ſophical Transactions for 1781, by Mr Henry Smeathman of Clement’s Inn. According to this account, the works of theſe infects ſurpaſs thoſe of the bees, waſps, beavers, and other animals, as much at leaſt as thoſe of the moſt poliſhed European nations excel thoſe of the leaſt cultivated ſavages. And even with regard to man, his greateſt works, the boaſted pyramids, fall comparatively far ſhort, even in ſize alone, of the ſtructures raiſed by theſe insects. The labour­ers among them employed in this ſervice are not a quarter of an inch in length ; but the ſtructures which they erect rife to 10 or 12 feet and upwards above the ſurface of the earth. Suppoſing the height of a man to be ſix feet, the author calculates, that the buddings of theſe infects may be conſidered, relatively to their ſize and that of a man, as being raiſed to near five times the height of the greateſt of the Egyptian pyramids ; that is, correſponding with conſiderably more than half a mile. We may add, that, with reſpect to the interior conſtruction, and the various mem­bers and diſpoſitions of the parts of the building, they ap­pear greatly to exceed that or any other work of human conſtruction.

The moſt ſtriking parts of theſe ſtructures are, the royal apartments, the nurſeries, magazines of proviſions, arched chambers and galleries, with their various communications; the ranges of Gothic-ſhaped arches, projected, and not form­ed by mere excavation, ſome of which are two or three feet high, but which diminiſh rapidly, like the arches of ailes in perſpectives ; the various roads, sloping ſtaircaſes, and bridges, conſiſting of one vaſt arch, and conſtructed to ſhorten the diſtance between the ſeveral parts of the build­ing, which would otherwiſe communicate only by winding paffages. In ſome parts near Senegal, their number, mag­nitude, and cloſeneſs of ſituation, make them appear like the villages of the natives. But theſe and many other curious inſtances of the great ſagacity and powers of theſe infects cannot be underſtood, without viewing the plates in which their feeble frames, and comparatively ſtupendous works, are delineated. See Phil. Tranſ. above referred to.

The economy of theſe induſtrious infects appears to have been very attentively obſerved by the ingenious author, as well as their buildings. There are three diſtinct ranks or orders among them, conſtituting a well-regulated commu­nity. Theſe are, ſirſt, the *labourers,* or working infects ; next the *ſoldiers,* or fighting order, who do no kind of la­bour, and are about twice as long as the former, and equal in bulk to about 15 of them ; and laſtly, the winged or perfect infects, which may be called the *nobility* or *gentry* of the ſtate ; for they neither labour nor fight, being ſcarcely capable even of ſelf-deſence. “ Theſe only are capable of being elected *kings* or *queens ;* and nature has ſo ordered it, that they emigrate within a few weeks after they are eleva­ted to this ſtate, and either eſtabliſh new kingdoms, or periſh within a day or two.”

The ſirſt order, the working infects, are moſt numerous, being in the proportion of 100 to 1 of the ſoldiers. In this ſtate they are about 1/4 of an inch long, and 25 of them weigh about a grain, ſo that they are not ſo large as ſome of our ants. See Plate DI. fig. 1. and 2.

The second order, or ſoldiers, have a very different form from the labourers, and have been by ſome authors ſuppoſed to be the males, and the former neuters ; but they are, in fact, the ſame infects as the foregoing, only they have under­gone a change of form, and approached one degree nearer to the perfect ſtate. They are now much larger, being half an inch long, and equal in bulk to fifteen of the labourers, (fig. 3, and 4.).

The third order, or the infect in its perfect ſtate, vanes its form ſtill more than ever. The head, thorax, and ab­domen, differ almoſt entirely from the ſame parts in the labourers and ſoldiers ; and, beſides this, the animal is now furniſhed with four fine large browniſh, tranſparent, wings, with which it is at the time of emigration to wing its way in ſearch of a nev∕ ſettlement. It differs ſo much from the other two, that they have not hitherto been ſuppoſed to be­long to the ſame community. In fact, they are not to be diſcovered in the neſt till juſt before the commencement of the rainy ſeaſon ; when they undergo the laſt change, which is preparative to the formation of new colonies. They are equal in bulk to two ſoldiers and about 30 la­bourers (ſee fig. 5.), and by means of the wings with which they are furniſhed they roam about for a few hours ; at the end of which time they lose their wings, and become the prey of innumerable birds, reptiles, and insects : while pro­bably not a pair out of many millions of this unhapoy race get into a place of ſafety, fulfil the firſt law of nature, and lay the foundation of a new community. In this ſtate many fall into the neighbouring waters, and are eaten with avidity by the Africans. The author found them delicate, nouriſhing, and wholeſome, without ſauce or other help from cookery than merely roaſting them in the manner of coffee.

The few fortunate pairs who happen to ſurvive this an­nual maſſacre and deſtruction, are repreſented by the au­thor as being caſually found by ſome of the labourers, that are continually running about on the ſurface of the ground, and are elected kings and queens of new ſtates. Thoſe who are not ſo elected and preſerved certainly periſh, and moſt probably in the courſe of the following day. By theſe induſtrious creatures the king and queen elect are im­mediately protected from their innumerable enemies, by in- cloſing them in a chamber of clay ; where the buſineſs of propagation ſoon commences. Their “ voluntary subjects"then buſy themſelves in conſtructing wooden nurſeries, or apartments entirely compoſed of wooden materials, ſeemingly joined together with gums. Into theſe they afterwards carry the eggs produced from the queen, lodging them there as faſt as they can obtain them from her. The author even furniſhes us with plauſible reaſons to believe, that they here form a kind of garden for the cultivation of a ſpecies of mi- croſcopical muſhroom ; which Mr Konig (in an Essay on the Eaſt Indian Termites, read before the Society of Na- turaliſts of Berlin) conjectures to be the food of the young infects. But perhaps the moſt wonderful, and at the ſame time beſt authenticated, part of the hiſtory ot theſe ſingular infects, is that which relates to the queen or mother of the community in her pregnant ſtate.

After impregnation, a very extraordinary change begins to take place in her perſon, or rather in her abdomen only. It gradually increaſes in bulk, and at length becomes of ſuch an enormous ſize as to exceed the bulk of the reft of her body 1500 or 2000 times. She becomes 1000 times heavier than her confort, and exceeds 20,000 or 30,000 times the bulk of one of the labourers. In this ſtate; the matrix has a conſtant periſtaltic or undulating motion ; the conſequence of which is (as the author has counted them) (fig. 8.) the protruſion of 80,000 eggs in 24 hours.

Theſe eggs, ſays the author, “ are inſtantly taken from her body by her attendants (of whom there always are, in the royal chamber and the galleries adjacent, a ſuſſicient number in waiting) and carried to the nurſeries, which are ſometimes four or five feet diſtant in a ſtraight line.— Here, after they are hatched, the young are attended and provided with every thing necessary, until they are able to ſhift for themſelves, and take their ſhare of the labours of the community.”

Many curious and ſtriking particulars are related of the