removed by Mr. Williams of Dolgelly, from a man, aged 54, who had perceived a lump over the deltoid muscle for five or six years. The wound healed, but soon afterwards another tumor sprung up which ulcerated and bled profusely; the man died in consequence from exhaustion.

1363. Carcinomatous tumors removed from the shoulder; they have grown through the skin, but appear to have sprung from the parts beneath. About the year 1805.

Old Museum Book, No. 163.

1363<sup>20</sup>. A tumor growing from aponeurosis of arm, removed by Mr. Morgan; it is apparently of a recurrent fibroid, or fibro-cellular character. It was translucent when fresh, and said to contain cysts. A similar tumor near it was also removed.

*The following three specimens from same case appear more of a cancerous nature:—*

1363<sup>30</sup>. Part of the upper arm removed by amputation, from the patient who furnished the preceding specimen. After that had been removed, several others appeared in succession, and their rapid increase in size was attended with much pain and inflammation. This tumor was also semi-transparent and of a gelatinous appearance. A considerable part of the tumor had received fine injection.

1363<sup>40</sup>. The elbow, with the remaining portion of the tumor, which also furnished the first-named specimen. Smaller tumors are seen growing around, from the aponeurosis of the biceps. The infiltration of some of the surrounding structure is seen in this specimen, which gives it more of a carcinomatous character.

1363<sup>50</sup>. Another specimen from the same arm, showing two of the recent tumors, which, before immersion in spirits, were semitransparent, and the cicatrix occasioned by the previous operation.

1363<sup>60</sup>. Arm and hand of a child amputated by Mr. B. Cooper for a large carcinomatous tumor over the biceps muscle.

1363<sup>70</sup>. Forearm and part of hand, showing a large vascular growth apparently carcinomatous; this is altogether distinct from the bone. Below is a growth springing apparently from the periosteum, and which contains osseous matter; also similar bony growth from the metacarpal bone of hand.

Amputated by Mr. Bottomley of Croydon.

1363<sup>80</sup>. Part of the arm with the elbow-joint, amputated by Mr. B. Cooper, showing a large carcinomatous tumor which appears to have commenced from the aponeurosis. A similar tumor had previously been removed from the same spot. The cicatrix left by the operation is visible in the preparation.

See wax model (pathological), No. 22; and drawing, No. 28.

1363<sup>85</sup>. Fibrous tumor from forearm, removed by Mr. Cock in 1857.

Case of Jane C., aged 11. It was of nine months' growth, and was very deeply seated in bend of elbow.

1363<sup>90</sup>. Enchondromatous tumor from the wrist containing some ossific deposit, and in process of softening.

Case of John H., aged 78, under Mr. Cock in 1857. He had had the growth on the wrist for thirty years, and which he attributed to the pressure of his tools in gardening. It had lately ulcerated.

1364. Tendons in their thecæ; to the synovial membrane of which are attached numerous pyriform pedunculated granulations.

1364<sup>12</sup>. A quantity of melon-seed bodies let out from an inflamed bursa, near the middle of the upper-arm.

Case of Emma F., aged 40, under Mr. Morgan in 1842. She was admitted with a swelling, the size of a hen's egg, on the arm, corresponding to the insertion of the deltoid; attributed to a blow. It was opened, and these bodies escaped.

1364<sup>25</sup>. Chronic bursa from the back of the hand, injected. It contained bodies like hemp seeds.

1364<sup>50</sup>. Small loose bodies from a ganglion on the wrist.

1365. Deep seated paronychia of the middle finger, with extensive inflammation and suppuration running along the palm of the hand, destroying the tendons going to the fore and middle fingers, and burrowing under the flexor tendons at the wrist.

Old Museum-Book, No. 123.

1365<sup>50</sup>. Two fingers with their metacarpal bones, showing a large carcinomatous tumor, which appears to have taken its origin from the tendons in the palm of the hand.

Removed by Mr. Morgan.

1366. Tendon of the flexor profundus adherent to the theca, causing contraction or flexion of the finger.

1366<sup>25</sup>. Old chronic ulcer on the leg on the anterior and outer part, showing a conversion of the tendon of the peroneus longus, and probably brevis into cellular tissue subjacent to the ulcer. The surface of the fibula very irregular, having been the subject of periosteal inflammation.

See section of bone 1224<sup>60</sup>; and drawing 37<sup>14</sup>.

1366<sup>50</sup>. Finger amputated by Mr. Morgan for an enchondromatous tumor. It is placed here because it appeared to grow from the extensor tendons.

1366<sup>70</sup>. Carcinomatous tumor (?) the size of an orange, growing from the theca of one of the tendons of the fingers.

1366<sup>75</sup>. Section of finger, showing destruction of flexor tendon by a thecal abscess, only a trace of tendinous fibre being seen passing through the granulations.

Case of George K., aged 26, under Mr. Hilton in 1856. Six months before he injured his middle finger by a rope, abscess followed, and it was amputated.

See drawing 37<sup>28</sup>.

1367. Last joint of the middle finger with its tendon from the flexor profundus attached to it. It was torn by a thrashing machine, and the accident was followed by tetanus. The patient recovered.

1368. Upper portion of os femoris, exhibiting a large growth of bone or exostosis from the trochanter minor. It was placed in this section, in consequence of its being considered an ossification of the insertion of the psoas and iliacus muscles.

1369. A portion of muscle, apparently from the thigh, converted into fat.

1369<sup>16</sup>. Tumor removed from the gluteal region of a girl by Mr. Key. It is firm and dense, and of a fibro-plastic character.

1369<sup>18</sup>. *Cysticercus cellulosæ* from gluteal muscle.

Case of Henry C., aged 38, under Mr. Hilton in 1856. He was a shoemaker, and had observed a tumor for seven months. Suppuration had occurred around it, so that when the abscess was opened the cyst escaped.

1369<sup>20</sup>. Bursa removed from over the tuberosity of the ischium, by Mr. Cock in 1854.

1369<sup>25</sup>. Small cystic growth removed from the thigh of John H., aged 52, by Mr. Birkett in 1853. The cysts were full of colloid matter, it was attached to the fascia lata, and had grown rapidly during the last three months, although it had been observed about the size of a pea for several years.

See drawing 197<sup>51</sup>.

1369<sup>48</sup>. Carcinomatous tumor growing from the muscle and tendon of the biceps femoris. When recent it was said to show a cyst formation, and pedunculated bodies growing within.

1369<sup>50</sup>. Melanotic tumor.

Mr. Gossett.

1369<sup>55</sup>. Recurrent or malignant fibroid tumor, removed from the gluteal region.

Emily G., aged 49, admitted under Mr. Cock's care in February, 1849. She was the subject of numerous firm movable tubercles developed immediately beneath the skin; one in the gluteal region had grown rapidly during the last six months. A section of this was firm and succulent, and consisted of spindle-shaped nucleated cells. In June, Mr. Cock removed a second tumor from the same place. It again returned, and she died in June, 1852, when similar growths were observed in the lungs.

See prep. 1750<sup>20</sup>, and drawing 262<sup>85</sup>; drawing of original tumor 198<sup>66</sup>; prep. of dislocated femur 1321<sup>55</sup>.

1369<sup>64</sup>. Carcinomatous tumor removed from the thigh by Mr. Lucas about the year 1807. It appears to be composed of cysts with pedunculated bodies growing from them.

Old Museum-Book, No. 161.

1374<sup>40</sup>. A stump, after amputation, immediately below the knee affected with carcinomatous disease, for which amputation above the knee was performed by Mr. B. Cooper.

1374<sup>80</sup>. Bursa from the knee, crossed by numerous fibrous bands.

1374<sup>90</sup>. Bursa, removed from the knee of a man, aged 35, by Mr. Callaway, jun., in 1855. It was produced by kneeling on

his right knee while at work, and had been growing for seven years. It fluctuated, and when opened was found to consist of a thin cyst filled with dark blood of the colour and consistence of coffee grounds. It might, therefore, have been called a hæmatocele. Removal and recovery.

1375. Bursa formed over the patella; the internal surface presenting numerous pedunculated bodies, and filaments attached to it.

1375<sup>15</sup>. Bursa above and below patella.

1375<sup>20</sup>. Bursa anterior to patella.

1375<sup>25</sup>. Bursa from patella, the internal surface presenting numerous pedunculated bodies, and filaments attached to it.

1375<sup>50</sup>. Two bursæ removed from the knee by Mr. Key. Their internal surfaces are shaggy and covered with irregular granulations; and their walls are very thick and dense.

Case of Mary F., aged 37, in the hospital in 1828. She had been long used to kneeling, and the bursæ had been growing for seven years, they formed large tumors which were often the seat of chronic inflammation. She quite recovered.

2 Note-Book, p. 47.

1375<sup>55</sup>. Bursa from over right patella.

Removed by Mr. Birkett in 1854, from a woman, aged 32, in whom it had existed for two or three years. Recovery.

1375<sup>60</sup>. Bursa from patella having very thick walls.

Case of Mary E., aged 36, under Mr. Hilton in 1855. The tumor was on the left knee, and had been growing for fifteen years. Recovery.

See drawing 37<sup>18</sup>.

1375<sup>35</sup>. Bursa from patella with very thick walls.

Case of Emma B., aged 26, under Mr. Hilton in 1855. She had a bursa on each knee, the one, the right, for two years, and the left for one year. The former was removed. Recovery.

1375<sup>70</sup>. Bursa from patella containing melon-seed bodies.

Removed by Mr. Birkett from Matilda R., aged 19, in 1856. It formed a tumor on the right knee the size of an orange.

1375<sup>75</sup>. Bursa from the head of the gastrocnemius externus.

1375<sup>88</sup>. Necrosis of the tuberosity of the os calcis, with partial sloughing of the tendo achillis.

1376. Tendon sloughing from hospital gangrene attacking a venereal sore of the leg.

Tibia of same case. Preparation 1217.

1376<sup>5</sup>. Reparation of tendo achillis twelve days after division.

Patient of Mr. Birkett, who fell and fractured his leg. 1854.

See drawing 37<sup>62</sup>.

1376<sup>10</sup>. Tendo achillis showing reparation ten days after division. Lymph mixed with blood is seen uniting the ends.

1376<sup>30</sup>. Recurrent fibroid tumor removed from over the head of the tibia.

Case of Ann P., aged 20, admitted under Mr. Birkett in September, 1855, for this tumor, which had been growing six months. It was globular, soft, and composed of fusiform cells. In December another growth which had sprung up in the cicatrix was removed; again this occurred, and, therefore, in January, 1856, the leg was amputated. Sloughing followed, and necrosis of the bone (prep. 1160<sup>30</sup>), but eventual recovery.

Drawing of tumor, 37<sup>12</sup>.

1376<sup>40</sup>. A fibro-cartilaginous tumor removed from a little below the knee by Mr. Key, from a middle aged man. The posterior part, where attached, is composed of bone.

1376<sup>45</sup>. Recurrent fibroid tumors, removed at different times.

From Eliza C., aged 43. She first came under Mr. Birkett's notice in January, 1853, for a tumor on the anterior tibial region of six



years' growth. It was removed in March, and was found to be composed of elongated nucleated fibres. A new growth occurred in the cicatrix, and this was removed in November; the wound sloughed, and the bone became necrosed. Again the wound healed, but the disease reappeared, and was excised in April, 1854. On its subsequent occurrence the limb was amputated in July; the stump healed quickly, but before the expiration of a month an induration was felt, and a fresh tumor was perceived to be rapidly growing. This obtained a very large size, and then sloughed; and she slowly sank, dying in March, 1855. There was no disease found in any part of the body. The large tumor seen in this preparation is a section of that removed after death. The two small tumors at the back of the jar are those removed in March, 1853, and the three in front those removed on subsequent occasions. The next preparation exhibits the leg with the tumors attached.

See drawings 198<sup>57</sup>, 58, 59, 60, 61.

Record of Insp., No. 56. 1855.

1376<sup>46</sup>. The amputated leg of the preceding case.

1376<sup>50</sup>. Recurrent fibroid tumor from the thigh. This, when fresh, was semitransparent and succulent, though at the same time tough. It might be styled gelatinous sarcoma.

Removed by Mr. Cock from Ann M., aged 39, in June, 1856. It had been growing for five or six years from the inside of the thigh. After excision it again returned very rapidly, and this was removed in December. Again a growth sprung up, and increased with extreme rapidity, but, the patient falling pregnant, it was left untouched. After her confinement in August, 1857, she again came into the hospital, but in a very reduced condition. The tumor now reached from the hip to the knee, and measured forty-two inches in circumference; the skin had broken, and the tumor was sloughing, with much discharge. The leg was amputated while the patient was under chloroform, but she died in a few hours, from exhaustion. The tumor was composed of same structure as the others, and is seen in the next preparation.

1376<sup>51</sup>. The tumor referred to in the preceding case.

1376<sup>55</sup>. Fibroid tumor, probably recurrent, removed by amputation from Joseph M., aged 50. When the leg was removed by Mr. Bryant, it was of twenty-one months' growth. It was situated in the calf of the right leg, and the tendons passed under it. It was quite circumscribed, and mea-

sured on section five inches by four and a half inches. It somewhat resembled cancer in appearance, but was composed simply of nucleated fibres. The patient died of pyæmia.

Drawing, 198<sup>70</sup>.

Record of Insp., 185. 1857.

1376<sup>80</sup>. Hand and forearm of a female affected with dry gangrene.

Case of Sarah W., aged 55, under Dr. Addison in 1834. The disease came on gradually, and the arm separated spontaneously, and the patient recovered.

Wax models (pathological), 25 and 26. Drawing 37<sup>6</sup>.

7. Misc. Insp. Book, p. 94.

1377. Mortified foot, of which the natural separation took place.

Case of Elizabeth W., aged 83, under Sir A. Cooper in 1806.

Old Museum-Book, No. 91.

1377<sup>25</sup>. The foot of a patient of Mr. B. Cooper; a case of senile gangrene from ossification of the arteries. The soft parts having nearly separated at the ankle joint, the foot was removed merely to relieve the patient from the inconvenience of supporting it; the gangrene, at the same time, was slowly ascending up the leg, and after a time death took place.

1377<sup>30</sup>. Both feet of a man which became gangrenous from frost-bite.

Case of Edward R., aged 33, admitted under Mr. Hilton in February 6, 1855. Was a coachman, and four weeks before, having to sit on his box several hours in very cold weather, he felt great pain in his feet; at the same time, he was wearing a pair of tight boots. The pain and numbness increased until they became discoloured, when he sought advice. When admitted, the feet were black and covered with vesications, and scarcely any feeling remained in them. Separation went slowly on; and when all the soft parts were dead, the tendons and ligaments were divided, and the feet were removed at the ankle-joint. The stumps granulated, and he left the hospital, but was readmitted with necrosis of the bones in August. The dead portions were removed, but the stumps were not quite healed until the beginning of the following year.

1377<sup>50</sup>. Ganglion with a portion of the tendon of the peroneus tertius muscle removed by Mr. Birkett in 1855.

1377<sup>52</sup>. Tendons of peronei muscles covered with granulations.

Case of William W., aged 23, under Mr. Hilton in 1856. He had a granulating ulcer on the outer side of the ankle, and diseased bone of the tarsus. In an operation on this part, these portions of tendons were removed.

1377<sup>54</sup>. A fibrous tumor removed from the sole of the foot.

1377<sup>75</sup>. Portion of a great toe, showing the effects of bunion.

Drawing, 37<sup>20, 24</sup>; and cast, 194.

1377<sup>80</sup>. Section of great toe, showing a bursa over the second joint.

Case of George P., aged 28, under Mr. Hilton in 1856. He was a tanner, and, in consequence of wearing tight boots, his second toe had grown over the great toe. So much pain had been produced that he was unable to follow his employment, and the toes were consequently removed.

See drawing 37<sup>32</sup>.

1378. Little toe amputated by Mr. Key for a fibrous tumor, situated at its under part.

From a female, aged 40.

THE END.

