HINTS TO STOCKOWNERS:

OR,

Short Remarks on some of the more Important Departments of Stock Management.

BY

WILLIAM ROBERTSON, V.S.,
MEMBER OF THE ROYAL COLLEGE OF VETERINARY SURGEONS, ETC.

KELSO:
J. & J. H. RUTHERFURD, SQUARE.
W. BLACKWOOD & SONS, EDINBURGH & LONDON.
AND ALL BOOKSELLERS.
1870.
Kelso:
Printed by Rutherford & Craig.
PREFACE.

In the management of all pertaining to our domestic animals, there is, as a rule, too little attention bestowed in acquiring a knowledge of the natural habits of the different species, their adaptability to extrinsic circumstances, as also of those general laws in accordance with which the healthy exercise of animal function is maintained; while where this knowledge is possessed, it is much less frequently made practically available for the maintenance of health and prevention of disease than might be anticipated.

It does certainly seem anomalous that those who are not sparing of expense in the treatment of their
animals when actually suffering from disease, should fail to understand the value of advice which is given with a view to its prevention.

Veterinary surgeons are, and have been, too much looked upon merely as the agents or tools through which it is sometimes possible to reinstate sick animals in healthy or working condition, too frequently estimated by the test of how much they can cure, and too seldom employed as the conservators of health and in the prevention of disease. Feeling that this is a state of matters undesirable, and that the opposite is likely to be fraught with benefit to the animals placed under our care, and consequently also to the pecuniary interests of their possessors—as also that it is all but certain that we shall be more extensively employed in the direction of the prevention of disease in proportion as the profession occupies its legitimate position in that important division of social science, public health, of which it forms a part—the accompanying sugges-
tions are made as indicative of the more important errors, and the means by which they may, in part at least, be avoided, which are daily committed as respects the preservation of health and avoidance of disease amongst all our domestic animals.

On the different subjects touched upon a detailed or exhaustive treatment of any is purposely avoided.

The "Hints" are intended rather as suggestive: principles are endeavoured to be pointed out from which may be deduced rules for daily practical guidance.

In this light, and supplemented by the observation and reflection of those whose daily duty it is to minister to the comforts and wants of our animals, should they tend in any way to a more intelligent consideration of those relationships which must ever exist between the different species of stock which we possess and the circumstances in which they are placed, to a more rational comprehension of any of the functions of animal life or manifestations of
disease, and consequently to a more humane and successful management of both, the object of their writer will be amply attained.

Kelso, September 1, 1870.
CONTENTS.

LOCATION OF ANIMALS. 

The importance of attending to the reciprocal relations which subsist between Animals and the situations in which they are placed—Influence of Soils—Geological Formation—Manurial richness—Shelter—Stabling . . . 1

FEEDING OF ANIMALS.

Relation of the Food Supply to the ultimate purposes for which Animals are kept—Extent of damage from Errors in Dieting—Injury to Stock Animals from over-feeding—Injury to Store Animals from irregularities in feeding—Quality of Food—Form in which food is given . . . 13

BREEDING OF ANIMALS.


REARING OF YOUNG STOCK.

Susceptibility of Young Animals to adverse influences—Rearing of Young Cattle to a great extent necessarily unnatural—Diseases resulting from artificial Calf-rearing—Food employed in rearing Calves—Quantity—Quality—Form—Facts to be remembered in endeavouring to lessen the Mortality amongst Calves—Dangers of defective and irregular nutrition during youth . . . 47
CONTENTS.

EPIZOOTIC AND ENZOOTIC DISEASES.

Definition of the terms Epizootic and Enzootic—Cattle Plagues objects of interest to all—Cattle Plagues not indigenous to Great Britain—Means by which they are propagated—Necessity for the adoption of preventive measures by the Legislature—Enzootic Diseases: their relation to Local Influences—Their extent modified by varieties of Stock—The most prevalent forms of Enzootic Diseases—Their Nature—Causes—Reclamation of Lands occasionally the cause of the appearance of peculiar Enzootic Diseases

THE MANAGEMENT OF DISEASE.

A state of Health the perfection of management—False ideas regarding the use of Medicines in the maintenance of Health and the prevention of Disease—The employment of Blood-letting in Disease—Separation of Sick from Healthy Animals—Stabling of Sick Animals—Cleanliness, &c.—Sending for a Veterinary Surgeon
Hints to Stockowners.

LOCATION OF ANIMALS.

That the greatest amount of benefit may be obtained from those animals which, from necessity or other motives, we have subjected to our control, it is necessary that they be maintained in as full enjoyment of health as is compatible with their several dependant relationships. For the preservation, however, of animals in the full vigour of health, it is not merely necessary that they be kept free from the actual contagion of disease: they must also be protected from the adverse influences connected with situation, climate, diet, &c.

If diseases connected with location and nutrition
are not the most fatal of the maladies with which we have to contend, they are, in our domestic animals at least, the most widely spread and frequently encountered, and are also those over which we possess the greatest control. At the same time, it ought ever to be remembered that to those potent influences of location, food supply, and a judicious choosing of certain animals for breeding purposes, must be assigned the merit of having originated, improved, and maintained the many varieties of the different species of our domestic animals, and that to such an extent as almost to favour the idea of the formation of a new species. To a want of knowledge, or an utter disregard of the teachings of what may be considered as amongst the first principles of the science of stock-rearing—viz., that there ought to be a just relationship subsisting between the animals we possess, and the situations and other extrinsic circumstances in which we place them—may be traced many of the failures and disappointments which have attended the breeding and rearing of highly-bred stock. It is not everything that we possess fine animals, and otherwise give them every attention, if local and climatic influences are ad-
verse. They may be reared, no doubt—for these influences can, to a certain extent, be combated; but in the end such breeding will be found eminently unprofitable. Better is a good cross-bred animal than one ill developed and badly nourished, even though it should possess the recommendation of descent from the purest strain of blood.

Of local agencies having a determining influence, as well during health as in the production of particular forms of disease, that of the soil is probably the most important. Besides the direct and individual influence, so to speak, exercised by all soils on the animals bred and reared on them, there is also the indirect, operating through the medium of the grains, grasses, and roots which they yield. This character or condition of soil, again, and its adaptability to the maintenance of animal health or the opposite, is the result of many causes or agencies, natural and artificial, some of which are susceptible of alteration, while others are little affected by interference.

Geological Formation.—The substrata on which soils rest, and to which, in part at least, they owe their formation, is always an important element in
determining their character, and one which remains undisturbed in its permanence notwithstanding cul-

tivation and the improvements of modern scientific agriculture. From an acquaintance with the nature

of this formation we can in many cases predict what will be the character of the stock bred and reared

on such lands, as also the diseases to which they are more particularly liable, or from which they are

exempt. For example, it is a fact well known to the majority of our sheep-breeders that on certain

soils, chiefly those resting on the igneous rocks, sheep are liable to suffer from a form of abdominal

consumption commonly known as pinning, and that no system of treatment is so efficacious as their

removal to soils resting on the sandstone formations. There are also diseases of particular structure of the

animal body, as the bones and nervous system, enzootic—that is, confined to circumscribed districts

do country—which seem to owe their origin to the redundancy, or absence, in the soil, and materials

grown thereon, of certain organic or inorganic materials. These diseases are always difficult of

prevention when only methods of cultivation, or systems of folding the animals on these lands, are
adopted. They would require to have access to those situations known to be dangerous only at particular periods, and to have what food is given them from such soils supplemented by other of a very different nature.

_Drainage_, amongst the greatest of modern agricultural improvements, has done much towards influencing in a favourable manner, directly as well as indirectly, the capability of all our soils for the healthy support of animal life. Superabundant moisture (always an agent inimical to health) is removed, temperature is heightened, and their products rendered more healthfully nutritious. These results have been most apparent on lands naturally stiff and retentive, and which, previous to the adoption of a thorough system of drainage, were notorious as being ill adapted to the rearing of any description of stock—diseases of a malarious and rheumatic nature, or specific affections of the digestive and assimilatory systems, being of such undesirable frequency as to render the breeding of stock extremely uncertain, and consequently unprofitable. Notwithstanding these obvious and admitted advantages of
a judicious system of drainage, there is an opinion prevalent amongst a large portion of even well-informed stock-breeders that lands in themselves naturally soft and damp, marshy, or boggy are particularly well fitted for the breeding and rearing of horses—this dampness being, it is imagined, favourable towards the healthy developement of the important structures of the hoof. This opinion is, however, a mistake, and will be found, on investigation, not to stand the test of experience. In certain conditions of disease moisture may be beneficial; but for the healthy growth of the feet of the young animal the very opposite is the case. The best feet and legs, because the healthiest, are met with in animals bred and reared, as their progenitors have been, on our driest soils. In this light the soils of the chalks or limestones, the porphyry and greywacke, will bear favourable comparison with the fen or marsh lands of Lincolnshire, or the bogs of Ireland. Horses bred from families which have been reared for a succession of generations on wet or marshy lands not only acquire an abnormal expansion of the feet, flatness and weakness of the sole, with a want of firmness and tenacity of the crust
wall, which are unfavourable to the endurance of hard work, but shew, in addition, the deteriorating influence of this condition of soil in the flabby, soft state of the whole muscular system, are pot bellied, with legs disposed on the slightest provocation to dropsical swellings. The grasses grown on these lands, although abundant, are apparently deficient in nutritive elements, difficult of appropriation, and apt to induce a faulty condition of the digestive and assimilatory systems.

*Increase of manurial richness in lands,* an almost invariable accompaniment or result of a system of thorough drainage, has at the same time resulted in the production of influences markedly determining both the extent and character of disease in animals reared under these conditions. This is earliest and most notably visible amongst our sheep stock, that class most closely and constantly in contact with these influences.

On our best and most highly cultivated lands, if we except the occasional occurrence of epizootics, the great mortality in our sheep stocks, as well as cattle, arises from faulty dietetic conditions—fatal
blood disorders—a disturbance of the equilibrium which ought to subsist amongst the several functions connected with the preparation of food and its manufacture into healthy nutritious material. *Spleenic apoplexy, quarter ill, braxy,* and those varied affections in sheep characterized as "sickness," may all be viewed as diseases of the dietetic class, and can only be successfully combated when dealt with by means operating in this direction—the establishment of the normal functions of digestion and assimilation.

The reclaiming and improving of our lands, pasture and arable, has naturally resulted in an increase in the quantity and quality of our supplies of food for different classes of stock, this increase of food supply at once suggesting and rendering possible the very great changes which have been made in supplanting the more primitive by the more highly developed but more artificial breeds. In many cases, however, these improved breeds, notwithstanding all the additional accessories of diet, are not profitably maintained unless by adequate shelter they are protected from the damaging effects of sudden and great atmospheric changes. In breeding stock, young stock—and in the spring of the
LOCATION OF ANIMALS.

year this is more particularly needful to attend to—no amount of feeding is sufficient compensation to this class of stock for exposure to sudden withering blasts of snow or rain. These not only prevent the greatest amount of benefit being obtained from the food consumed, but are powerful exciting agents of much actual disease. Of the exact nature or form in which this shelter ought to be provided every stockowner must be the best judge, seeing many things fall to be considered, as productive capabilities, physical character of the soil, variety of stock for which this shelter is required, &c., of which he only is in a position to form a correct estimate.

Stabling.—If damage is apt to result to the health of stock, and consequently to the interests of stockowners, from a want of a just appreciation or a wilful neglect of the importance of the fact, that for the healthy rearing of animals there ought to exist a mutual relationship between these and their conditions of location as to soil, at least equal damage is likely to attend similar errors committed respecting location as to stabling. With no stock, either when roaming unconfined or enjoying the advantages of shelter,
can any of the great general laws of health be infringed with impunity. For certain classes of our stock, stabling, or a sufficient shelter, may be deemed a necessity during the greater part of the year; for others, this necessity only exists during particular and restricted periods. For all, in order that the adverse influences of confinement may be reduced to the minimum, this stabling or shelter ought to be provided and maintained with a view to the attainment of certain definite ends, some of the principal of which are—1. **Good position**—a position such that atmospheric changes shall affect the animals as lightly as possible, it being remembered that these vicissitudes are more likely to operate prejudicially upon them under confinement than when allowed a full amount of freedom. 2. **Sufficient ventilation.** This has always been a difficult subject; nor is it necessary that the advantages or demerits of the different systems employed be considered here, it being ever remembered that, whatever method is adopted, a regular and sufficient supply of pure air ought to be maintained for the animals' consumption, together with ready means for the removal of the exhausted; while in the case of horses ample space and regulation of
temperature are almost necessary accompaniments.

3. *Thorough cleanliness*, through means of adequate drainage and the removal of all deleterious animal and vegetable matter: this end is much expedited by the free use of disinfectants. 4. *Light*: the importance of this, save as respects animals which are being rapidly fed, is not likely to be doubted: it is not only cheerful and health-giving in itself, but indirectly is an enemy to all untidiness and filth.

In addition to these conditions of stabling or shelter, which may be looked upon as absolutely needful for the healthy maintenance of animal life, with certain classes of our animals, horses in particular, individual cleanliness—a regular and careful attention to the condition of the skin through means of grooming—is particularly deserving of attention, as being subordinate only to the more universally applicable laws of health.

When these common and generally approved sanitary conditions of stabling are neglected, health is impaired, life being maintained in a weak and vacillating condition, and animals may actually become the victims of disease engendered by the continuance of these depressing and baneful influences; while at
all times the system offers a ready and suitable resting-place for the seeds of any infectious disorder which may be encountered. In addition to this increased susceptibility to contract infectious diseases, and their less disposition to respond to treatment, there is also in such cases of defective sanitary arrangements a general tendency for affections usually simple to assume a malignant type.
FEEDING OF ANIMALS.

In the feeding of our domestic animals we have not merely to do with those where this food supply is required only for what may be considered the normal purposes of animal life—the growth or development of the animal framework, and the supply of the waste of tissue incident to the performance of animal functions: we have, in addition, to deal with such where this food is understood to be in excess of both of these demands, and where this excess is endeavoured to be pushed to the utmost limits to which it is possible.

Participating in the hot haste in which everything in the present day is accomplished, and endeavouring to meet the demand for an increased supply of animal food for a rapidly-increasing population, stock-feeding is not now the calm and leisurely waiting for animal development it formerly used to be. With
as much propriety it may be characterized as the manufacturing of beef and mutton. Not content with preparing for the market one set of cattle during the feeding or root season, their boxes or stalls must be refilled two or three times. Nor is what used formerly to be considered as the natural food of these animals—the produce of the lands where they were reared given in full amount—now thought sufficient for the attainment of the ends aimed at. The most highly-nutritious materials, aided by the regular and systematic employment of digestive stimulants, is continuously given. All these conditions have of necessity a determining influence on the health of animals so circumstanced.

If we except the epizootics, and one or two parasitic diseases of sheep, by far the larger proportion of the maladies met with in this class of stock—those kept for the production of animal food—are connected with, or immediately proceed from, faulty conditions of the assimilatory and digestive functions.

Probably in every class of our domestic animals, the individuals which receive the greatest amount of damage from being injudiciously fed are precisely those upon which most attention and care ought to
be bestowed in order to guard against any injurious results—viz., our breeding animals.

The males of our higher bred stock are, as a rule, too much pampered, and too often fed to a point bordering on plethora—a condition in all animals favourable to, and in many involving, disease. This is particularly noticeable in our better class sheep, animals which stand this treatment worse than most others. Many a breeder, after having at considerable sacrifice obtained what he imagined were promising animals, has had his hopes cruelly blasted by finding that, if not perfectly impotent, their powers of procreation were certainly materially weakened, or they were subjects of premature disease. In some cases, indeed, the results have even been worse—in the begetting of stock enfeebled in constitution and predisposed to disease. It is certainly needful that these animals should be well fed, but not at all necessary that they should be plethoric—that to this feeding should be sacrificed the full and healthy development of the organs of locomotion, as well as those of respiration, circulation, and digestion. The females, again, are not unfrequently made the subjects of an experiment in dietetics, whereby it is
sought to be discovered how far it is possible, compatible with health, or in some instances bare existence, after conception, to allow them to fall off and still leave sufficient time for their being brought into what is considered a proper condition immediately previous to parturition. Such treatment is a fruitful source of mischief, and deals damage in a double form, first with the dam, and second with the foetus or progeny.

With horses, store cattle, and sheep, while the inducements to err in dieting from repletion and over stimulation of the digestive organs by fits and starts are less, and diseases of plethora or over-balanced circulatory system are fewer, they are nevertheless sufferers to a greater extent from injudicious dieting than, with a little care, they ought to be. Cases where the amount of food supplied is deficient, followed by diseases of anemia or pure poverty, certainly do occur: they are, however, rare as compared with those where the fault is to be found, not with the amount of food given, but with the manner in which it is given. Over a given period of weeks or months the amount given may be perfectly sufficient for the animal wants if this were allowed with regu-
larity day by day. It is, however, given in excess one week or month, and the animal has more than it can appropriate, while the succeeding it is withheld, and then is barely sufficient for the increase of growth or the supply of what has been removed as waste, far less for both. Or, again, there is forgotten those causes which operate either from within or without the animal, as temperature, work, period of gestation, lactation, &c. The quality, too, may be deficient. It is mistaken economy, most certainly, to supply animals with food of an inferior or damaged nature, as is too often done, and reckon it for so much of a superior quality. When given, it ought to be as such; while certain classes, as horses, are infinitely better without it, in receiving a smaller amount of sound nutritious material. On these animals it will not even produce the nutritive results it might accomplish in others, but will most probably result in the production of certain depraved or diseased conditions.

The form, as well as the quantity or quality of food given to animals, is deserving of being considered. For the rapid and economical feeding of all varieties of stock it is well known that they must
not only have a full supply of the best materials, but this must be presented to them in such a condition and form as will best fit it for rapid digestion and assimilation. For this purpose benefit may always be derived from a mixture or commingling of a variety of feeding materials, a proper trituration or grinding of the harder, with an occasional altering of their character by fermentation, cooking, or flavouring. *Chopping of fodder and bruising of grains* will, in the case of all classes of farm horses, pay well for the time and labour, while with many it is absolutely necessary in order that the full amount of nutriment may be obtained from these materials. Of these processes the latter is probably open to the more cogent objections, seeing that horses fed on bruised grains, when put immediately to severe draught, seem to be more liable to that fatal lesion, rupture of the stomach, apparently from the rapidity with which the digestive fluids act upon materials in this condition, the elimination of gases, the difficulty of eructation, and consequent tension on the coats of the organ. In all farm stables there is no material so much wasted as uncut fodder, there being generally about one-third destroyed and removed with
the litter. All this, however, is saved by chopping.

*Cooking of grains* for horses, and mixing of these with such roots as potatoes, mangold, or turnips similarly treated is, as a rule, not to be recommended. While it may be carried to a considerable extent with perfect impunity, and even benefit, in young and idle animals, its employment is attended with much annoyance and danger in those which are actively engaged in work. The digestive apparatus of the horse is not well adapted for food of this variety, which, together with the mode in which it is given — either in too large quantities, or too old as to the time of its preparation, or too hot — frequently results in indigestion, or more serious affections of the stomach and bowels. Nor are these risks compensated for by any increase in the nutriment of materials thus treated, an idea long entertained, but which has not facts sufficient to substantiate it.
BREEDING OF ANIMALS.

There are few who, knowing anything from experience regarding the breeding of animals, if questioned, will deny the general truth of the statement "that like produces like;" still, there are many even of these same individuals who, in daily practice, are found ignoring its teachings—at least they act as if it had no particular applicability to horses. If it is true, as all evidence seems to point to its truth, that not only external conformation, but the character of internal organs and peculiarities of temper and disposition, are transmissible from parent to progeny—that the son may inherit from the sire a body symmetrical and proportioned, or ill formed and ungainly, the actual seeds of disease, or organs and structures predisposed to become diseased, or, probably even more, individual and acquired excel-
rences—the selection of parents is surely deserving of more attention than is often given to it.

There is no doubt but that, properly speaking, in the choice of breeding animals, both sire and dam ought to be selected with equal care: indeed, when stock animals are again to be bred this is absolutely necessary. With horses, in many of their classes, it is, however, the male only which seems to attract any attention: the female, although incapacitated by disease or age, is looked upon as good enough for breeding from. Probably for the majority of purposes for which horses are ordinarily bred it is only necessary or possible to determine with certainty the claims of the sire to the character of purity of blood or descent in the breed to which he belongs. Following this, however, equal precautions must be exercised in the choice of both parents, or little satisfaction is likely to result in the offspring. The animals intended to be bred from ought, as a matter of course, to be the best the breeder is able to obtain. It is needless endeavouring to particularise what is comprehended in the term “the best,” seeing that although most men will differ little regarding what may be termed a good and a bad animal of any class,
there is yet some difficulty in obtaining agreement amongst any number of men as to what may constitute the ideal of perfection, more particularly in horses. They ought to have reached maturity, be in the possession of vigorous health, and have perfect freedom from any hereditary disease, or even predisposition to it: preference ought also to be given to docility and tractability of temper. It is curious to observe the caution with which our breeders of sheep superintend the introduction of any fresh blood amongst their already highly bred stock—how they criticise the quality of the bone, the form of the ribs, the length and expression of the face, the setting of the ears, the character of the neck, with the amount and quality of the wool; and to see the easy indifference with which they at the same time set aside as fit for breeding purposes horses with such patent hereditary defects as roaring, badly formed limbs or feet, and diseased joints.

Amongst our domestic animals all that is generally necessary for fruitful connection is, that they be in the enjoyment of health, and that attention be paid to the period of heat.
According to certain statistics it has been made to appear that a larger proportion of male animals is the result of copulation allowed while the heat is passing off the female, as also when the age of the female is much in excess of the male. Where inaptitude to conception appears in the mare which has not yet bred, and it is certain that the cause does not rest with the stallion, some experiments seem to point to more successful results from manipulation and dilatation of the mouth of the uterus with the naked hand.

Conceptions are generally more certain and fruitful when females are receiving a somewhat improving diet; while following conception, and during the earlier period of gestation, they are rather disposed to improve in condition. Acting upon this knowledge, the treatment of certain of our breeding stock, ewes in particular, is often exceedingly unnatural, and the fertile source of much disease and loss amongst both these and their produce. It has often appeared to me that the treatment of these animals at this particular period might be very readily resolved by stating it in the form of a simple question—Whether, if, after having made a selection of rams from a
stock of sound and approved constitution, ewes were less suddenly and highly forced at the period of conception, and then kept steadily progressing—resulting certainly in a smaller number of lambs being born, most probably (I could almost say certainly) a lower death-rate of both ewes and lambs—the remuneration would not be greater than with a larger crop of lambs and an immensely higher per centage of loss in old as well as in young, not considering the deteriorating influences such irregularity of dietetic arrangements have ultimately on the constitutions of succeeding generations?

There is little fault to be found with those who, in their management of this stock, act upon the opinion that during the early period of gestation the ewe can healthfully and profitably subsist on a diet less nutritious than is needful for her either immediately before or some time subsequent. It is where this lowering is carried too far—when the economising of food is too rigidly enforced—that those mischievous results alluded to most commonly occur. Towards the latter part of the period of gestation the foetus is acquiring a magnitude which calls for material support from the dam, which, when neglect
or parsimony withholds, must be drawn from the internal resources of the parent, much to the detriment of the constitutional vigour of both mother and \textit{fetus}, which no amount of after-liberality in dieting can reinstate.

The exact manner in which irregularity, or fits and starts, in dieting operates detrimentally on breeding ewe stock is not invariably the same. Three particular manifestations of it, however, are deserving of notice, as well from the frequency of their occurrence as the fatality of their results.

1. \textit{Arrested fetal development, with the presence of one or more dead fetus}; 2. \textit{Cerebral congestion}; 3. \textit{Anæmia}. These generally occur as to time in the order they are mentioned, but are fatal in their inverse enumeration.

It is not difficult to understand how the first of these results of irregular dieting—viz., \textit{arrested fetal development, with the presence of one or more dead fetus}—proves fatal to the mother. It is generally found, when the ewe has more than one \textit{fetus}, that she has been, at conception, in an improving state of body, attended as a natural consequence with much functional excitement, but being
shortly removed to a comparatively sparse diet, and kept on such for too lengthened a period, the system of the mother is unfit to nourish this extra fœtus in utero, which is thus doomed to death, but is rarely expelled until parturition occurs. If, however, not one only, but all the fœtus are so far arrested in development as to terminate in death, immediate and premature expulsion will follow, constituting what is known as “abortion” or “slinking lamb.” Although this irregularity of dieting is mentioned as one cause of the presence of dead lambs at the natural period of birth, it must not therefore be concluded that it is the only one operating to produce this, or even ordinary abortion; while the latter of these, whether occurring from mechanical injuries, constitutional disorders (inappreciable save by their results), or other agencies operating on the system, and thereby on the uterus, is rarely productive of dangerous consequences to the ewe. The presence at birth of a greater or less number of dead lambs, where there are numerous cases of twins or triplets, would of itself be a matter of little moment, were it not in this instance connected, as the exciting cause, with the death of the ewe. This it does
frequently by the retention of the fetal membranes, which, becoming decomposed, produce by being absorbed low fever, and this in an animal already exhausted is a matter of serious import.

2. Cerebral congestion almost invariably occurs towards the end of gestation, when the ewes, after having been kept on a very moderate diet during the winter, are being more liberally treated, so as to ensure, it is thought, a more vigorous progeny, and a more abundant supply of milk when these are born. Here it is not the liberal diet that is wrong, for ewes really require such: it is its amount in relation to the extent of, or following, the preceding lowering treatment. This liberality of dieting of necessity resulting in an increased volume and somewhat altered composition of that which is the life—the blood,—this fluid is sent careering with more than usual vigour through its appropriate channels. The brain, always and in every condition an organ susceptible to congestive action and actual effusion of blood, is peculiarly so during the period of gestation and immediately previous to the act of parturition. The predisposing cause is the parturient state; the exciting, the dietetic stimulus. Coma, or insensi-
bility, with the power of voluntary motion either perturbed or entirely lost, are the characteristic features of this affection. When able to move, the animals stagger forward with head erect and eyes protruding. Complete paralysis, with the death of the fetus, are the usual results.

3. Anemia, the most destructive of the results mentioned, is only to be met with or expected in its most fatal form when the stinting process has been carried to such an extent that no amount of dieting will restore the ewes to vigorous health previous to parturition. It is then that the excessive demands upon the system during intra-uterine life, followed by the weakening effects of lactation, begin to produce their natural results. The animals gradually become more emaciated, at length cease to receive the food offered, no matter of what quality; they become "poked," as the oedematous swelling beneath the jaw is termed, and the eye and visible mucous membranes have a blanched appearance, exactly resembling the disease known as "rot," the principal difference in the affections being that they owe their origin to different causes. In truth, I believe the
former has not unfrequently nor inappropriately been described as "Hunger Rot."

As to the course of treatment most appropriate on the manifestation of these maladies, seeing that here, as with many other disorders, prevention is not only better but easier than cure, it is consequently of the first importance that intelligent and careful attention be directed to the entire general treatment of parturient ewes. In addition to a fair amount of exercise, their diet, in particular, ought to be as free as possible from those periods of sudden and great stimulation during conception, followed by a more lengthened period of restriction, to be again replaced by a diet of fulness and repletion. When a dead foetus is removed from a dam, either through the act of abortion or parturition, or by manual interference, the same line of treatment is indicated as respects the mother. Support, if necessary, the system by appropriate dieting, or probably the exhibition of such stimulants as ale or spirits may be found needful. If parturition is successfully accomplished, a certain amount of local treatment is also sometimes advisable. The uterus and vagina, especially if there is much
of a disagreeable discharge from them, had better be syringed with tepid water and a mild solution of chloride of zinc, or permanganate of potass, which will not only destroy the fetor, but give to the secreting membrane a tendency to healthy action.

*Cerebral congestion,* wherever occurring—for it ought to be remembered that it will occur not only amongst ewes which have been stinted and afterwards fed to the full, but also in those which all through gestation have been kept on a good and nutritious diet, it being only necessary for its development at parturition that there be an exaltation in the functional activity of those organs connected with the formation of blood, an increase in quantity, and richer and more plastic materials—must have directed to it all our endeavours to correct this alteration of the circulating fluid, and if possible obviate or restrict its tendency to effusion. Depletive measures—the abstraction of blood and the exhibition of purgative medicines—have been deemed by some the first requisites. But although good effects have been observed from the employment of the former of these, it is not advisable that it be pushed too far, seeing that although we can by this means lessen the
whole amount of the circulating fluid in the system, we cannot deal with the blood but as a whole—we cannot deprive it of those elements which are here believed to exist in preponderating amount. The bowels must be assiduously attended to, as they are generally found in a state of constipation or torpidity, less amenable to the action of purgatives than when confined from other and more ordinary causes. The exhibition of neutral salts, such as sulphate of soda and nitrate of potass, to those of the flock not exactly suffering, would have a tendency to produce a correct reaction in the blood. They have this to recommend them, the animals will take what is needful—small quantities in this case being better than large—sprinkled upon their food. The application of a smart blister to the back part of the head of those affected has sometimes, if applied before effusion has taken place, seemed productive of much benefit; while, when the earlier symptoms have disappeared, the after support, by the judicious administration of stimulants, may tend to reinstate the animal in its usual health. They are, however, very doubtful cases.

In dealing with those instances of anæmia which
are ever the result of decidedly bad management in dieting—the ewes, immediately after conception, having been allowed to become so far reduced that the improvement in their feeding comes too late to rally the system ere the depressing influences of lactation have begun to operate—if any are to be saved, it must be by good nursing and careful regimen. Shelter must be provided from the vicissitudes of the weather, and food of the most nutritious and readily-assimilated nature given often and in small quantities. Common salt and some of the preparations of iron may with benefit be added.

There are many of our most valuable ewes on our best lands, if not kept during the whole time from conception until parturition on a full and generous diet, are at least during the greater portion of this time supplied with a full quantity of turnips, first on their pastures, and latterly on the land where these are grown. As it is well known that our Leicester ewes are voracious feeders, and also that exercise is absolutely necessary to the enjoyment of health in all pregnant animals, breeders have endeavoured to counteract the evil effects of this propensity
on the one hand, and on the other secure as far as possible the advantages resulting from the observance of the laws of health, by removing their ewes from the turnip brake during the day, and returning them at sunset. Could we ensure that during the day-time, while on their pastures, the stock were kept moving about as they are wont to do when ordinarily grazing there, it were all very well, and the object would be attained. In the most of these cases, however, the amount of exercise taken by the ewes is insignificant. The inducements for them to roam in search of food over the pasture lands is small. There is little calculated to please their palates after they have been folded on turnips, and they very soon seem to acquire the knowledge that in a few hours they will be taken to the roots left in the morning. The consequence of this is, that when driven from the turnips they quietly rest themselves by the side of the fold until the hour returns when they are again admitted, when, with appetites quickened by their self-imposed fast, they determinedly gorge themselves with enough upon which to rest and ruminate until the period again occurs for the repetition of the act. In this way are the principal objects sought to be
obtained by this division of time between pasture land and turnips to a great extent, if not altogether, lost; and another train of consequences very undesirable is the result of the repeated gorgings to which the animals become addicted.

There are several affections quite common amongst our better fed ewes, and on our best lands, easily enough traceable to these repeated gorgings or filling to repletion of their capacious digestive organs. Of these the most common and least difficult to understand is that which is generally recognised amongst shepherds and flockmasters by the term "breaking down"—a rupture of the muscular walls of the abdomen. This, in its milder forms, is not regarded as a serious affair, seldom proving fatal to either ewe or offspring, although it certainly does materially lessen the value of the former as a breeding animal. In the more severe cases, however, it is not unfrequently the precursor of, or associated with, one or more dead foetus, and a difficult, protracted, and dangerous parturition, usually resulting in the death of the mother. Although such cases may be treated, and in the milder forms successfully, more profit is likely to accrue from attention bestowed in consider-
ing the *rationale* of that process by which this result—the rupture of the abdominal walls—is reached, that thereby knowing the cause, means may be the more surely adopted for the prevention of this mischief. It is wonderfully simple, and probably purely mechanical. The ewes thus affected are generally pregnant with twins or triplets, while, as gestation advances, the gravid uterus attains a considerable bulk and weight, which, in connection with a capacious paunch, distended with a rather bulky material (turnips), proves too much for the natural resistant power of the abdominal muscles. It is also to this mechanical pressure of the digestive organs on the contents of the womb, and the presence in them of a bulky material at a temperature much below the normal standard of the animal body, that we must look for the cause of much arrested *fetal* growth, death, and premature expulsion. As a corrective of these results, some system might be adopted by which, in part at least, the evil results of this full dieting of turnips would be avoided—viz., through the employment, to a certain extent, of some material less bulky and more nutritious. There is, no doubt, an objection to the use of such on the score of
expense: still, a substitute, in part, of good linseed cake and hay might be profitably employed, as respects those animals, at least when somewhat advanced in gestation, which are apparently to give birth to twins or triplets.

In addition to what has been mentioned as the evil results of errors or irregularity of dieting in breeding ewes themselves, there ought to be taken into account the influence these same causes exert upon their future progeny, even when that influence has not been so far detrimental as to result in death previous to or at parturition. We can easily understand, from the intimate connection existing between mother and foetus, that any constitutional change or disturbance taking place in the former must have an influence on the latter. The sudden alternations from plethora to anemia, and from anemia to plethora—from a sufficiency of exercise to a lazy recumbency—cannot be undergone by pregnant ewes any more than by other animals without detrimental consequences to the health of their future progeny.

The peculiarly fatal congestive sanguineous disease of lambs which has of late years been extensively distributed seems undoubtedly to have its origin
during _intra-uterine_ life, in connection with certain peculiar changes occurring in the maternal blood, upon which the _fetus_ is immediately dependent for its development and life.

**Parturition.**—In superintending the performance of the act of parturition in all our domestic animals, there are certain little niceties well deserving of attention, damage not unfrequently resulting from undue interference with the course of natural labour.

Manual assistance, as a rule, should not be had recourse to unless there is something abnormal relating to the mother, the _fetus_, or the presentation—unless there is a malformation of the _pelvis_ or other parts of the organs of generation, monstrosity, death, or malpresentation of the _fetus_; nor in natural labour with defective _uterine_ action until there is rupture of the _fetal membranes_; and in no case if the attendant has previously been in contact with morbid animal matter.

As regards the _placental membranes_, or afterbirth, if not expelled shortly after the accomplishment of the act, they had better be removed by the hand, seeing that when retained in the uterus after
the natural contraction of that organ they are a fruitful source of constitutional poisoning and putrid fever.

Immediately following parturition in all animals, even when that act has been accomplished naturally and without mechanical interference, several diseases are apt to occur which all claim a relationship to this important and critical act of the animal life as a predisposing or exciting cause.

_Uterine and vaginal hemorrhages_, commonly known as "flooding," occur immediately following the act of parturition, and when not destructive of life by fatal syncope, generally arrest for some days the secretion of milk, and necessitate some extra care being bestowed on the animal. They are best treated by _plugging_, and affusion of cold water over the loins. The former is performed by the insertion into the uterus of a good-sized towel or handkerchief, which should be retained there for a considerable time.

Of greater importance than these, both from its fatality and frequency, is the disease known and recognised in cows by the term "parturient or milk fever," and in ewes by that of "inflammation." In the former
of these animals the disease generally appears in one of two forms: first, the *apoplectic*, where the lesions are found in connection with the great nerve centres, the brain and spinal cord; second, the *abdominal*, in which the changes are associated with the organs within the abdomen, the womb, bowels, and lining membrane of the cavity.

In ewes the fever almost invariably takes the abdominal form, and in them is more to be dreaded from the apparent capability of propagation from the diseased to the healthy.

When occurring in cows both of these forms may be looked upon as fatal in proportion to the proximity of their appearance to the act of parturition. They are also more to be feared in animals which have reached maturity, are good milkers, perfectly free from any other disease, have had an easy parturition, or previously been subject to an attack.

Both forms are characterized by the suddenness with which the symptoms appear, the rapidity of their course, and general fatal termination.

The *apoplectic* form is ushered in by staggering gait, want of control over the voluntary movements, staring eyes, full pulse, and sterorous breathing, ac-
BREEDING OF ANIMALS.

accompanied, or more properly preceded, by diminished secretion of milk and torpid bowels. Very shortly the animal becomes unable to stand, loses consciousness and the ability to swallow, wildly dashing her head from side to side. Death, in the worst cases, rapidly results from the extensive organic changes in connection with the brain and anterior part of the spinal cord, involving arrest or fatal impairment of functions essential to life which depend for their healthy existence on the integrity of these centres. When the abdominal organs alone are implicated there are the common symptoms of diminished secretion of milk and torpid bowels, accompanied by much fever, restlessness, and accelerated and hard pulse: there is, however, no coma, but gradually increasing pain. Occasionally cases will be met with where both forms seem combined: in these the cerebral symptoms will generally predominate.

All these cases, when seen early, or while the pulse is possessed of sufficient volume, are judiciously treated by blood-letting and the exhibition of purgative medicine. For the apoplectic form a suitable draught may be formed with sixteen ounces of
Epsom salts, one drachm of croton seeds powdered, half a pound of linseed oil, and two bottlefuls of gruel. This ought to be followed every three or four hours, until a result is obtained, with some diffusible stimulant, such as from two to four fluid ounces of solution of carbonate of ammonia in one or two pints of good ale and as much cold gruel. Benefit will also be derived from a smart blister applied to the back of the head, and the use of warm water enemata. For those cases where the abdominal organs are mainly involved, it will be preferable, probably, to leave out the croton, and double the quantity of oil; and instead of the ammonia solution, give every four hours four fluid ounces of sweet spirits of nitre, half a drachm of camphor, six fluid ounces of solution of acetate of ammonia, with fifteen drops Fleming's tincture of aconite, or, instead of this latter, in every alternate draught two fluid ounces of laudanum. Hot water applied continuously for some hours through the medium of woollen cloths to the abdomen, and afterwards followed by a mustard or turpentine application, will be found to answer well.

Although a fair per centage of cases of puerperal
fever treated in this manner will recover, more satisfaction will result when attention is directed to the management of parturient animals with the view of preventing its occurrence; not that there is any specific medicinal or dietetic which, if employed, shall operate thus favourably in every case, rather that experience most certainly teaches that by simple but judicious means much can be done to render it of less frequent occurrence. Let the animal, some weeks previous to parturition, have a fair amount of daily exercise; feed her moderately, not with highly stimulating food, but such as will have a tendency to keep the bowels in a soluble condition; allow her daily in the food or water half an ounce of sulphate of soda, with half that quantity of nitrate of potass; give her weekly, or even, as she approaches calving, oftener, from eight to sixteen ounces of Epsom salts along with one or two pounds of treacle dissolved in two bottlefuls of gruel. Should milk be troublesome on the udder, it may be drawn off. Immediately after calving repeat the physic, and continue for a week at least the salt in her food or water, feeding moderately.

In ewes, when suffering from this fever after lamb-
ing, known in them as "inflammation," there is not at first much evidence of pain: they separate themselves from the rest of the flock, have no inclination to feed, but a disposition to remain in one spot, general febrile symptoms, head drooping, with frothy mucous adhering to the angles of the mouth, and general haggard expression of the countenance. There is also occasional swelling and lividity of the external organs of generation, from which there may be a slight discharge. Treatment is with these very unsatisfactory. If attempted, something of a similar nature to that recommended under the abdominal form of this fever in the cow seems to promise the best results. An oleaginous purge, followed by repeated doses of sweet spirits of nitre, Mindereru's spirit, camphor, and tincture of aconite or opium, to which may be added fomentation of the external organs of generation, and a thorough cleansing of the uterus by injections of such disinfecting agents as solution of chloride of zinc, chloride of lime, or permanganate of potass.

In all cases where the disease has unequivocally declared itself, the most careful and energetic employment of means must be adopted to arrest or
circumscribe its progress. As there appear very good reasons for believing that it is capable of propagation by contact, direct as well as indirect, the first step must be the removal of the diseased from amongst the still apparently healthy. It is generally advisable to change even the fold or location of these latter, although the situation to which they are removed is less favourably circumstanced as to shelter, &c., than the one they have left. Any attendant connected with the diseased must on no account undertake the handling of the healthy. As a further precaution against its propagation, it might be advantageous to disinfect those ewes still unaffected which have had contact with the diseased. This can be readily enough accomplished either by taking them into a tolerably close house and exposing them to the fumes of sulphurous acid obtained by burning sulphur, or by means of a watering-pan thoroughly drenching their fleeces with a solution of chloride of lime, permanganate of potass, or carbolic acid.

Although all these things may be done at lambing, and when the disease has declared itself, much more may be accomplished long anterior to this period having a tendency to render these measures
unnecessary. All pregnant animals, as remarked when noticing the treatment of parturient cows, thrive best, and seem least liable to disease, when allowed, especially during the latter period of *gestation*, a fair amount of daily exercise, and food of not too highly stimulating nature, and such as will ensure a regular and healthy action of the bowels; while in many, where a tendency is apparent to plethoric diseases and other affections of the blood, good is occasionally derived from a frequent exhibition of such saline agents—which are readily taken in the food—as sulphate of soda, hyposulphite of soda, or nitrate of potass.

Occurring amongst cows at parturition, and having a resemblance in some of its symptoms, as well as frequently mistaken for one form of *puerperal fever*, is an affection known as "*puerperal paralysis*” or "*loin fallen.*** Ordinarily this is not a fatal disease: it is unattended by fever or general disturbance, and is characterized by partial or more complete loss of motion, and more rarely sensation of the hind extremities. Treatment consists in acting freely on the bowels, and administering twice or thrice daily in ale or gruel such stimulants and tonics as from
two to four drachms each of carbonate of ammonia, gentian, and ginger, together with stimulation of the spine with turpentine liniment.
REARING OF YOUNG STOCK.

While it is undoubtedly certain that the treatment and the condition of the dam are closely connected with the development and health of the foetus—that a vigorous and healthy mother is more likely to give birth to vigorous and healthy progeny than one in an opposite condition—it is equally deserving of being remembered that of all classes of stock none are more liable to be unfavourably influenced by errors of location and dieting than the young. Want of sufficient shelter, excessive moisture of atmosphere or soil, bad sanitary arrangement of stables, want of space for exercise, together with defective nutriment, are separately, as well as in the aggregate, more damaging in their influence on the young than the adult.

For some time immediately succeeding birth the
young are supplied through the medium of their mother's milk with a nutritive material amply sufficient for all their wants, than which there is no single article of diet possessing in such exact proportions the necessary elements of healthy animal nutrition.

From the subserviency, however, of the domestic animals to the wants and requirements of man, much of the cattle stock of our country is reared without ever enjoying the admitted advantages of directly deriving their support from the dam. They are, in truth, produced rather as a means towards the accomplishment of an end—as a step in the process of maintaining a steady milk supply sufficient to meet the wants of the population—than as a distinct, definite result.

Their rearing is, as a rule, conducted in direct opposition to the indications afforded by a very slight knowledge of the structure and functions of the digestive organs of these young animals. Milk, their natural article of diet, being easy of assimilation, and requiring no remastication, their digestive apparatus, particularly the stomach, is much dissimilar in nature to what it attains in after life; while, from
the nature of this aliment, and the relations which exist between it and the stomach, it is necessary to the maintenance of healthy functional activity that it should be taken repeatedly in moderate quantities, and by a process requiring the co-operation of several functions.

As, however, the laws which regulate any department of the animal economy cannot be infringed with impunity, but exact with unsparing rigour, as the penalty of this infringement, disease or death, so it is not to be wondered at that a system of dieting completely removed from what is natural should operate perniciously, and with peculiar force, on the constitutions of the young.

_Dyspepsia_, or a peculiar form of indigestion, always gastric, sometimes intestinal, accompanied most frequently with acute diarrhoea, and known in this form by the characteristic term of "white scour," indicative of the colour of the faeces, showing itself during the period of milking in one form or another, is the cause of at least half the mortality occurring amongst this class of stock. The causes of this malady are not to be looked for in the animals themselves, nor are they traceable to any constitu-
tional weakness or structural disease, but to injudicious and extremely unnatural methods of rearing these. Not satisfied with the comparatively slow process of one cow rearing in the season one, or, at the most, two calves, and endeavouring to meet the extra demand for animal food, other methods of rearing these have been adopted.

It is to this artificial system of calf-rearing, and the accompanying injudicious feeding, that the great mortality of young stock may be attributed. That they can be reared by the hand, and with a much smaller per centage of deaths than ordinarily happens, there is little doubt. By the system of dieting, however, which is almost universally pursued, the whole process of digestion is perverted: not only is the quality of the aliment which is given wrong, but the quantity and manner of giving it is absurd. That the dieting is principally at fault is obvious when we consider that the affection is almost unknown amongst those drawing their milk from the dam, or amongst lambs, save when these latter are reared by the hand, in which case they are alike liable, and exhibit the same symptoms. In the ordinary method of rearing calves, milk, the material
most perfectly fitted for their nutrition, is even dispensed with, or too often merely employed to flavour some less nutritious, but commercially cheaper, material. Irish moss, linseed, and pea meal are all employed as feeding materials, generally alone, not as they ought to be, mixed, in varying proportions to meet the requirements of the animal, and are frequently prepared in such quantities as will suffice for feeding the animals for two days. Thus the material is not even given in its most wholesome form, but allowed to stand until sour from fermentation.

In those cases, again, where milk is given in entirety, the little creatures are fed from a pail, each endeavouring, by a succession of greedy gulps, to obtain as much as possible to compensate for a lengthened fast, the stronger of course obtaining the larger share. They are rarely fed four times daily, generally not so often. The milk is in this way swallowed or gulped, certainly not sucked, and the quantity is much more than the stomach is fitted to act upon, added to which the whole process of insalivation, so necessary to healthy digestion, is dispensed with. The milk, on entering the stomach,
is quickly enough curdled, not merely from the natural free acid present, but from having in addition the sour fluid resulting from an already imperfectly digested meal. The coats of the organ, from this gradual accumulation of material, become abnormally distended, and gradually paralysed. No sooner, however, is the natural tone and contractility of the stomach gone or impaired, and its functions arrested, than the contained material becomes subject to alterations consequent on the operation of chemical laws: the mass is gradually softened, broken up, and mixed with the more fluid material surrounding it, giving rise, in its passage along the canal, to that train of symptoms characteristic of the disease.

Much of the annoyance and loss almost universally associated with the hand rearing of calves might be avoided by a strict attention to a properly regulated, and as natural as possible, system of dieting. If at all possible calves ought to have milk for at least three months, and while receiving this milk they ought to have the opportunity of partaking of a little hay, sliced roots of some kind, and good linseed cake. The youngest ought to have their milk from the most recently-calved cow. The intervals allowed
to elapse between the feeding times ought to be much abridged. For the first month of their life milk should be offered them at least four times daily—oftener is better; while it is advisable to keep the animals rather pinched than by a mistaken kindness to fill the stomach to repletion.

In giving calves their milk from the pail thus often, it requires certainly much time, and, where many are to be fed, much tact, in order to induce them to suck the milk through the action of the finger in the mouth. As a substitute for this, and with a view to the obtaining of the beneficial results of insalivation, I may here mention a very simple device for feeding them, which I have seen adopted with success. The calves were arranged in paddocks separately, these paddocks or boxes occupying two sides of a passage. At the divisions between the individual boxes, situated at a convenient height from the ground, was strapped a semi-circular tin box, with its bottom to the wood, of such a capacity as to hold milk sufficient for one meal for two calves. The exposed semi-circular surface had two small tubes, projecting severally into the boxes between which it was situated, and
attached to these nozzles was a piece of chamois leather or gutta percha tube having a small external orifice. The milk, to the quantity desired, was poured into these tins; while the animals, by a very little education, soon acquired the habit of seizing hold of this artificial teat, and by a gentle sucking action readily appropriated the contents of the feeding tins. It must be observed that the apparatus requires to be kept scrupulously clean; and also, if the calves are guilty of pulling at them, to have the tubes removed between feeding times. This, I may repeat, is no ingenious suggestion, as I have seen it in actual operation; while I can testify that the mortality amongst animals thus fed was much below the average. Where milk cannot be procured, or only in limited quantity, a tolerable substitute or addition may be formed by treating with hot water, so as to form a thin jelly, two parts of bruised linseed or linseed cake and one part of pea meal—if not liquid enough it may be further diluted with water or milk—and have added to it for each calf one or two eggs well whipped twice or thrice daily. Subsequent to weaning, or between this and the period when animals are more immediately expected to
fulfil the purposes for which they are bred—in the horse when he is able to work, in other animals when employed for breeding or feeding purposes—much damage is produced by scanty or injudicious dieting.

It seems to be an opinion too commonly entertained amongst many who rear stock that it is quite immaterial what young animals receive as food, provided they are kept "going on," as this condition of life is termed: much nearer the truth would it be were they to use, instead of the term "going on," that of "from starvation." They seem to forget that it is during this period the animals are perfecting their development of the different organs and tissues of the body, and that the nutritive material essential for this building up of bone, muscle, sinew, &c., is only to be obtained from the food which is taken into the system.

There is no more false economy than that of stinting young animals in regard to diet. It impedes and dwarfs their natural development, weakens the constitution, and sows the seeds of disease, which require only the favouring influence of time and circumstance to ripen into maturity. It may seem
expensive when animals are not yielding for this liberal treatment an immediate return; nevertheless it will ultimately be found the cheapest.

Amongst certain classes of horses, when placed on liberal diet and active work, many of those annoying skin affections, dropsical limbs, and ever-recurring attacks of indigestion and other bowel complaints, together with many other diseases ordinarily considered as local, may not improperly be referred to meagre dieting during early life, as the most frequent predisposing cause; while amongst cattle and sheep the major portion of that fatal class of blood diseases represented by quarter ill and braxy, bear a similar relation to deficient early nutrition.

In sheep—the shortest lived of our domestic animals, and which are hurried rapidly through every stage of life until they reach the shambles—the evil results of errors in early dieting are most distinctly marked, and occasionally attain an alarming magnitude.

It is a well-understood fact that, under favourable circumstances, lambs, when separated from the ewes, are much benefited by a change to pastures other
than those on which they have been bred. So thoroughly alive are the breeders of sheep to the beneficial results of such a change that it is too often made without their having taken sufficient trouble to inform themselves whether or not, in its main features, this change is likely to answer their requirements—whether there is food sufficient and of such quality that they shall not actually lose condition, or receive any decided check or arrestment in their growth. In those cases where the nutriment received is insufficient for the healthy maintenance and steadily progressive growth of these young animals—where the system, for its support, has to fall back upon itself—the evil results of this retrograde or wasting process, with the exception of the impairment of condition, are not at first very obvious; but, if persisted in, irritability and derangement of the digestive organs, with even more serious results, are certain to follow. The most damaging consequences are, however, delayed until removed from this stunting, and placed on a more liberal diet, most probably turnips. Here the sudden increase of nutritive material is almost certain to produce an increase of mortality, either through affections of the digestive
organs—those most directly connected with the reception of this increase of nutriment—or owing to the lax and immature nature of all the tissues, from the sudden appearance of some of those destructive blood diseases in which extravasation of the circulating fluid is a marked feature. The already depressed vital energies are unable successfully to deal with great and sudden changes either in quantity or nutritive quality of aliment, the healthy balance naturally subsisting amongst the several animal functions is disturbed or destroyed, and disease at one or more of the steps in the process of food assimilation is more than likely to occur.

Much of this might be prevented if, instead of allowing young animals to receive great and sudden checks in their development, they were kept gradually but steadily improving, or if they did lose condition, that its recovery were not attempted by a sudden effort and at once, but rather by means gradually progressive. No great change, either as regards locating or dieting young animals, ought to be undertaken without an endeavour being made to accommodate the system to such alterations.
EPIZOOTIC AND ENZOOTIC DISEASES.

The ordinary difficulties occurring when attempting to define or circumscribe any generic term are found particularly annoying when we have to deal with such terms as *epizootic* and *enzootic*.

Any disease appearing amongst animals, other than men, when spread over a considerable tract of country, and affecting a number of the same species at the same time, and which, as far as we are able to discover, is unconnected as an immediate cause with local influences or dietetic arrangements, is ordinarily termed an *epizootic*. To this definition there are exceptions, while by general consent the term is restricted to those wide-spread animal fevers, *rinderpest* (cattle plague), *pleuro-pneumonia epizootica* (the contagious lung-fever of cattle), *epizootic aphtha* (foot-
and-mouth disease), and variola ovina (small-pox in sheep), known only to us as the result of the dissemination and multiplication of the germs or morbid matter of these specific diseased conditions, and which, wherever they have appeared, have attracted universal attention. When disease, although general as to individuals, is circumscribed by locality, and distinctly traceable to influences peculiar to that locality—as geological formation, temperature, condition of soil, nature and quantities of the food supplies, &c.—it is described as being enzootic. The diseases grouped under these classes are the most important to which our domestic animals are liable. Amongst cattle and sheep they are the cause of probably three-fourths of the mortality.

At all times, and in every country, cattle plagues have been an object of interest alike to the stock-owner and political economist—the former from the involvement of individual interests, the latter from their affecting the material wealth and increase of the population. Impoverishing nations, pre-disposing to or actually inducing disease and death in populations, their occurrence has most justly been looked upon as little short, in their evil results, of the
devastating effects of war, associated with or as a sequel of which they are not seldom found to appear. Considering the nature of the climate, the ratio at which the population is increasing, and the nature of their work, there is probably no country which can less afford to be indifferent to the nature of epizootic and enzootic diseases, and the laws which regulate their appearance and propagation, than Great Britain. While knowing that none of these terrible cattle epizootics are indigenous to her soil, is there any country where the energetic carrying out of rational preventive measures would be followed with more beneficial results? No doubt, there are large and important interests connected with this question, which, wherever it receives a national consideration, require a careful and judicious handling; while not the least of the obstacles in the way of a rapid adjustment of the matter is the difficulty of bringing home to the mind of the general public the difference there is between free trade in cattle and free trade in disease, with the difficulties which exist in obtaining the former apart from the latter.

For a considerable number of years—dating from
1841 and the impetus then given to the foreign cattle trade by the removal of certain previously-existing restrictions—on to the present, there has occurred at irregular intervals very aggravated out-breaks of the contagious lung-disease of cattle, frequently accompanied by the more manageable foot-and-mouth disease. Now, although it may with truth be affirmed that since its introduction or first appearance in this country, contagious pleuro-pneumonia has never been entirely banished, it is yet no less certain that every fresh exacerbation of the disease over the entire country, or any large district of it, has been distinctly traceable to fresh importations of foreign cattle.

More recently, and, as all evidence seems to substantiate, derived from the same source—contagion propagated by imported cattle,—the herds in many districts of Great Britain were threatened with extermination from that terrible scourge of the race known variously by the names of rinderpest or cattle plague, and which was only banished from the country by slaughtering of the contaminated and the enforcement of stringent prohibitory measures regarding the admixture of imported with
home-bred stock. The extent of our railway communication, and the facilities with which stock can be moved from the ports of debarkation to districts inland, operate powerfully towards the distribution of these contagious epizootics. The evil, however, does not stop with contaminated railway carriages, the damage being indefinitely extended over the country from the travelling along and resting upon our country roads, to accommodate our local fairs and weekly markets, where, without respect of where they have been brought from, all are indiscriminately ranked together. The fences separating our fields from the parish and turnpike roads are seldom or never sufficient to prevent animals leisurely passing along these having direct contact with such stock as may be pasturing in the fields adjoining. There is little doubt that our feeders and breeders of stock are anything but indifferent to the consideration of these scourges. To be indifferent to their consideration is to be indifferent to their own interests. More meat and more manure is the cry which is heard loudest from the ablest of our agriculturists, those whose eyes are open to the requirements of the day. The produc-
tion of grain is, and has been for some time, a matter of secondary importance. The most approved methods whereby the greatest amount of beef and mutton may be produced from a given number of acres have by far the best chance of gaining a hearing from our British farmers. In truth, we seem but in the infancy of our knowledge and appliances in much that relates to the feeding of animals. I have ever thought that it is an extremely hard condition that the man who is so smartly treated if attempting to dispose of his ox which has become a victim of pleuro-pneumonia, should receive so little assistance from that same law which punishes, in the protection of his stock from disease; more, that it is decidedly unfair to permit the dissemination of diseased cattle over the entire country, and then punish those who, from no fault of their own, are endeavouring to make the most of a misfortune. I do not put this forward as a plea for the traffic in diseased animal food, but merely state the case as it may be viewed by any one from an unprejudiced point of view.

Nor can I understand, on the other hand, how our stockowners have been so apt to fancy that those
who have approached this subject with a view to a calm investigation of its causes and remedy were so many bitter foes leagued against their interests. No doubt, in the consideration of this question, there are many difficulties, but why should they be deemed insurmountable? An inspection of imported cattle, it is understood, does exist; but it is evidently worthless for the accomplishment of the end in view. Nor will any mere inspection ever succeed much better. The most any inspection without some quarantine can accomplish is the detection and detention of the actually diseased; but in how many instances are animals passed as sound in which disease is latent, not to be developed in obvious symptoms for many weeks and under favourable circumstances? Doubtless many will say we may as well prohibit the importation of foreign stock as establish a quarantine sufficient to guard against the contaminations of such a disease as pleuro-pneumonia. If this should be the case, rather let us have no importation of live stock than the periodic outbreaks of these direful scourges as we have already experienced them. For there are considerable doubts if we do not lose more from one disease, pleuro-
pneumonia, alone, than all we gain by the live cattle we import.

A plan certainly much safer than that at present acted upon, and one which, in a short time, would most perfectly adapt itself to the circumstances and the supply of our wants, and which, as regards its reasonableness and feasibility, the more intelligent of those who have given much attention to the subject are gradually becoming convinced is, in our present circumstances, the best which could be adopted, is the compulsory landing of all foreign stock at certain specified ports, with their enforced slaughtering there within a definite period after debarkation—the hides and offal not to be removed until disinfected, and under the authority of a qualified officer.

So long as there is allowed an indiscriminate importation and distribution over the country of stock suffering from contagious epizootics, no amount of individual or associated exertion will ever perceptibly lessen the mortality arising from these plagues; while the minds of our stockowners will ever be periodically subject to harassing anxieties, and their pockets to rapid draining off of their contents. It is from our legislature that we must look for any assistance
worth being entertained; while probably the time is not far distant when, even if unwilling, the Government may be forced to give the whole question a fair consideration, and this the more readily seeing it is so intimately connected with the solution of some other questions more easily understood as important, such as, How is our increasing population to find a suitable and pecuniary-reasonable supply of animal food? or, What is the relationship subsisting between the diseases of the great centres of our population and the nature of the food with which they are supplied?

*Enzootic* diseases—those which, although occurring amongst a number of animals at the same time, are yet circumscribed by locality, and are directly traceable to influences local or dietetic—notwithstanding their acknowledged importance and undisputed amenability to properly-directed preventive treatment, have not received the attention which, from these circumstances, they deserve. In certain situations and amongst particular animals—sheep, for example—their appearance is characterized by even a greater mortality than the contagious epizootics
already spoken of. Unlike these plagues, they are not in this country, and as a rule, considered as propagated by contagion, although in other countries of Europe, many of them—the anthracoid, for example—are understood and spoken of as decidedly contagious. In their origin and special peculiarities traceable to influences artificial as well as natural, to geological formations, meteorological conditions, character of soils and the nature of their products—the vast changes which modern scientific agriculture has induced during the last half century, as well in regard to the condition of soils and their crops, as to the variations in type and constitutional peculiarities of our domestic animals—this class of diseases has probably rather increased than diminished.

It is an acknowledged fact that in proportion as we interfere with the natural habits of any animal, the farther we remove them from what may be looked upon as their natural or more primitive condition, so do we increase their susceptibility to disease, and lessen their power of resisting its inroads. All, however, of the advances which have been made towards the improvement of the different varieties of our domestic animals are based on this very inter-
ference. However, in this selection of stock animals, and direction of their reproduction and development, there has been too often left out of reckoning the fact that, to attain the maximum of success in this breeding and rearing of stock, there must exist a just relationship between the animals we possess and the external circumstances—climatic, local, and dietetic—to which they are subjected. There are certain general laws easy enough of discovery, in accordance with which healthy animal existence is maintained, but which cannot be ignored or trampled upon with impunity. Other influences of an adverse character, but less patent as to their nature and mode of operation, occasionally do occur, resulting in disease and death, thereby thwarting expectations in the production and rearing of stock. These too, however, we may confidently anticipate, will yield their secrets to patient, well-directed investigation.

Many of those causes classed as natural—geological formation, altitude, temperature, condition of soil, &c.—operating locally in the production of disease, have by actual experiment and experience been proved to be capable of alteration or great amelioration; and surely the artificial—such as are associated
with reproduction, dieting, &c.—are not less so. Let it be remembered that animals, like ourselves, are vital organisms, not mechanical machines merely—that they are acutely sensitive to every influence, material as well as artificial—that our interference, to be void of danger, must be an interference directed by judgment and based on ascertained fact rather than speculative hypothesis, or a blind reaching after ends certainly unattainable by the means adopted. Enzootic diseases are less frequent amongst horses than cattle, and are most prevalent and fatal with sheep and swine.

By some of the many forms of that group or subdivision known by the term of anthrax fever, which includes such diseases as splenic apoplexy, quarter ill, braxy, &c., many thousands of the best animals in certain classes of both cattle and sheep are yearly destroyed. In certain circumstances the flesh of animals dying from many of these affections is employed with impunity for human food. There are, however, peculiar conditions when the consumption of this flesh is certain to be attended with bad, if not dangerous results, anthrax being in these circumstances a virulent poison. The immediate cause
of anthrax, in all its forms, is a diseased or vitiated condition of the circulating blood—a change in its physical, chemical, and physiological characters by which it is rendered unfit for its normal functions of nutrition—remaining, however, not merely inert, but becoming actively poisonous, in certain cases leaving its natural conduits, and then becoming rapidly subject to ordinary chemical laws. The causes operating in the production of this loss of equilibrium amongst the constituent elements of the blood, and the relationships which in health exist between the blood, the blood-vessels, and surrounding tissues, are somewhat difficult to trace and explain; yet upon their being to a certain extent understood, or at least acted upon, depends the success of those methods of dieting conservative of health, and of those principles of treatment calculated to arrest or circumscribe disease. Speaking generally, the causes which tend to the production of this entire group of blood diseases, from which such numbers of our animals of all ages are lost, may be said to be associated—

1st. With the character and conditions of soil and its manurial richness, by which is materially modified
both root crops and grass. They are more prevalent in rich lands when undrained, and on naturally dry soils in damp seasons when the temperature is high.

2d. With a state of plethora or redundancy of rich circulating blood in the animals themselves, more particularly when this advance in condition is preceded by a previous stinting or lowering—when the stock have been removed from a comparatively sparse diet, or one poor in nutritious materials, to decided abundance or of a highly nutritive nature.

3d. When this free supply of food is so provided that the animals have no necessity to take even moderate exercise in order to procure this, or when, from want of space, this is impossible. This condition is extremely prejudicial to pregnant ewes, particularly as relates to the progeny, and in them is a fertile source of that fatal congestive fever occasionally met with.

4th. Altitude and exposure, by which sudden checks are experienced from the rapid alternations of the weather. This is most noticeable in our most exposed sheep walks, where, it is well known, a sudden change of weather, as an unexpected snow-
blast, determines the production of many cases of braxy.

It is quite certain that much more might be understood both as to the nature, origin, and mode of development of the entire class of enzootic diseases were greater inducements held out to cultivate their investigation in those classes of our stock amongst which they are most prevalent; while, from what is known, there is little doubt that were the knowledge possessed acted upon, the mortality in every class of stock from these very diseases might be much curtailed. Errors in dieting, and an absence of that just relationship which ought to subsist between external local influences and the character of the stock reared, are the main causes of the occasional undue prevalence of these diseases.

Stockowners, in their anxiety to attain a given end, are too apt to forget that the laws in accordance with which healthy animal existence is maintained cannot be infringed without the penalty for this infringement being exacted in the form of increased sickness and a higher death-rate—that neither young animals, nor those which have reached maturity, especially if previously below par, can
without risk be put at once upon a diet unrestricted in amount and increased as to its nutritive qualities, and this more particularly under certain influences of climate and locality. Sheep, which are probably more manipulated, so to speak, than others of our domestic animals, when subjected to these conditions will mainly suffer from affections of the digestive organs, or some of those fatal anthracoid or blood diseases already spoken of. In breeding animals—ewes—the results of these same errors are not confined to themselves, or exhibited chiefly at the critical period of their lives, the period of parturition: they are carried further, and from the delicacy of the organism, and other collateral circumstances, have a more extensive fulfilment in the case of their lambs. When errors in dieting are associated with want of adaptability of the stock to the lands and situation in which they are placed, the results are disappointing in the extreme. In these circumstances it is impossible to bring high-bred and high-class stock to perfection, or to render their breeding or rearing a remunerative undertaking.

Another point deserving of notice, as showing the difficulty there exists of successfully dealing with
adverse local influences is, that it not unfrequently happens that on those lands which, from the nature of their soil, their altitude, or climate, are ill adapted to the class of stock there located, that the very means which are employed to combat these obvious defects seem also to operate in influencing the appearance, or at least in increasing the severity when they do appear, of certain diseased conditions, particularly in the young. There is no doubt but that these same diseases are met with where external circumstances are most favourable, and nicely adapted to the animals placed under their influence; but in such cases they are not so extensively distributed, nor yet of so malignant a character.

Again, if we add to these conditions of adverse local influences and faulty dietetic arrangements, the item of hereditary disease, resulting from mistakes as to breeding—i.e., the employing as stock animals such as suffer from or exhibit any constitutional weakness or predisposition to disease—we thus bring together all the principal necessary conditions for the development of certain of the most widely-spread and fatal enzootics to which our stocks are subject.
Scrofulous and rheumatic diseases, which occasionally occur amongst all our better-class stock, may, in all their extraordinary outbreaks, be traced to a co-operation of these different causes.

There is no doubt but that the principal and predisposing cause of these diseases is the constitutional cachexy or taint; still, it must be remembered this taint is not of an invariable uniformity of virulence, and when slight, and external circumstances are propitious, may escape the notice of the most acute observer, never in the slightest degree interfering with the growth of the animal, or only shewing itself in isolated cases. There is also this fact to be borne in mind, that it is no uncommon circumstance for either of these constitutional diseases to disappear in one generation and reappear with greater virulence in a succeeding, or, it may be, supplanted by an affection somewhat analagous, or merely by a variation of the leading or constitutional disease. Placed, however, under conditions of diet, situation, and climate favourable to their appearance, these cachexies—scrofula and rheumatism—assume the position of most deadly enzootics.

Both these constitutional diseases are characterized
by the facility with which they become developed under the smallest exciting cause. Where the constitutional or hereditary taint exists, they are most surely exhibited in connection with those causes which, as a general rule, are antagonistic to good health in all animals. Amongst young cattle there is no more fertile source of these maladies than a defective sanitary condition of their houses. Dark, ill ventilated, undrained, filthy paddocks are not at all fitted for the rearing of healthy stock. Even when possessed of robust, healthy constitutions, this, in conjunction with improper alimentation—which they too often receive—is sufficient to develop the worst forms of rheumatic and scrofulous disease; while, if they are possessed of any constitutional tendency to disease, it is rather to be wondered at that any escape. The animals being young, all those functions subservient to the growth of the body are in the most vigorous operation, this functional activity merely rendering them more susceptible of disease. The small amount of exercise they are enabled to obtain is injurious, from the compelled inactivity to which the joints are subjected; while it not unfrequently happens that they are
turned, in a great hurry, without preparation, from too warm paddocks and close confinement into the open air and perfect liberty: the transition is too great both as to temperature and exertion.

Amongst sheep stock those causes which seem to operate as exciting agents in the production of these enzootics may be referred generally to atmospheric influence, location, and nutrition.

Atmospheric influence is a term of much ambiguity, and employed too often to veil our ignorance: the laws by which this is regulated are still much obscured or little understood: so, when brought to a stand-still in our investigation of results, we too often fall back on this very convenient term. We know these must have some definite cause or causes from which to originate, and not being able to lay our finger on the better understood, are apt to assign them to those whose nature and operations are more doubtful and difficult to elucidate.

Still, there are certain conditions of the atmosphere—as its temperature, its moisture or dryness, &c.—the action of which we can with tolerable certainty predict. Even when young, lambs can with impunity endure a comparatively low tempera-
ture if unaccompanied with moisture. When, however, a damp lair is added to a dry frost wind, a very active exciting cause of rheumatic inflammation exists. The little animals are inclined to lie, the circulation becomes flagging, and if there exists the slightest constitutional diathesis, the system rapidly succumbs.

A deficiency of shelter and a naturally damp condition of soil will further tend to ensure an earlier and more confirmed form of the malady.

If, in addition to these causes, there is a defective or perverted nutrition, which may have originated with the lambs during intra-uterine life, as well as subsequent to birth, then we have the most favourable condition for the appearance of scrofulous disease.

In connection with enzootic diseases, and interesting as exhibiting the intimate connection subsisting between these, and accompanying peculiar local influences, is the fact that in the progress of modern agriculture it not unfrequently happens that soils which for generations have supported a healthy sheep stock have, in the course of being improved, become undesirably conspicuous for the prevalence of diseases previously there unknown. This is particularly
evidenced by the appearance of certain diseases of the bones and nervous system following the improvement of light moory soils. And while it may be impossible exactly to determine the precise amount of influence which ought to be accorded to each step in the process of improvement—whether the cause must be assigned to what has been added to the soil, what has been merely brought into action which previously was in existence, although in a dormant state, or to some new agency resulting from the combination of the former, and entirely dissimilar in its nature to either—it is yet satisfactory to know that these diseases may be curtailed or altogether prevented by regulating our management in accordance with the knowledge that these only appear when particular soils are subjected to certain conditions, and that they only or chiefly occur in particular classes at particular periods of their lives, when pastured or fed on material grown on these lands. Again, the very period during which these diseases continue, at least in marked ascendancy, most unmistakeably points them out as not purely adventitious, but as being in much subject to control. For a time they are of frequent occurrence and fatal
in their results, gradually, however, becoming mitigated, or lost sight of altogether as these soils revert to their former condition—as the period becomes more distant from the date of improvement.
THE MANAGEMENT OF DISEASE.

We will not here attempt a definition of disease or its opposite, health, taking it for granted that the terms are sufficiently well understood to enable all to comprehend anything which may be said relative to those general principles by which it is advisable the conduct of those who have the charge of animals should be regulated in their endeavours to remove the abnormal conditions recognised as disease.

By general consent, the maintenance of health is regarded as the attainment of perfection in all that relates to the management of our domestic animals. Many, however, under whose care these animals are placed, not satisfied when this desired result is attained through a judicious system of dietary, correct location, and sanitary arrangements, with other de-
tails of good management, fancy that this condition of health may be improved and rendered permanent by the repeated exhibition of certain medicinal agents. Horses are more subject to this meddlesome medical interference than other animals, probably from their associations with us being closer and more extensive; while from the extent of this interference, and the obstinacy with which it is carried out, more evils result than is generally imagined. The pertinacity which is shown in the regular periodic physicking of horses, notwithstanding all the arguments which may be adduced to prove its fallacy, and the implicit faith which so many place in anything in the form of medicine to achieve the most extraordinary results, would in itself be simply amusing were it not for the damaging consequences which result to the animals thus experimented upon.

*Tartar emetic, nitrate of potass*, and *sulphuret of antimony* may be very useful articles in certain conditions of disease, but are certainly uncalled for either in horses or other animals in the enjoyment of health—in which state, when given, they are more likely, from their depressing action, to be productive of evil than of good results. The continuous em-
ployment of agents calculated to produce an effect on the constitution ought not to be entered upon with any animal without consideration, and an amount of knowledge relative to those agents, and their effect upon the animal system, not to be looked for in any save those specially trained for that end, and who are daily practically applying this knowledge.

To infer from this, however, that none but a professional man ought in any case to prescribe for the ailments of our domestic animals would be both foolish and dangerous. Many of these, particularly in horses, and connected with the digestive organs, are sudden in their appearance, and in the early stages generally amenable to treatment of a comparatively simple nature. There are few stockowners who are not practically aware of the value of such agents as linseed oil, sweet spirits of nitre, laudanum, ammonia, or spirits of turpentine in such cases as colic and indigestion in both horses and cattle.

Blood-letting, that potent agent for good or evil, is in our day scarcely looked upon with the veneration formerly bestowed upon it, or employed as a panacea for all the ills to which animals are heir.
There are, no doubt, still to be found, even among the better informed, individuals who in every fatal case solace themselves with the reflection, that the animal at all events was bled. To those who are not skilled enough to be guided by more recondite rules in the performance of this operation, a very safe one may be obtained by remembering that the practice is, as a rule, inadmissible when the disease is gradual of development, passing quietly though steadily from slight indisposition to actual disease, and that its performance is likely to be comparatively harmless, or productive of benefit, when the affection is sudden in its onset, rushing rapidly through preliminary stages to the height of its development. Partaking of the former character will be found those diseases of an epizootic type, and marked by febrile symptoms of a low and exhaustive nature. Examples of the latter are to be found in the acute inflammatory and congestive actions of the organs of digestion and respiration.

Apart from medical treatment, the first step in the management of disease is naturally the separation of the sick from the healthy. This is the more
imperative when the disease is of an infectious nature, capable of propagation by the emanations from the actually diseased. As tending to favour recovery, as well as reduce the risks of contamination to the minimum, a good loose-box is preferable to a stall or open yard: it ought to be placed as much as possible separate from the stabling of other animals, to be well lighted, roomy, dry, and well ventilated. Attendants who minister to sick animals ought to be careful how they immediately afterwards move amongst the healthy; while all utensils and clothing, &c., used for the sick, ought to be strictly reserved for them until properly cleaned or disinfected. In cases of prolonged illness, much benefit is derived from turning the litter of the sick-box twice daily, thoroughly sweeping the floor, and, before relittering, sprinkling it with such disinfecting materials as chloride of lime, Condy’s fluid, dilute carbolic, or sulphurous acids. Where clothing is employed it ought to be removed morning and evening, be well shaken and hung in the open air, or exposed to the fumes of burning sulphur; and before being replaced gently wipe the animal over with a towel or damp wisp. Where water is
allowed *ad libitum* it ought to be changed once or twice daily.

While it does not appear that the custom of strictly confining sick animals to tepid water, or even well-boiled gruel, is productive of that amount of benefit some seem to imagine, plain cold water is in many cases not only more grateful, but more beneficial, than aught else we can give.

The food which is given ought to be light—in its nature easy of digestion, small in quantity, offered more frequently than in health, and in whatever form the caprice of the appetite seems to dictate, endeavouring if possible to keep the bowels in a natural and moist condition.

Other instructions, dietetic, &c., belong more properly to special professional advice.

When it is determined to call a veterinary surgeon, let it be done as early as possible, rather than delay until the case is evidently hopeless; and when called, by all means give him a full and particular history of the case, with an unreserved statement of what has already been done for it. Whatever he prescribes or orders medicinally, dietetically, or otherwise ought to be scrupulously attended to, ever remembering
that it is upon a strict attention to these matters that any hope he may entertain of a favourable issue is based.
INDEX.

Abdomen, rupture of the walls of the, in ewes, 34—nature, and manner in which produced, 35.
Abdominal consumption, 4.
Abortion in ewes, 26—treatment of, 29.
Advantages, supposed, of boggy or marshy lands, 6.
After-birth, removal of the, 37.
Animals, breeding of, 20.
Animal health, influence of drainage on, 5.
Animals, our power over, 2, 68—limited, 69.
Anthrax, 70—causes of, 71—influence of soil in producing, 7—influences determining the appearance of, in animals themselves, 72—influences of food in producing, 72—influences of climate and exposure in producing, 72.
Atmospheric conditions, influence of, on sheep, 78.

Black quarter, 70.

Blood diseases, 7, 59, 70—causes of, 70—prevention of, 73.

Blood-letting in disease, 84—rules for employment of, 85.
Braxy, 70.
Breaking down in ewes, 34—manner in which produced, 35—prevention of, 35.
Breeding of animals, 20.
Breeding animals, choice of, 21.
Breeding ewes, treatment of, 23, 29, 32—forms in which irregularities of dieting operate hurtfully on, 25.
Bruising of grains, 18.


Cattle plagues, 60—difficulty of legislating for, 61—means by which propagated, 62—necessity of adopting preventive measures regarding the spread of, 63.
Cattle inspection at ports necessarily defective, 65.
Cattle epizootics, the prevention of, possible, 66—enforcement of measures for prevention of, belongs to the legislature, 66.
Chopping of fodder, 18.
Cleanliness, individual, its necessity, 11—diseases from neglect of, 11.
Conception, conditions favourable to, 22.
Congestive fever in lambs, 36.
Cooking of grains, 19.
Consumption, abdominal, 4.
Constitutional diseases, peculiarity of, 76.
Cross-bred animals to be preferred to others in certain situations, 3.
Disease, management of, 82—blood-letting in, 84—prevention of, in breeding ewes, 29.
Diseases of parturition, 38—of calves, prevention of, 52—dietetic, prevalence of, on our best lands, 7—of geological formation difficult of prevention, 3.
Dietetic irregularities in pregnant ewes, effects of, on the offspring, 36—diseases, the principal class of, on our best lands, 7—errors, a fruitful source of enzootic diseases, 73.
Dieting, sudden alternations of, to be avoided, 57.
Difficulty of arriving at the exact cause of certain enzootic diseases, 71.
Dyspepsia in calves, 49.
Disappointment in stock-breeding from neglect of first principles, 2.
Dry soils best fitted for rearing horses, 6.
Drainage, influence of, on animal health, 5.
Enzootic disease, definition of, 60.
Enzootic diseases, nature, &c., of, 67—their relation to local influences, 69—modified by varieties of animals, 70—most prevalent forms of, 70—reasons for the frequency of their appearance, 73—difficulty of dealing with, in certain situations, 74.
Epizootic and enzootic diseases, 59—importance of, 60.
Epizootic disease, definition of, 59.
Exercise, necessity of, in pregnant animals, 32.
Exposure, influence of, in producing anthrax, 73.
Ewes, inflammation (so-called) in, 38—symptoms and treatment of, 42—measures to be adopted on appearance of, 43—prevention of, 44.
Ewes, pregnant, breaking down in, 34.
Feeding of animals, its influence in producing disease, 15.
Feeding of animals, 13—forced, 13.
Feet of horses, effects of moisture on the, 6.
Feeding calves, a new method of, 53.
Fever, parturient, 38—nature, symptoms, and treatment of, 39.
Floodling, 38—treatment of, 38.
Fœtal development, arrested, 25.
Food supply, influence of, in producing anthrax, 72—in relation to improvements in breeds, 2, 7.
Food, quality of, 17—form in which given, 17.
Geological formation, influence of, on animals, 3—permanence of the influence of the, 4—the best adapted for rearing horses, 6.
Grains, bruising of, 18—cooking of, 19.
Hæmorrhages, uterine and vaginal, 38.
Health and disease, 82.
Health, medicines not needed in, 83—in animals, the maintenance of, the result of many favouring circumstances, 1, 8.
Hereditary influence, the extent of, 21.
Horses best reared on dry lands, 6—diseases of, from being reared on wet lands, 6—effects of bad provender on, 17.
Inflammation (so-called) in ewes, 38—symptoms and treatment of, 42—the power of propagation of, 39—measures to be adopted on the appearance of, 43—measures calculated to prevent the occurrence of, 44.
Inspection of foreign cattle necessarily defective, 65.
Instructions, professional, necessity of attending to, in disease, 87.
Influence of soils on animals, 3—of geological formation on animals, 3—of drainage on animals, 5.
Improved breeds of animals, their relation to food supplies, 2, 8.
Irregularity of dieting in young sheep, the effects of, delayed for some time, 57.
Lambs, effects of irregularity of dieting on, 57, 74— injury done to from faulty dieting of the ewes, 36.
Legislative enactments alone sufficient to grant protection against the spread of cattle plagues, 66—to prevent the spread of cattle diseases, necessity for, 62.
Lands, wet, their supposed advantages, 6.
Land, reclamation of, the influence of, in producing disease, 79.
Loin fallen in cows, 45.
Meat supply, our, demand for the increase of, 13.
Medicines, errors regarding the use of, 82—the continuous giving of, requires special knowledge, 83.
Manurial richness of lands in relation to disease, 7.
Milk fever in cows, 38—forms of, 39—symptoms and treatment of, 39—prevention of, 42.
Milk the natural food of the young, 47—materials used as substitutes for, in rearing calves, 54.
Moisture, excess of, evil results of, 5.
 INDEX.

Pastures, change of, needful for lambs, 56.
Paralysis in cows, 45.
Parturition, management of, 37—diseases of, 38.
Parturient fever, 38—forms of, 39—symptoms and treatment of, 39—prevention of, 42—in ewes, symptoms and treatment of, 42—prevention of, 44.
Pining, 4.
Pregnant ewes, mode of management, 32.
Plugging in flooding, 38.
Preventive measures regarding disease at the ports of debarkation, the possibility of enforcing, 66.
Railway communication a means of propagating disease, 63.
Rearing of young stock, 48.
Rheumatic diseases, 76.
Rheumatism and scrofula, causes of, in cattle, 76—in sheep, 78.
Rot-hunger (so-called), 29.
Sanitary conditions of stabling, influence of, on calves, 77.
Shelter, necessity of, for certain classes of stock, 8—nature and form of, 9.
Serosupulose diseases, 76.
Sick animals, the removal of, from amongst the healthy, 85—movement of attendants amongst, 86—allowances of water and food for, 86.
Soil, influence of, 8—conditions of the, favourable to anthrax, 71.
Soils, manurial richness of, in relation to disease, 7.
Stabling, position of, 10—ventilation of, 10—cleanliness, &c., of, 11.
Stock animals, the feeding of, 15—selecting of, 21.
Store animals, damage done to, from irregular feeding, 16.
Stomach, disorders of the, in calves, 52.
Veterinary surgeon, sending for the, 87.
Young stock, the rearing of, 47.
Young animals, the susceptibility of, to adverse influences, 47—the damage done to, from faulty dieting, subsequent to weaning, 54—the evil effects of imperfect nutrition on, 55.
TO AGRICULTURISTS.

LIST OF

WORKERS', GRAIN, AND OTHER
FARM BOOKS,
BOOKS FOR THE COUNTRY,
AND GENERAL STATIONERY,

PREPARED AND SOLD BY

J. & J. H. RUTHERFURD,
STATIONERY WAREHOUSE,
No. 17, SQUARE, KELSO.
This Book may be kept solely as a Sales Book by the Farmer, or a Stack-yard and Stock Book by the Steward, or in it Stack-yard, Stock, and Sales Book may be combined.

"That Useful Proceeds Book."—Alderman Mechi.

Prices—Stoutly Half-bound in Calf, cloth sides, 4s 6d and 7s.

The object of this book is to help farmers to keep an accurate account of the grain grown, thrashed, and sold; the whole being so arranged as to shew the size of each field, the number of stacks obtained from it, the time when thrashed, the amount of good and of light grain produced, the date and manner of disposal, the price and net receipts: also the yield per acre of each field.

At the end are attached some supplementary leaves to shew the consumption of grain on the farm for seeding and other purposes; the whole simplified by special rulings and printed headings, and accompanying each book is a wrought-out example or Key.

"According to this arrangement any farmer may keep an accurate account, with almost no trouble, of the whole produce of grain from his farm, the money he obtains for it, and the way in which the whole crop is disposed of; and such accounts kept from year to year would be of very great value."—Kelso Chronicle, Nov. 11, 1864.

"Every farmer ought to keep an account with each field that he cultivates [which this book does], almost with every beast that he rears. As it is, a man may farm several hundred acres without being able to tell whether he loses or gains by any particular crop. As long as he pays his way on the whole he is satisfied, and he never inquires where his profits come from."—The Times.

"The Proceeds Book.—Our correspondent cannot do better than procure a copy of the 'Proceeds Book' published by Messrs J. & J. H. Rutherford of Kelso. It is, unquestionably, the most useful work of the kind that we have ever before seen, and consequently must prove a great boon to every farmer who desires to know how his accounts stand at the close of each season."—The London Farmer's Journal and Agricultural Magazine, Aug., 1867.

"Admirably adapted to its purpose."—S. Villiers Surtees, of Spilsmore House, Stafford.
Lately Published,

THE

BARN AND GRANARY STOCK BOOK.

For the Steward or Manager's keeping—shewing what has become of the Corn, the Stock on hand, &c.—a record and voucher, in fact. Prices, stoutly half-bound in calf, 2s 10d and 5s.

Note by the Publishers.

This Book has been published for two years, and is found to supply a want in Farm Books long felt. It contains no reference to prices—such being expressly avoided; but it necessitates the accounting for every hushel of corn thrashed out for sale, or hought in or exchanged for seed, &c., &c.

The London Agricultural Magazine, speaking of "The Proceeds" and "Stock" Books (Sept., 1865), describes them as "Gems in themselves—without question, standard works explanatory of the Book-keeping of the Agricultural world."

WORKERS' TIME AND WAGE BOOKS.

Drawn up for Weekly Accounts—the most useful for small farms
—Monthly Accounts—the most useful for large farms
—1s each and upwards. 1s 6d each and upwards.

Either style is done up in a variety of thicknesses and bindings.

"Can you recommend me to a good system of Farm Book-keeping?"

"We would recommend you to procure 'Workers' Day Book,' and 'Proceeds Book,' prepared and published by J. & J. H. Rutherford, Kelso."—Answer to a Correspondent in the North British Agriculturist.

"Your books ['Proceeds' and 'Workers' Weekly'] are all I could desire."—W. Scott, jun., Howford, Ettrick, Sept. 1868.

Just Published,

FARM WORKERS' ACCOUNT CONTRA

(Half-Yearly System). 1s to 6s 6d.

This Book is drawn up so as to show on two pages (Dr. and Cr.) the Workers' dues, payments, and nett balance at any date, at a minute's notice and in proper form, simply, and without the necessity of referring to note books or other documents.
REAPERS' TIME AND WAGE TABLE,
On a Sheet for Harvest Labour. Price, post free, 8d.

"A very useful document for such farmers as cut their crops by time."—Scottish Farmer.

WORKERS' DAY BOOK, PROCEEDS BOOK, AND REAPERS' TIME AND WAGE TABLE.

"To keep farm accounts properly is not often an easy matter; there are so many different things to be taken into account, and one item here has so often to be set-off against another item there, that to make out any really good system has been felt as a want. There are, no doubt, some very excellent farm account books, but the objection to these has been the price. Now, in these books issued by the Messrs. Rutherford, the charge has been so reduced as to bring it within reach of all. The 'Proceeds Book' may be had for 4s. 6d., or 7s for a large size. The 'Workers' Day Book' is only 1s., and the 'Time and Wage Table,' a sheet for which the charge is 8d. post free. But though thus cheap, we may add that the manner of keeping the accounts is both simple and clear. In each of the books a specimen is given of the plan to be adopted; and certainly nothing apparently could be devised more simple. They may be safely recommended as affording a really simple and effectual way of keeping farm accounts."—The London Field.

"These Books and forms, so far as we understand farm labour, seem to us to give certain and easy methods of keeping correct accounts, while they do not omit anything requisite to a complete index of the returns of every field on a farm."—The Border Advertiser, Nov. 18, 1864.

NEW SERIES OF
LIVE STOCK BOOKS.

Just prepared, in oblong 4to. size, price 4s.,
SHEEP (Northumbrian System), with Key.

Long folio size,
SHEEP (System used on the Royal Farms), with Key and Printed Headings.

Also just ready, long folio size,
CATTLE (do), with Key and Printed Headings, and Supplementary Pages for Swine Account.
FARM AND ESTATE BOOKS. 5

Agricultural Ledgers, Day Books, Cash Books, and other Plain Paper Books, All sizes and varieties of ruling and binding.

SPECIAL DO. DO. Designed and Made up.

Miscellaneous Works and Compilations on Farm Book Keeping

Issued by Stephens (author of "The Book of the Farm"), a set of Seven Small Folio Volumes, price 22s. Those recommended by the Royal Agricultural Society of England, issued by Halifax & Co., London, a set of Five Volumes, price to non-subscribers £2, 10s. Cowell's Improved Farmer's Account Book, One Folio Volume, price 8s. Jennett's Farm Account Book, 12s 6d. &c., &c.

After a very long experience in the compilation of books for farmers, we question if a complete set of farm books suitable for general use can be compiled. Those published by us have no pretensions to being a complete set: they are only useful auxiliaries, capable of being used with any system. In all this district there are perhaps no two farmers who keep their books alike, or who would find it convenient to do so.

All the Books mentioned in our "Miscellaneous" List seem to us to be much too intricate for general use, and to want adaptability. If some practical farmer—one who has not been brought up in a bank, a lawyer's office, or with an accountant—after such an upbringing, he is sure to fall into the error of intricacy and over-minuteness—would compile a treatise on the subject by which each man would be enabled to work out a tangible set of books—not a mere system of memoranda, as book-keeping too often is with farmers, but something simple, yet scientific, and which each could modify to suit his own requirements—it would be a boon to the farming community.—J. & J. H. R.

Stephens' Practical Treatise on Farm Book-keeping, 2s 6d. Supplement to Do., Labour Account—The Estate, 2s 6d. Inglis' Practical Treatise on Farm Book-keeping, reduced to 1s.

FORESTERS' TIME BOOKS,
Such as are used on the Mounteviot, Mertoun, and Roxburghe Estates.

Estate Return Sheets of Game, Gardens, Forests, &c.

BLANK FORMS for ESTATE BALANCE SHEETS.

A DAIRY PRODUCE BOOK
FOR GENTLEMEN'S ESTABLISHMENTS.
MILLERS' GRINDING BOOKS,
Do. PROFIT AND LOSS ACCOUNT BOOKS,
Ruled and Headed throughout.

TO LANDED PROPRIETORS, FACTORS, AGENTS, &c.

Game Books, Cellar Books, Poultry Books, &c.,
in great variety.

Estate Time and Pay Bills, &c., Drawn up, Ruled, and Printed.

All the Standard Publications on
AGRICULTURE, GRAZING, &c.,
INCLUDING

M'Donald on Estate Management, one very thick vol.
8vo., 12s. Tenth edition, just issued.

Brown's Book of Do, 1 vol., large 8vo., 21s. just issued.

M'Donald's Hints on Farming, one very thick vol., 8vo.,
12s. 6d. Tenth edition, just issued.

in Monthly Parts at 5s. (See page 27.)

Wilson's (of Edington Mains) British Farming, 12s.

M'Combie (of Tillyfour) on Cattle and Cattle Breeders,
2s 6d, cheap edition, just published.

Low on Landed Property and the Economy of Estates,
reduced to 9s 6d.

Louden's Cyclopedia of Agriculture, reduced from £3 to
£1, 10s 6d.

Our Farm Crops, 2 vols., 15s. 6d.

Just published, price 5s (with Coloured Map of the British
Isles, exhibiting the distribution of the prevailing kinds of
Sheep), BRITISH SHEEP FARMING, by William Brown, Factor
and Estate Agent.

Finlay Dun on Veterinary Medicines, 12s.

Youatt on the Horse, last edition, 12s. 6d.

Gamgee's Our Domestic Animals, 4 vols. in 2, 20s.

Dick's Manual of Veterinary Science, 5s.

Richardson's Farm Handbooks, 1s. each.

Land Measuring, Draining, and Cattle Weighing Tables.

Books on the DAIRY, AGRICULTURAL CHEMISTRY, &c., &c.
The Henwife, by Mrs. Ferguson Blair, many coloured
illustrations, 7s. 6d.

See page 26.
BOOKS FOR THE COUNTRY.

All the Standard Works on Gardening and Botany, by Balfour, Mrs. Louden, Glenny, and others.

The Handy Book of Bees, by A. Pettigrew, 4s 6d, just published.

Louden’s Encyclopedias of Gardening and Plants, new editions, reduced from £3 to 31s 6d each. Johnston’s Gardener’s Dictionary, new edition, 5s 6d.

Howitt’s Rural Life of England, complete in one vol., 12s. 6d.

Noel Humphrey’s Butterfly Vivarium, 6s. 6d.

Uo. River Gardens, 6s.

Lowe’s British Ferns, coloured illustrations, 2 vols., large 8vo. " Beautiful Leaved Plants, do. 1 " " " Morris’ British Birds, do. 6 " " " Nests and Eggs of Do. do. 3 " " " Nature-Printed British Sea Weeds, do. 4 " " " Wood’s Common Objects of the Country; of the Microscope; and of the Sea-shore, coloured illustrations—new editions 3s 6d each.

Our Woodlands, Heaths, and Hedges; British Ferns; British Birds and Nests; British Butterflies, coloured illustrations—3s 6d each.

Wood’s Homes without Hands, 21s.

" Bible Animals, just published, 21s.

Kirby and Spence’s Entomology, cheap edition, 5s.


Gosse’s Romance of Natural History, 2 vols. 7s 6d each.

Miss Pratt’s Wild Flowers, How to Know and Where to Find them, new edition, coloured illustrations, 2 vols., 16s.

Thomson’s Wild Flowers, and Where to Find Them, do., 3s 6d

Stars of the Earth, or Wild Flowers of the Months, by Leigh Page, illustrated, 4s 6d.

SPORTING LITERATURE.

All the standard books on ANGLING, including Stoddart, 4s 6d; Stewart, 3s 6d; Moffat, 6s; Simeon, 5s 6d; and Younger, 2s 6d (see advertisement, page 28).

Lately published, Pennel’s Fishing Gossip, 6s.; Stoddart’s Angling Rambles and Angling Songs, 9s.

“A Book on Angling” by Francis Francis (of the Field), 15s.

The Sea Fisherman, by J. C. Willock (just published), 12s 6d.

Stewart’s Treatise on the Law of Scotland relating to the Rights of Fishing (lately published), 15s.

The Newcastle Fisher’s Garland, Words and Music, and Woodcuts, fac-simile reprint (1864), 21s.

Peard’s Practical Water Farming, 6s.

Conway’s Forays among the Salmon and Deer, 6s.

Stonehenge’s British Rural Sports, eighth edition, 15s.
Stonehenge on the Dog, 15s.; Do. on the Greyhound, 21s.
Our Domesticated Dogs, 2s. 6d.
The Horse and his Rider, by Head, 5s.
Handy Horse Book, 5s.
Bit and Bridle (just published), 5s.
The Dead Shot, 5s.; The Hunting Field, 5s.; Idle's Hints on Shooting and Fishing, reduced to 2s. 6d.; The Cricket Field, reduced to 2s. 6d.; etc.

DOMESTIC AND GENERAL UTILITY, REFERENCE, &c.
Cookery Books—Miss Acton's (new edition), reduced to 6s.;
Meg Dod's, 5s.; Francatelli's, 5s.; Cre-Fydd's, 7s. 6d.; Dainty Dishes, 7s. 6d.; The British, 3s. 6d.; "by a French Lady," 5s.; Mrs. Williamson's, 4s; English and Australian, 4s.; Beeton's Dictionary, 3s. 6d.; Everybody's Pudding Book, 2s. 6d.; The Breakfast Book, 2s. 6d.; Reid's "Rational," 1s.; Chambers's, 1s.; Soyer's, 7s. and 1s.; "What to do with the Cold Mutton," 2s. 6d.; "Dining for the Million," 2s. 6d.; "How to Cook" series, 6d. each; The Handbook of Dining, 5s. 6d.; Mother's Book of Family Management, 2s.; "How I Managed my House on £200 a year," 1s.; etc.

Macaulay's Medical Dictionary, new and enlarged edition, 10s 6d.;
Bull's Hints to Mothers, 5s; and other popular Medical Works.
Chambers' Cyclopaedias, Encyclopaedia, and Book of Days.
Maunders' Treasuries, 7 vols at 10s. each.
Gates' Dictionary of General Biography, 21s.
The Book of Dates, 10s 6d.; Statistical Account of Scotland, 15 vols. 8vo.; Dawson's Abridged Do., 1 vol. 8vo., 12s 6d.

MAPS AND ATLASES.
Philips' Parlour Atlas, 21s.
A large selection of Philips' Smaller Atlases.
Keith Johnston's School Atlases, including Modern Geography, Physical Geography, the Classical and the Astronomical, 12s. 6d. each.
A large selection of School Atlases, by different publishers, 6d to 10s 6d.
Johnston's Wall Maps, 5s each; Nelson's, 13s 6d each; Chambers's Parlour Maps, 5s each.
Black's Large Map of Scotland, in all the styles.
Do. Do. of England.
Johnston's County Maps of Berwick, Selkirk, Roxburgh, and Dumfries, in Cases for the Pocket, or on Rollers, 7s 6d, 15s, and 30s each.
Black's and Blackwood's small Pocket County Map, 1s each.
Pocket County Maps of Northumberland, Cumberland, and Durham, 2s 6d each.
Just Published,

RUTHERFURD’S

MAP OF THE SOUTHERN COUNTIES

(Roxburgh, Berwick, Selkirk, and part of Northumberland),

Carefully compiled by J. Bartholomew, Edinburgh, F.R.G.S., from the Ordnance Survey Plans, on the scale of one-third of an inch to the mile. For beauty of engraving and geographical accuracy, this Map surpasses any County Map of the District ever yet published—it forms an excellent Hunting Map, Price, Mounted on Cloth, done up with a sketch map of the District, &c., in a handy case for the Pocket, 2s. 6d., or elegantly Mounted and Varnished, to hang up, 3s.

"The Map is produced in a style of remarkable excellence; it seems thoroughly accurate and trustworthy, handy in size, minute and complete in its information, easy of reference, and beautifully produced."—Kelso Chronicle.

"As far as regards the counties of Roxburgh, Selkirk, and Berwick, it is the most useful ever published. Not only can you see the county boundaries at a glance, but you can also accurately delineate the parishes in each, trace to the eighth part of a mile, the line of every railway, and run your finger with certainty along any public road you want to explore—let it be the Statute Labour, Turnpike, Parochial, or Hill. After a close examination of the part representing this immediate locality, we have been unable to detect an error in it. It recommends itself to every Borderer."—Border Advertiser.

"It has been executed with Mr. Bartholomew’s usual accuracy and beauty of engraving."—Edinburgh Daily Review.

"A most excellent Map."—Scotsman.

Agents, by Special Appointment,

FOR THE SALE OF

ORDNANCE SURVEY MAPS & PLANS.

Parishes, Estates, and Farms Extracted, Arranged, and Mounted in any style.
LIST OF PRINCIPAL PERIODICALS
REGULARLY SUPPLIED BY
J. & J. H. RUTHERFURD, 17, SQUARE, KELSO.

MISCELLANEOUS (MONTHLY).

All the Year Round (Dickens) 9d and 11d
The Mystery of Edwin Drood, by Dickens, 1s
Aunt Judy, 6d
Golden Hours, 6d
Once a Week, 1s to 1s 6d
Chambers’ Journal, 7d, 8½d, & 11d
The Quiver, 6d
Family Herald, 6d
Christian Treasury, 6d
Family Treasury
Good Words
Do. for the Young, 6d
Christian Work, 6d
Leisure Hour
Sunday at Home, 6d
People’s Magazine, 6d
Sunday Magazine, 7d
Spurgeon’s Sermons, 6d
Scots Worthies, 6d
The Queen
Household Words, re-issue, 1s
Best of Everything, 2½d
The Animal World, 2½d
Waverley Novels (Centenary Edition), 3s 6d.

MAGAZINES (MONTHLY).

The Cornhill, 1s
Macmillan’s, 1s
Temple Bar, 1s
Tinsley’s, 1s.
St. Paul’s, 1s.
London Society, 1s
Blackwood’s, 2s 6d
Fraser’s, 2s 6d
Gentlemen’s, 1s
Beigravia, 1s

Cassell’s Popular Educator
Household Guide, 7d
Book of Birds, 7d
Floral World, 6d
Florist and Pomologist, 1s
The Gardener, 6d
Journal of Botany, 1s 3d

Artizan and Cottager, 1d
British Herald
British Messenger
British Workman
Band of Hope
Child’s Companion, &c., 1d and 1d
Chatterbox, 3d
Penny Post, 1d
Presbyterian, 2d
Bulwark, 2d
Missionary Record (Established Church), 1½d
Do. (Free Church), 1d
Juvenile Records (Established and Free), ¾d each
Scottish Evangelist, 1½d
British Evangelist, 1½d

Dublin University, 2s 6d
Ladies’ Fashions, 1s and 1s 6d
Englishwoman’s Domestic, 1s
Young Ladies’ Journal, 9d
Young Englishwoman, 6d
Cassell’s, 6d
Boy’s Own, 6d
Agricultural Journal, 1s
Bailey’s Sporting Magazine, 1s 6d
Edinburgh Medical Journal, 2s

The Musical Monthly, as published.

REVIEWS (QUARTERLY).
The Edinburgh, 6s
Quarterly
North British, 6s
Journal of Prophecy, 2s 6d
The Field, 2s 6d.

WEEKLY.
The Graphic, 6d; Illustrated London News, 6d.
Punch, 3d; Tomahawk, 2d; Judy, 2d; Nature, 4d, etc., etc.

RAILWAY DIRECTORIES.
Bradshaw, 6d
Murray’s, 3d

North British, 1d
Brydone’s & Cameron’s, 2d each
BOOKBINDING

By J. & J. H. RUTHERFURD, 17, SQUARE, KELSO.

J. & J. H. RUTHERFURD take the opportunity, on the completion of those Volumes of Periodicals for the past year, quoted on the opposite page, to inform their Customers that they shall be happy to receive copies of them, or of any other Periodicals, for Binding, at the following moderate terms:

SUNDAY MAGAZINE
GOOD WORDS
CHRISTIAN TREASURY
FAMILY TREASURY
ONCE A-WEEK
CHAMBERS' ENCYCLOPÆDIA

CHAMBERS'S JOURNAL
ALL THE YEAR ROUND
LEISURE HOUR
SUNDAY AT HOME
HOUSEHOLD WORDS
PEOPLE'S MAGAZINE

And other Periodicals of the size,
Half Calf, neat and stout, 3s 6d per Volume; Do., Plain, 3s; Do., Extra, 4s 6d; Half Sheep, 2s 6d.

Or in the Publishers' Cases from 1s per Vol.—the cases are an extra charge.

BLACKWOOD'S MAGAZINE
CORNHILL MAGAZINE
MACMILLAN'S MAGAZINE
ST. PAUL'S
TINSLEY'S

LONDON SOCIETY
THE REVIEWS
CHEAP RE-ISSUE OF SCOTT'S NOVELS

And others of the size,
Half Calf, neat and stout, 2s 6d; Extra, 3s; Plain, 2s; Half Sheep, 1s 6d.

LONDON ILLUSTRATED NEWS, THE FIELD, etc.,
Stoutly Half-Bound, from 6s to 9s per Vol.

SCOTT'S COMMENTARY
COLLINS' BIBLE

CASSELL'S BIBLE
MATTHEW HENRY

And other volumes of the size sent out by Canvassers,
Full Calf, Exhibition Edges, very stout, 9s 6d to 12s; Do. Extra, with Gilt Edge, 14s to 16s.

In Morocco, Antique Style, Gilt or Coloured Edges, 20s to 25s.

Strong loose Black Leather Covers on Family Bibles, fitted to order, 3s 6d to 5s 6d.

Music Repaired and Bound, 2s 6d to 5s 6d per Vol., according to style and thickness. Portfolios for Do., 1s 3d to 3s 3d.

Miscellaneous Binding, Maps and Plans Mounted, and all work connected with that department executed on their own premises with Despatch and Economy.
J. & J. H. Rutherford guarantee all Goods stamped with, or sent out under cover of, their Trade Mark to be of the Best possible Quality of their kind.

REVISED PRICE LIST

OF

WRITING PAPERS, ENVELOPES, &c.,

SOLD BY

J. & J. H. RUTHERFURD.

This Establishment has been for many years celebrated for GENERAL STATIONERY, especially for Superior Qualities of Writing Papers, and Business and Farmers' Books. Many of the Papers in this List are direct from the Manufacturer, and are offered Retail at the Lowest Prices.

This List has been systematically arranged, so that any particular Paper may be easily selected, or orders repeated, with the certainty of receiving invariably the kind wanted. Every opportunity is taken to improve qualities.

<table>
<thead>
<tr>
<th>ORDINARY 8vo NOTE.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For Special Correspondence.</strong></td>
</tr>
<tr>
<td><strong>1. Treble Thick, Best Cream Laid, Hollingsworth's Rolled, or Joynson's Glazed</strong></td>
</tr>
<tr>
<td><strong>2. Double Thick, Best Crm. Laid, Hollingsworth's Rolled, or Pirie's high Glazed</strong></td>
</tr>
<tr>
<td><strong>3. Thick, Best Cream Laid, Hollingsworth's High Glazed</strong></td>
</tr>
</tbody>
</table>
**LIST OF STATIONERY GOODS.**

**ORDINARY 8vo NOTE**—continued.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Treble Thick, Best Blue Laid, Joynson's</td>
<td>8d</td>
</tr>
</tbody>
</table>

For Ordinary Correspondence.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Thick, Blue Laid, Annandale's, Rolled</td>
<td>4d</td>
</tr>
<tr>
<td>6.</td>
<td>Ex. Thick, Fine Cream Laid, do. do.</td>
<td>4d</td>
</tr>
<tr>
<td>7.</td>
<td>Sup. Cream Laid, do. Glazed</td>
<td>4d</td>
</tr>
<tr>
<td>8.</td>
<td>Fine Cream Laid, Waterlined</td>
<td>4d</td>
</tr>
<tr>
<td>9.</td>
<td>Fine Cream Laid, Annandale's Rolled, a good useful Paper</td>
<td>3d</td>
</tr>
</tbody>
</table>

**The Patent Straw Paper.**

10. This Paper being made of Straw, is more brittle than ordinary Paper, but it is pleasant to write on, and is preferred by many for common purposes. Large or Ordinary Notepaper Sizes, best English make—the Scotch is very inferior | 2s | 0s 8d |

11. Do. Albert Size | 0s | 5d |

*(Nos. 6, 7, & 9)—Special attention is called to these Papers, as the repeated orders and increasing demand for them indicate their general usefulness; they are fit for any ordinary purpose. No. 9 is of the same quality, but thinner.*

---

**CARD SIZES.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>Albert, Treble Thick Cream Laid</td>
<td>2s 3d</td>
</tr>
<tr>
<td>13.</td>
<td>Do., Thick Cream Laid, High Glazed</td>
<td>4s 1d 6d</td>
</tr>
<tr>
<td>14.</td>
<td>Do., Mid-Quality</td>
<td>3s 1d 0d</td>
</tr>
<tr>
<td>15.</td>
<td>Queen's, Thick Cream Laid, High Glazed</td>
<td>3s 1d 2d</td>
</tr>
<tr>
<td>16.</td>
<td>Princess's, High Glazed</td>
<td>3s 0d 11d</td>
</tr>
</tbody>
</table>

**COMMERCIAL (Extra Size) NOTE.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>Thin Cream Laid or Blue Wove</td>
<td>1s 10d</td>
</tr>
<tr>
<td>18.</td>
<td>Thick Cream Laid</td>
<td>4s 2d 9d</td>
</tr>
<tr>
<td>19.</td>
<td>Sup. Thick Cream Laid, Glazed</td>
<td>5s 3d 6d</td>
</tr>
<tr>
<td>20.</td>
<td>Sup Extra Thick Cream Laid—Joynson's, Hollingsworth's, and other best makes</td>
<td>6s 4d 6d</td>
</tr>
<tr>
<td>21.</td>
<td>Azure Laid, Extra Thick, demy size</td>
<td>6s 4d 0d</td>
</tr>
</tbody>
</table>
J. & J. H. RUTHERFURD'S

FOREIGN NOTE.

22. All Colours, Waterlined (Best French make)*; 2 sheets and Envelope, under 1/4 oz. | £ Qr. £ Box
| 24 shts 10 doz. | s. d. | 5d 2 0 | 10 doz. 3 0 |

23. Hand-made Blue Wove, English

* Much of the Foreign Waterlined Paper sold is Belgian make, which is inferior to the French.

A great variety of all sizes of Tinted Waterlined Note Paper, ordinary thickness.

MOURNING NOTE.

Broad. — Middle. — Narrow. — Italian.

Any ordinary width of Border, best Lond. style

24. Extra Thick Cream Laid, Hollingsworth's Rolled, one page | £ Qr. 20 doz. | 6d 4 9

25. Do. Do. two pages | ... 5 6

26. Albert Size, Best Cm. Laid, two pages. | 6d 4 9

27. Queen's Size, Do. Do. | 5d 4 0

Also with Double and Treble Broad Borders, and bordered on four pages, in ordinary, Italian, and mixed styles

28. Foreign Extra Size, (French make*) | £ Box | 8d 3 0

29. Old 4to Size, Cream Laid, all Borders | 10d to 1s 2d

* See note at No. 22

OXFORD STYLE

OF

MOURNING

NOTE PAPER

AND

ENVELOPES.

Ordinary sizes only.

Paper, any Border, 9d. per quire.

Envelopes, do. do., 6d. per packet.

Sole proprietors,
TERRY, STONEMAN, & Co.,
London.

Agents for Kelso and District, J. & J. H. RUTHERFURD.
LIST OF STATIONERY GOODS.

Funeral Letters, Intimations, &c., Printed at Two Hours' Notice, and, when requisite, Addressed and Despatched.

BLANK FUNERAL LETTERS TO FILL UP, 6d. per dozen.

MEMORIAL CARDS.

HAND-MADE LETTER PAPERS.*

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>Extra Thick Crm. and Blue Laid, Glazed</td>
<td>£1 s 4d</td>
</tr>
<tr>
<td>31</td>
<td>Large Extra Thick Blue Laid, Glazed</td>
<td>£1 s 6d</td>
</tr>
</tbody>
</table>

* See notes under No. 38.

HAND-MADE NOTE PAPERS.*

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Cream Laid, Whatman's second quality</td>
<td>£1 s 6d</td>
</tr>
<tr>
<td>33</td>
<td>Sup. Thick Blue and Cream Laid, Glazed</td>
<td>7d 5 s 6d</td>
</tr>
<tr>
<td>34</td>
<td>Extra Thick Do., Rolled, Ansell's</td>
<td>6 0</td>
</tr>
<tr>
<td>35</td>
<td>Large Blue Laid, Whatman's best</td>
<td>7 0</td>
</tr>
<tr>
<td>36</td>
<td>Do. Cream Do. Do. Do.</td>
<td>6 9</td>
</tr>
<tr>
<td>37</td>
<td>Hollingsworth's Imitation of Whatman's best</td>
<td>5 0</td>
</tr>
<tr>
<td>38</td>
<td>Annandale's do. of Whatman's old rough</td>
<td>3 6</td>
</tr>
</tbody>
</table>

Whatman's and other Kent hand-made Papers have continued to go up steadily in price ever since the abolition of the Duty in October 1861.

* The outside quires in each packet of hand-made Papers are generally Broken, Torn, and Short in the Number of Sheets; this is also the case, to some extent, with the best machine-made papers.

LETTER PAPER (4to Size.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Small Post. Fine Cream Laid, Rolled</td>
<td>£1 s 6d</td>
</tr>
<tr>
<td>40</td>
<td>Do., Superfine Thick Cream Laid, Rolled</td>
<td>7d 5 s 4d</td>
</tr>
<tr>
<td>41</td>
<td>Do., Superfine Thick Cream Laid, Glazed</td>
<td>9d 7 s 0</td>
</tr>
<tr>
<td>41½</td>
<td>Do., Hollingsworth's Sup. Thick</td>
<td>8 0</td>
</tr>
<tr>
<td>42</td>
<td>Large Post. Fine Cream Laid, Glazed</td>
<td>9d 7 s 0</td>
</tr>
<tr>
<td>43</td>
<td>Do., Fine Thick Crm. Laid, do.</td>
<td>10d 8 s 0</td>
</tr>
</tbody>
</table>

FOREIGN EXTRA SIZE (4to.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>Waterlined, French make</td>
<td>10d</td>
</tr>
<tr>
<td>44½</td>
<td>Blue Wove, plain, Whatman's</td>
<td>10d</td>
</tr>
</tbody>
</table>
## OFFICIAL PAPERS.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>45.</td>
<td>Pott, Best Scroll, Annandale's</td>
<td>8d</td>
</tr>
<tr>
<td>46.</td>
<td>Foolscap, Common Scroll</td>
<td>6d</td>
</tr>
<tr>
<td>47.</td>
<td>Foolscap, Good Thick Yellow Wove</td>
<td>8d</td>
</tr>
<tr>
<td>48.</td>
<td>Do., Fine Thick, all shades</td>
<td>10d</td>
</tr>
<tr>
<td>49.</td>
<td>Small Post Cream Laid, Mid</td>
<td>1 0</td>
</tr>
<tr>
<td>50.</td>
<td>Large Do. Do., and Yellow Wove</td>
<td>1 4</td>
</tr>
<tr>
<td>51.</td>
<td>Do. Do. Hollingsworth's</td>
<td>1 8</td>
</tr>
<tr>
<td>52.</td>
<td>Demy Size Imitation Hand-made</td>
<td>1 8</td>
</tr>
<tr>
<td>53.</td>
<td>Royal Do. Do. Do.</td>
<td>2 6</td>
</tr>
<tr>
<td>54.</td>
<td>Medium Do. Do. Do.</td>
<td>3 9</td>
</tr>
<tr>
<td>55.</td>
<td>Foolscap, Whatman's best, extra thick</td>
<td>1 8</td>
</tr>
<tr>
<td>56.</td>
<td>Folio Post, Hand-made Blue Laid</td>
<td>2 2</td>
</tr>
<tr>
<td>57.</td>
<td>Large Do. Do. Do. Do.</td>
<td>2 6</td>
</tr>
<tr>
<td>58.</td>
<td>Medium and Royal Sizes, Do.</td>
<td>...</td>
</tr>
</tbody>
</table>

## Ruled Papers.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.</td>
<td>Pott, Faint, for Copies—all kinds</td>
<td>6d</td>
</tr>
<tr>
<td>60.</td>
<td>Do., Faint and Red, for Accounts, all kinds</td>
<td>10d</td>
</tr>
<tr>
<td>61.</td>
<td>F'cap, Blue Laid, for Do., all kinds</td>
<td>1s to 1s 6d</td>
</tr>
<tr>
<td>62.</td>
<td>Foolscap, Best, for Process and Specifications—Whatman’s make</td>
<td>1s 6d to 2s</td>
</tr>
<tr>
<td>63.</td>
<td>Folio Post, Best Blue Laid, for Petitions and Statements, Whatman’s</td>
<td>2s 2d to 2s 6d</td>
</tr>
<tr>
<td>64.</td>
<td>Extra sizes do., do.</td>
<td>2s 9d to 4s 6d</td>
</tr>
</tbody>
</table>

**Sermon and MS. Papers.** Papers Ruled to any Pattern.

## Kitchen and House Papers.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.</td>
<td>Best Gray, Crown Size, 9 lbs.</td>
<td>3 6</td>
</tr>
<tr>
<td>66.</td>
<td>Do., Demy Size, 13 lbs.</td>
<td>4 0</td>
</tr>
<tr>
<td>67.</td>
<td>Best English Small Hand, 20 lbs.</td>
<td>1 8</td>
</tr>
<tr>
<td>68.</td>
<td>Scotch Gray, Finest Double Crown</td>
<td>7 6</td>
</tr>
<tr>
<td>69.</td>
<td>Crown Tea</td>
<td>4d</td>
</tr>
</tbody>
</table>

*As squares, in pkts. of 200, 300, 350, and 500 each.*

*Ordinary Brown Paper, all sizes and qualities, 4d to 3s 6d per Qr.*

*Cartridge Paper, all sizes and qualities; Gummed Preserve Paper; Preserve Labels; Butler and Housekeeper’s Tissue; Baking Gray; and Filtering.*
## List of Stationery Goods

### Kitchen and House Papers—continued

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price per dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>70.</td>
<td>Round Desserts, Thin French, or Thick English</td>
<td>9d to 1s 6d</td>
</tr>
<tr>
<td>71.</td>
<td>Oval do., French or English</td>
<td>1s 3d - 2s 6d</td>
</tr>
<tr>
<td>72.</td>
<td>Plate Papers—Round</td>
<td>5d to 1s 3d</td>
</tr>
<tr>
<td>73.</td>
<td>Do., do., oval</td>
<td>1s 3d to 2s</td>
</tr>
<tr>
<td>74.</td>
<td>Ham Frills, White or Tinted</td>
<td>1s 0d</td>
</tr>
<tr>
<td>75.</td>
<td>Cutlet Do.,</td>
<td>1s 0d</td>
</tr>
<tr>
<td>76.</td>
<td>Soufflé or Fondu Papers, Paris Make</td>
<td>1s 6d</td>
</tr>
<tr>
<td>77.</td>
<td>Silver Bouquet Papers, Real</td>
<td>6d each</td>
</tr>
</tbody>
</table>

Fruit Cups, 6d per dozen.

Ornamental Bill of Fare Cards, see page 18.

### Blotting Papers

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price per quire</th>
</tr>
</thead>
<tbody>
<tr>
<td>73.</td>
<td>Ordinary Red, Lilac, &amp;c.</td>
<td>1s 0d</td>
</tr>
<tr>
<td>74.</td>
<td>Best Ordinary White and Pink</td>
<td>1s 4d</td>
</tr>
<tr>
<td>75.</td>
<td>Do. Thickest Plate, White or Coloured</td>
<td>2s 6d</td>
</tr>
</tbody>
</table>

Small Blades, 4d.; 4 to do., 6d.; Do., Extra Thickness, and Solids, 6d., 1s., and 1s.

Blotting and Writing Cases, all Qualities and Sizes.

### Adhesive Envelopes

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price per pkt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>76.</td>
<td>For Ordinary 8vo. Note, Folded in 4</td>
<td>2½d 1 10</td>
</tr>
<tr>
<td>77.</td>
<td>do. Folded in 3</td>
<td>3d 2 3</td>
</tr>
<tr>
<td>78.</td>
<td>Large 8vo. do. Folded in 3</td>
<td>3½d 2 8</td>
</tr>
<tr>
<td>79.</td>
<td>For Ordinary 8vo. Note, Folded in 4</td>
<td>3¼d 2 9</td>
</tr>
<tr>
<td>80.</td>
<td>do. Folded in 3</td>
<td>4d 3 6</td>
</tr>
<tr>
<td>81.</td>
<td>Large 8vo. do. Folded in 3</td>
<td>5d 4 0</td>
</tr>
</tbody>
</table>

Camden, Safety, and other styles.

**Foreign.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price per pk.</th>
</tr>
</thead>
<tbody>
<tr>
<td>82.</td>
<td>For Large 8vo. Note</td>
<td>2d ...</td>
</tr>
</tbody>
</table>

Oblong and Small Shapes, with Fancy Dies, and impressed with "Marseilles," and "Southampton." (See Note at No. 22.)
IS & J. H. RUTHERFURD'S

ADHESIVE ENVELOPES—continued.

Black Bordered—all sizes.  
<table>
<thead>
<tr>
<th>Paper</th>
<th>Doz.</th>
<th>Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>83. Mid-Cream Laid, Cameo</td>
<td>3d</td>
<td>2 9</td>
</tr>
<tr>
<td>84. Best London make, Camden style, Relief</td>
<td>4d</td>
<td>3 9</td>
</tr>
<tr>
<td>85. Foreign, Waterlined</td>
<td>4d</td>
<td>...</td>
</tr>
</tbody>
</table>

Business Envelopes, all qualities and sizes, 4s 8d per 1000 upwards.

Official and Cloth-lined Envelopes of all sizes.

Tinted, and other Extra Qualities, French Shapes, Albert, Queen's, and Miniature Sizes, &c.

<table>
<thead>
<tr>
<th>Paper</th>
<th>Yard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>86. Brown Web Paper, 5 feet wide, for underlaying Carpets and Rough Papering Walls</td>
<td>2d</td>
</tr>
<tr>
<td>87. Fino Web Cartridge for Hanging Wardrobes, 4½ feet wide</td>
<td>1s</td>
</tr>
</tbody>
</table>

Ordinary Qualities of Browns and Grays, for Grocers, &c.

MISCELLANEOUS STATIONERY.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quills and Quill Pens, 6d to 5s 6d. per quarter; and in Boxes, 6d., 1s., 1s. 6d., 2s., 2s. 6d., and 3s. each.</td>
<td></td>
</tr>
<tr>
<td>Swan Quill Pens, in boxes of 6, 2s. 6d.</td>
<td></td>
</tr>
<tr>
<td>Quill Niels, in Boxes, 6d., 1s., 2s., and 4s.</td>
<td></td>
</tr>
<tr>
<td>Best Sealing Wax, 1d., 2d., 4d., and 8d. per Stick.</td>
<td></td>
</tr>
<tr>
<td>Lawyers' Parcel Wax, 2s 6d per lb.</td>
<td></td>
</tr>
<tr>
<td>Red Tape, 1d., 2d., and 3d. per piece</td>
<td></td>
</tr>
<tr>
<td>Botanical Paper, 1s. 9d. per Quire.</td>
<td></td>
</tr>
<tr>
<td>Plain, Address, and Calling Cards, Pocket Pencils, J. &amp; J. H. R.'s and Cohen's make.</td>
<td></td>
</tr>
<tr>
<td>Patent Leads and Solid Inks, for Re-filling Pencil Cases.</td>
<td></td>
</tr>
<tr>
<td>Perry's Patent Pocket Pencils in Ivory and Aluminium.</td>
<td></td>
</tr>
<tr>
<td>Elastic Bands.</td>
<td></td>
</tr>
<tr>
<td>Patent Pasteners.</td>
<td></td>
</tr>
<tr>
<td>Palmer's Wax Vestas.</td>
<td></td>
</tr>
<tr>
<td>Liquid Gum, Glue, and Cement, 1d., 6d., and 1s. per Bottle.</td>
<td></td>
</tr>
<tr>
<td>Damping and Varnish Brushes.</td>
<td></td>
</tr>
<tr>
<td>See DRAWING REQUISITES, p. 20.</td>
<td></td>
</tr>
</tbody>
</table>

Card Plate Engraved, any Style, 2s to 3s.

Ivory Cards, and Printing from Plate, Ladies' Size 2s 6d 4s 6d.

Do., do., Gentlemen's Size 2s 3d 4s 0d.

Cards neatly Printed, from ordinary type, at Two Hours' Notice.
MISCELLANEOUS STATIONERY GOODS, &c. 19

CARBONIC PAPER FOR MANIFOLD WRITING,
Barnard & Sons' own make, Black, Red, and Blue, 5d per Sheet.
White, 6d. per Sheet.

Travelling Desks, Tourist Cases, and Papetries, all Sizes.

CARD CASES, IN LEATHER, SHELL, AND PEARL.
Pocket Books, Portemonnais, and Purses.

LABELS FOR ADDRESSES, &c.

Eyelet—Cloth, Jute Paper, and Parchment.
Adhesive—own make, of good paper.
Game and other special Labels and Addresses printed and got up
to order.
Drapers' Price Labels, 6d per box; Numbered Labels, any size.

Miscellaneous Fancy Articles.

Paper Maché Writing Cases and Ink Stands.
Bookmarkers, all lengths, with Ivory and Gilt Pendants.
Do., of Coventry Silk manufacture.
Match Boxes, in Fancy Wood and Leather.
Penmaking Machines.
Paper Knives and Reading Hooks, in Bone, Ivory, and Rosewood.
Ivory Pocket Knives, for paper and fruit.
Gold Presentation Pen and Pencil Cases.
Ivory, Pearl, and Shell Penholders.
Ivory, Paper Maché, and Ass-skin Tablets, 'Where is its,' &c.
Rosewood Date Cases, Ring Stands, and Card Racks, in Gilt Mountings.
Lock-up Envelope Boxes in Oak and Leather.
Blotting Books in Roan and Morocco, with and without Locks.
Metallic Books, and Inserts and Pencils.
Pocket Wallets and Bill Cases
Perforated and Embossed Cards.
Do., Mounted and Unmounted, for Bookmakers.

BOOKS and other Articles in the Wood Work of the District.

CARTE DE VISITE ALBUMS, in endless Variety,
At prices varying from 1s. 6d. (holding 12 portraits, 1 on a
page) to £3, 3s. (holding 200 Portraits, 4 on a page), splendidly
done up in Russia and Morocco, with clasps, gilt mountings,
and durable cloth inside linings or leather hinges.

Do., do., all sizes, in Wood of the District, with and
without Paintings.

Stereoscopes, Stereoscopic Slides, Cartes, Views, &c.
PAINTING AND DRAWING REQUISITES.

COLOURS, MOIST AND HARD, by Reeves, Barnard, and Winsor & Newton, in Single Pans, Cakes, and in Boxes.
Gold Leaf, and Gold and Silver Shells; China Ink, real and common; Chinese White; Ox Gall, &c.
Liquid Gold Colours for Illuminating.
Hair Pencils—Sable, Fitch, and Common.
Drawing Pencils by Wolf, Morell, Cohen, Winsor & Newton, and Barnard, 3d to 6d; and J. & J. H. R.'s own Twopenny, all shades.
The Pencils now sold are all made from ground-up German lead, and are mostly made in Germany, the stamp "Real Cumberland" notwithstanding. In fact, J. & J. H. R. believe that the only difference now in the quality of Drawing Pencils is the difference in price and outside colour.

Note.—J. & J. H. R. have still a few Real Cumberland Lead Pencils made by Brookman & Langdon, London, and Banks, Foster, & Co., Keswick.

CHALKS.
French Black and White, in 1d Squares.
Coloured (English) in Wood.
Italian in pieces, 3d per oz. Prepared Charcoal.
Port Crayons and Stumps.

Drawing Papers, all sizes, rough and smooth.
Drawing Card Boards, all sizes and thicknesses.
Crayon Papers, all shades of colour.
Mounts, Royal and Atlas sizes, all thicknesses.
Sketching Books and Solids.
Tracing Paper, Double-Double Crown Size, 6d per sheet.
Tracing Cloth, Barnard's Make, 2s 6d per yard.
Do. Common, narrow, 1s; broad, 2s
Architects' Cartridge in Sheets and Web.
Portfolios for holding Sketches and Drawings.

Sketches and Drawings carefully mounted.
Sketching Books and Solids made to order.
Outlines for Illuminating.

Mathematical Instruments.
Ebony Rules, all thicknesses, round and flat.
Artists' Flexible Do.
Palettes. Burnishers.

Priced and Illustrated Catalogues of Painting, Drawing, and Illuminating Materials to be had on application.

CRAYON AND PENCIL STUDIES.
DRAWING AND WRITING MATERIALS.

J. & J. H. RUTHERFURD'S

SELECTED STEEL PENS,
Manufactured expressly after their own instructions, and combining many improvements.

NIBS—FINE, MEDIUM, BROAD, AND "J." POINTS,
For Correspondence and Book-keeping,
In Quarter, Half, and Gross Boxes, at 9d, 1s 4d, and 2s 6d.

SCHOOL PENS: NIBS—FINE, MEDIUM, AND BROAD POINTS,
In Gross and Half Gross Boxes at 1s 4d and 8d.

SHOULDER PEN, for Finishing Lessons,
1s 9d per Gross; 1s per Half Gross.

BARREL PENS—FINE, MEDIUM, BROAD, AND "J." POINTS,
in Boxes of One Dozen at 9d.

SMALL BARREL—LONG STIFF POINTS,
for General Work, in Boxes of 1 Dozen at 9d.

"IMPROVED STEEL PENS.—Our attention has been directed to a superior sort of 'Fine Writing and Correspondence Steel Pen' (nibs), manufactured and carefully selected expressly for our townsmen, Messrs Rutherfurd. They are finely pointed, elegantly shaped, nicely polished, and very flexible. Nibs for Book-keeping and Ordinary Writing, and Barrel Pens for Rough Work and Addressing, also are prepared."—Ke'so Chronicle.

Steel Pens by Perry, Gilliot, and Heath.

ETCHING PENS.

STEEL-PEN HOLDERS from 3d per Dozen, up to 5s each in Ivory, and Ebony and Silver.

WRITING INKS.

Perth Black, Cochran's Fluid, Duncan & Flockhart's Do., Stephen's Do., Morell's "Registration," &c., at 1d, 2d, 4d, 6d, 1s, 1s 6d, 2s, and 3s per Bottle, or in Jars at 3s 6d.

J. & J. H. RUTHERFURD'S Office and School Ink, 8d and 1s per Bottle.

J. & J. H. RUTHERFURD'S "New Registration" Ink, at 1d, 2d, 4d, 6d, 1s, 2s, and 3s.

* * This is a mixture possessing the flowing qualities of Cochran's Fluid, with the Immediate Blackness of Morell's "Registration," and has given the greatest satisfaction.

RED, VIOLET, AND OTHER FANCY INKS.

COPYING INK.

Cochran's, Duncan & Flockhart's, Hope's Commercial, 9d, 1s 6d, 2s.

ADRIEN MAURIN ENCRE SYRIENNE COMMUNICATIVE VIOLETTE NOIRE.

This French Ink is undoubtedly the best for copying; but as an ordinary writing ink for book-keeping it is unsuitable: it lies too much on the surface of the paper, and after being dried a rub will send it over the paper in a smudge. As a correspondence ink, however, where the risk of rubbing is nil, it is very suitable. This is the ink which many city stationers advertise as the "Queen's Ink."

To be had either Copying or Plain.
BUSINESS BOOKS,
CONSISTING OF

LEDGERS—Foolscap, Post, and Demy Sizes. All Styles of Binding, and in Ordinary and English Rulings.
DAY BOOKS—Long and Broad Folio, and in Single and Double Money Rulings.
CASH BOOKS AND JOURNALS.
LOCK JOURNALS, LEDGERS, AND CASH BOOKS.
SEDERUNT AND MINUTE BOOKS—Ruled with and without Margins.
PASSE BOOKS—all Sizes.
COPYING LETTER BOOKS, Best and Medium Qualities, and all Thicknesses.
INDEXES (SEPARATE), Narrow and Broad.
SALE ROLL BOOKS, INVENTORIES, AND INTERLEAVED INDEXES.

BUSINESS BOOKS of Special Rulings, Sizes, Bindings, or Printed
Headings quickly and carefully attended to.

SCHOOL STATIONERY.

4to CYpherinG BOOKS—Plain and Ruled, and Cross Ruled.
VERSION and EXERCISE BOOKS—all Thicknesses.
BLACK LEAD PENCILS.
SLATE PENCIL, Soft, Hard, and in Wood, in Bulk and in 1d. and 4d. Boxes.
INDIA RUBBER—Plain and Vulcanite; and ERASERS.
SLATES—Best Welsh, with and without Frames; all sizes.
Do., for Music.
SLATE CLEANERS, 4d and 6d; SPONGE, 1d to 3d.
NELSON’S BOOK SLATES, 1d and 4d.
COPY BOOKS (Ruled)—Small Hand, Text, Half-Text, and Mixed, 6d, 2d, and 1d.
Do. (Headed)—Swan’s Geographical, Biographical, and Ordinary Varieties, 6d.
Do. Do. Darnell’s, Chambers’, and Farnell’s, 6d.

Books for Single and Double Entry Book-keeping published by
W. & R. Chambers.

Cartridge for Map Drawing, and Pencils.
BUSINESS & SCHOOL STATIONERY, GAMES, &c. 23

GOODALL & SON’S MANUFACTURES.

THE GAME OF CHECK,
A highly interesting and scientific Card Game for two, three, or four players. Sets, in various styles, with Rules and Registers—from Two Shillings to Half-a-Guinea.

THE ROYAL GAME OF BEZIQUE.
Elegant Sets, in great variety, from Half-a-Crown to One Guinea and a Half.

Instructions and Counters accompany each Box.

This highly interesting and amusing Game is held in great favour on the Continent and the United States, and is rapidly becoming popular in this country.

PRIZE MEDAL PLAYING CARDS.
In Moguls, Harrys, and Highlanders, and lower priced qualities, from 10d to 3s 9d per Pack.

New Patterns for the present season—
The Holly. The Mistletoe. The Doves.
The Robin. "Ich Diene." The Scottish Lion.
The Butterfly. The Combat. The Royal Irish.

THE CAMDEN WHIST MARKER,
Ebony and Rosewood, with Ivory or Wood Indicators,—adapted for Short or Long Whist.

Cases for holding Playing Cards, Single 6d, Double 1s and 1s 6d.

CHRISTMAS STATIONERY & VALENTINES,
Richly Illuminated, unequalled for beauty and elegance of design and delicacy of finish.

FANCY, PLAIN, AND MOURNING STATIONERY
In all styles, sizes, and qualities.
THE SCOTTISH BORDER:
A MEMORIAL
OF
HER MAJESTY'S VISIT TO THE DISTRICT,
AUGUST 1867.
Price 6d. sewed, 1s. cloth.

SECOND ISSUE, WITH ADDITIONS,
The Edition specially prepared for Her Majesty,
Illustrated with the following Photographs taken expressly for the Book by Messrs. Dutton Brothers, Bath, and Mr. Horsburgh, Edinburgh:

Kelso.
Kelso Abbey.
Floors Castle.
Roxburgh Castle.
Melrose Abbey (Exterior and Interior).
Ednam House.

Abbotsford.
Jedburgh Abbey.
King James' Holly.
Les Fleurs d’Ecosse.
Kelso New Free Church.

Shedden Park Gateway.
&c.

Of this Edition only a limited number of copies were printed.

"This gem-like book, which contains fourteen photographic views of the chief objects of interest in the district visited by Her Majesty, gives a most interesting description of Her Majesty’s progress, and a condensed epitome of the history of the Scottish Borders. The book is beautifully printed, and the photographic views—which have been executed by J. & J. Dutton, of Bath, and Mr. Horsburgh, of Edinburgh—are picturesque and sparkling. The aim and end of the work is well expressed in the preface—viz., ‘A general desire was expressed to have the leading incidents in a condensed form suitable for future reference, and in deference to this feeling the present memorial has been compiled. While omitting a variety of little details, it has been thought advisable to interweave with the narrative some historical notices of the principal places visited by the Queen, in the belief that readers at a distance will desire some information about places in which Her Majesty showed a very special interest.’ This has been well done, and we can cordially recommend the beautiful little book to all who appreciate the historical interest of the objects delineated and the incidents described in this graphic manual of the Scottish Border.”—Scotsman, 19th Nov., 1867.
Lately Published, Handsomely Bound in Cloth,

RUTHERFURD'S

SOUTHERN COUNTIES' REGISTER AND DIRECTORY;

CONTAINING ACURATE LISTS OF THE PUBLIC BODIES, REGISTERED ELECTORS, ETC., COUNTY RESIDENCES AND FAMILIES, AND MUCH USEFUL INFORMATION, COUNTY AND PAROCHIAL, CONNECTED WITH

ROXBURGH, BERWICK, AND SELKIRKSHIRES.

OPINIONS OF THE PRESS.

"The work is a model of completeness on almost every matter and thing pertaining to the Southern Counties."—Caledonian Mercury.

"The book forms a manual of useful information, judiciously and carefully compiled, relating to the counties of Roxburgh, Berwick, and Selkirk, which cannot fail to be highly valued by all interested in those Border shires. There can be little doubt that other counties would do well to secure for themselves similar records and repositories of local information and knowledge."—Scotsman.

"This is not a mere directory, but is full of the lore for which the Border counties have long been fam. us."—Daily Review.

"It is one of the most valuable works ever published in Britain."—Sunderland Times.

For Notices of the Map see page 9.
BOOKS PUBLISHED BY
W. BLACKWOOD & SONS.

THE BOOK OF FARM BUILDINGS:

THE BOOK OF FARM IMPLEMENTS
AND MACHINES. By JAMES SLIGHT and R. S. BURN. Edited by HENRY STEPHENS, F.R.S.E. Royal 8vo., with 875 Engravings. £2, 2s, half bound.

A BOOK about ROSES; How to Grow
and Show them By S. REYNOLDS HOLE. Crown Octavo, price 7s 6d.

HANDY-BOOK of the FLOWER
GARDEN. By DAVID THOMSON. In Crown Octavo, price 7s 6d, cloth.

CATTLE and CATTLE BREEDERS.

THE HANDY HORSE BOOK; or,
PRactical INSTRUCTIONS in RIDING, DRIVING, and the GENERAL CARE and MANAGEMENT of HORSES. By "MAGENTA." A New Edition, with Six Engravings, price 4s 6d, cloth.

OUR DOMESTICATED DOGS; their
TREATMENT in REFERENCE to FOOD DISEASES, HABITS, PUNISHMENT, ACCOMPLISHMENTS, &c. By the same Author. Price 2s 6d, cloth.

ON SEATS AND SADDLES, BITS
AND BITING, AND THE PREVEnTION and CURE
OF RESTIVENESS IN HORSES. By FRANCIS DWYER, Major of Hussars in the Imperial Austrian Service. With Engravings and Diagrams. In crown 8vo, price 7s 6d, cloth.

Sold by
J. & J. H. RUTHERFURD, 17, SQUARE, KELSO.
Now Publishing in Monthly Parts, price 5s each,  
A NEW EDITION OF  
THE BOOK OF THE FARM.  

ABRIDGED PROSPECTUS.  
Twenty years have elapsed since the last edition of 'The Book of the Farm' was published. During that period it has often been reprinted, but without alteration of the text. In the interval, numerous and important changes have taken place in almost every branch of Agriculture. Things which at that time were in vogue have now become obsolete; theories which were then on their trial have been adopted or put aside as experience dictated; and improvements of great and unquestioned value have been introduced.

It may be sufficient here to indicate a few of these advances, each of which represents a large addition to the food-producing powers of the country. The Tweeddale Plough, by the ease with which it reaches a deep furrow, has put it in the power of farmers to extend the range of the food of plants by greatly increasing the amount of the friable soil of this insular kingdom; the Reaping-Machine sweeps down the corn, in regard to time, in the ratio of ten to one; with the ground prepared for it, the Steam-Plough supersedes a large amount of animal power; the Locomotive of the Portable Threshing Machine largely economises steam-power by being alternately employed in its own work and with the Steam-Plough; Guano, with its chemical compeer Dissolved Bones, enhances materially the weight of green crops produced; Linseed Cake, with its congeners, accumulates flesh and fat on Live Stock in a greatly-increased ratio; whilst other important advances have been made as regards the economical feeding, housing, and general treatment of the animals of the farm.

The aim of 'The Book of the Farm' has, from the first, been to constitute a thoroughly practical guide to the young pupil-farmer; and it has now become necessary that these various advances in Agriculture should find their place in its pages.

During these twenty years, inclination, not less than duty, has led the Author assiduously to watch the changes affecting Agriculture, and carefully to note whatever seemed worthy of notice. . . . The final result of the Author's labours, in the course of which the greater portion of the work has been rewritten, has been, he hopes, an increase of information for the pupil-farmer in smaller space; and especially and emphatically, the bringing 'The Book of the Farm' fully up to the present state of scientific and practical Agriculture.

This Edition will be published in Ten Monthly Parts, at 5s each.  
No. 1. was issued 1st July.  

W. BLACKWOOD & SONS, Edinburgh and London.
Lately Published, Price 2s 6d,
Handsomely bound in cloth, and a proper size for the pocket,
A NEW EDITION OF
RIVER ANGLING FOR SALMON AND TROUT,
BY THE LATE JOHN YOUNGER, St Boswells.
With additional and re-written Chapters on Creeper, Stone Fly, and Worm Fishing, by the Editor; and a Portrait and Memoir of the Author.

The Gift-Book of the Border.

Lately Published,
A HANDSOME ILLUSTRATED EDITION OF
LEYDEN'S SCENES OF INFANCY
AND BORDER POEMS, &c.,

ILLUSTRATIONS.—The Illustrations consist of Leyden's Birthplace, Kelso, Jedburgh, Hermitage Castle, Melrose, Kelso Abbey, and Abbotsford. The best copies have, in addition, a Photograph of the Monument to Leyden lately erected at Denholm.

PRICES.—Cloth, 6s 6d; Calf, red edges, 10s 6d and 11s 6d; Morocco antique, or extra, 12s 6d and 13s 6d; in Clan Tartan and in Wood of the District, with Painted Vignette, 20s and 21s.

J. & J. H. RUTHERFURD, 17, SQUARE, KELSO.

See following pages.

J. & J. H. R. guarantee their Die Cutting and Stamping to be of the best quality; and a comparison of their Prices with those advertised by Edinburgh and London houses will show them to be moderate. With them, too, a Ream of Paper, whatever be its size, means but 480 sheets.*

*Many Scotch establishments are apt to send the enormous quantity of 1920 sheets of note paper, 3840 of card paper, and 960 of 4to post, when a Ream is ordered, and to charge it in proportion—much to the customer's surprise. Some of them have also a habit of counting and charging Quires on the same liberal scale.
### REVISED PRICE LIST

**OF**

**DIES AND DIE STAMPING**

**AT**

**J. & J. H. RUTHERFURD’S, KELSO.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>s. d.</td>
</tr>
<tr>
<td>1.</td>
<td>Cypher, One, Two, or Three Letters</td>
<td>60 to 70</td>
</tr>
<tr>
<td>2.</td>
<td>Monogram, Two or Three Letters</td>
<td>60 7 6</td>
</tr>
<tr>
<td>3.</td>
<td>Medieval Device</td>
<td>13 0 20</td>
</tr>
<tr>
<td>4.</td>
<td>Crest and Motto, with Garter, &amp;c.</td>
<td>8 0 9 6</td>
</tr>
<tr>
<td>5.</td>
<td>Do. Do., with Initial</td>
<td>9 0 10 6</td>
</tr>
<tr>
<td>6.</td>
<td>Address and Crest</td>
<td>14 6</td>
</tr>
<tr>
<td>7.</td>
<td>Arms, Crest, and Motto</td>
<td>about 25</td>
</tr>
<tr>
<td>8.</td>
<td>Address Die</td>
<td>6 0 7 6</td>
</tr>
<tr>
<td>9.</td>
<td>and 10. Business Dies</td>
<td>5 6 9 6</td>
</tr>
</tbody>
</table>

#### RELIEF DIE STAMPING.

**Per Ream (480 sheets), any size of Paper.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Die and One Colour</td>
<td>3 6</td>
</tr>
<tr>
<td>Two Dies and Two Colours (see No. 6)</td>
<td>6 6</td>
</tr>
<tr>
<td>One Die in Gold (see No. 4)</td>
<td>10 6</td>
</tr>
<tr>
<td>Plain*</td>
<td>1 6</td>
</tr>
</tbody>
</table>

**ENVELOPES, PER 1000, any size.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Die, One Colour</td>
<td>6 6</td>
</tr>
<tr>
<td>Two Dies, Two Colours (see No. 6)</td>
<td>11 6</td>
</tr>
<tr>
<td>One Die, in Gold (see No. 4)</td>
<td>20 0</td>
</tr>
<tr>
<td>Plain*</td>
<td>1 6</td>
</tr>
</tbody>
</table>

Smaller quantities than the above charged somewhat proportionately higher, and larger quantities proportionately lower.

*Note.*—A discount is allowed from the above prices for Cash payments.

*No charge for Plain Stamping when 4 Reams of Paper or 2000 Envelopes of good ordinary quality are taken.*
The Ptarmigan
Ben Lomond
J. & J. H. RUTHERFURD'S
NEWEST STYLES
OF
DIES AND DIE STAMPING.

REVISED PRICE LIST.

<table>
<thead>
<tr>
<th>No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initials—the effect of two dies (+ 1 and + 2)</td>
<td>each 3 6</td>
</tr>
<tr>
<td>or as one Die cut to produce the same effect (see No. 4)</td>
<td>7 0</td>
</tr>
<tr>
<td>2. Initial and Name</td>
<td>.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. \</td>
</tr>
<tr>
<td>3. Name or Address and Scroll</td>
<td>.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. \</td>
</tr>
<tr>
<td>4. Initials cut so as to work in Two Colours</td>
<td>.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. \</td>
</tr>
<tr>
<td>5. Address within Circles enclosing Monogram or Initials</td>
<td>7 6</td>
</tr>
<tr>
<td>6. Address</td>
<td>.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. \</td>
</tr>
<tr>
<td>7. (No charge for the use of Initials in this and many other styles).</td>
<td></td>
</tr>
<tr>
<td>8. Engraved Plate</td>
<td>.. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. .. \</td>
</tr>
</tbody>
</table>

STAMPING.

<table>
<thead>
<tr>
<th>No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The present style of strong contrasts</td>
<td>.. .. 3 6 7 0</td>
</tr>
<tr>
<td>2. One Die and One Colour only</td>
<td>.. .. 1 3 2 0</td>
</tr>
<tr>
<td>3. One Colour</td>
<td>.. .. .. .. .. 1 3 2 0</td>
</tr>
<tr>
<td>4. One Colour and Silver or Gold</td>
<td>.. .. 4 6 10 6</td>
</tr>
<tr>
<td>5. Two Colours and Ditto, or One Colour and Silver</td>
<td>.. .. 6 0 13 0</td>
</tr>
</tbody>
</table>

For larger Nos. see previous List.

8. Printing Paper or Envelopes | 500, 6s.; 1000, 8s.; 2000, 12s.

9. Emblazoning—new style by a first-rate Artist. Prices of Engraving and Stamping according to work.