Appendix A

SAMPLING OF COAL

When valuing coal, it is of the greatest importance that a fair sample should be taken. This is obvious when we consider that many impurities occur in lumps—*e.g.*, slate, pyrites. A small sample, therefore, taken at hazard from a car of good coal may show 30 to 40% of ash, or in some other way entirely misrepresent the bulk. The variability of coal is so great that in order to get a fair average, experience shows that the only practical way is to make a very intimate mixture of samples drawn from different parts of a lot. This may be best accomplished by taking a shovelful of the coal from various portions of the load, and placing the selected part on one side. A liberal number of such samples should be taken, and a cone-shaped heap formed. Now proceed to deal with this large sample by what is known as quartering. Flatten the top of the heap, and divide it by a line through, and then another at right angles to the first. The cone-shaped heap of coal is now divided roughly into four quarters. Take two of these, from opposite sides, and shovel the selected quarters into a fresh heap, rejecting the remainder altogether. Now form a second cone-shaped pile, again flattening at the top. Divide this into four quarters as before (a piece of board is a good instrument for marking the divisions); take two opposite quarters and separate them, again clearing away the rejected portion. Repeat this operation, mixing well each time, breaking large lumps down to average size, as often as may be necessary in order to reduce the original heap of coal to a sample of a few pounds, when it is ready for further similar treatment in the laboratory. In the laboratory the coal is ground down to a fine even powder, and the quartering continued until the sample may be considered small enough. A small portion is now drawn from this thoroughly uniform sample and analysed as described.