

have been paid for this privilege on a single *garzero* during one season. In spite of the slaughter of thousands of these birds, the *garceros* continue to be used by the egrets, but in ever diminishing numbers. The beauty of a few feathers on their backs will be the cause of their extinction. The love of adornment common to most animals is the source of their troubles. The graceful plumes which they doubtless admire in each other have appealed to the vanity of the most destructive of all animals. They are doomed because the women of civilised countries continue to have the same fondness for feathers and ornaments characteristic of savage tribes."

In concluding this notice of a very interesting book, we have only to add that there are numerous illustrations—of which, through the courtesy of the publishers, we reproduce one—a map showing the author's route, and a full index.

PATENT LAWS.

THE question of our patent law legislation is again coming into prominence, probably owing to its close relationship to other great economic controversies now occupying the mind of the country. It is, however, singular that although this is mainly an economic question, the subject of our patent laws is invariably discussed solely from the standpoint of the inventor. There are in reality two interests which must always be jointly considered, namely the interests of the inventor and the interests of the community.

In a letter which recently appeared in the *Journal* of the Society of Arts, Mr. C. D. Abel, the well-known patent agent, argues that our patent laws are certainly more advantageous to the inventor than either the law of the United States or of Germany. If this be true, may I ask who derives the benefit of our benevolence? Is it not chiefly the foreign inventor and the foreign manufacturer who are the gainers, and our community who pays for it? Natural inventiveness and natural ingenuity being equally spread over the white races, we should possess the portion allotted to a population of forty-two millions as compared with a total white population of roughly 440 millions. If it be true, therefore, as Mr. Abel states, that this country confers greater advantages on inventors than any other, are these advantages not conferred on ten foreign inventors to each one of our own country?

Space forbids me to analyse closely the minor points in which Mr. Abel seeks to find advantages for the inventor in our law not afforded by the American or German law. Let me turn at once to what Mr. Abel calls (from the inventor's point of view) the crux of the question.

Mr. Abel appears to be thoroughly satisfied with the examination into novelty which has been adopted by the Act of 1902. This need occasion no surprise, as he states that he himself proposed the system. I must, however, as I did when Mr. Abel first published them, raise strong objections to the figures by which he attempts to show that the grant of a German patent, in spite of real and thorough examination into novelty, does not confer a better title and greater security to the patentee than a British patent. Mr. Abel states that just the same proportion of litigated patents were declared void in Germany as in Great Britain in the year 1896. I desire to point out that quite apart from Mr. Abel's figures the proportion of patents declared void is a matter of no consequence whatever in this connection. The greater security of a German patent lies in the fact that out of about 15,000 applications to the German Patent Office, less

than 6000 are granted. This weeding out of 9000 patents, by a careful and searching preliminary examination, carried out by a competent court, enhances the value of, and gives greater security to, a German patent. In this respect, the Act of 1902, although an improvement on the old Act, is still satisfactory neither to inventors nor to industrial interests. Even if it were true, as Mr. Abel suggests, that as many patents are annually declared null and void in the German courts as in our own, there would be more than one good reason to account for this. Let me briefly repeat some of the reasons, from a pamphlet which I published in 1901.

(1) Probably half of our patents are not worth fighting for, as they are not worth the paper on which they are printed.

(2) Patent legislation, in this country, for a man of moderate means spells financial ruin, while in Germany redress is open at a very much smaller expense.

(3) Account must be taken of the difference in the length of life between English and German patents.

But Mr. Abel's figures are misleading. Whether he intentionally took the year 1896 in order to strengthen his case or merely at random, as he says, is of little importance. The fact remains, and this he ought to have known; that fair or trustworthy conclusions cannot be arrived at by statistics of a single year. I took the trouble to point out to Mr. Abel in 1901 that 1896 was an exceptional year, and prepared a table from official sources, which covers not only 1896—Mr. Abel's year—but also four preceding years. This table, being prepared from accurate official sources, was necessarily arranged in a slightly different manner. It did not include patents litigated or patents partially invalidated; as no trustworthy statistics exist, a good deal of patent litigation is carried on without coming into court, or without being published in the official report of patent cases.

Mr. Abel's Table

	Patents 1896	Patents granted	Patents litigated	Patents wholly or partially invalidated
Great Britain ...	14,105	...	29	13
Germany ...	5,410	...	102	43

Table Compiled from German Official Sources for 1892 to 1896.

Year	Applications	Patents granted	Patents invalidated, including patents withdrawn
1892 ...	13,126	5,900	10
1893 ...	14,265	6,430	12
1894 ...	14,964	6,280	22
1895 ...	15,063	5,720	18
1896 ...	16,486	5,410	32

It will be seen from this table that thirty-two patents were withdrawn and invalidated in 1896, whilst the average for the four preceding years is only 15.5 per annum. So much about Mr. Abel's figures.

I quite concede that a searching and real preliminary examination is a controversial subject, but from an economic standpoint it must be admitted that the want of conformity existing between our law and that of Germany as to preliminary examination inflicts great injury on our trades. For example, the grant of a British patent to a foreign applicant which his own country has refused to him benefits the foreign country at our expense, the loss to us being proportionate to the value of the invention.

The compulsory working of foreign patents in this country is, however, a far more serious question than "preliminary examination as to novelty." The Act of 1902 only dealt with compulsory licenses, and, so far as it goes, it is an improvement of the old Section 22, but more stringent measures are wanted to make

our law conform to that of our Continental rivals. We require, in the interests of our home trades and industries, that a patent shall be forfeited if it is worked abroad and not in this country.¹

The grant of compulsory licenses has many disadvantages. It requires often years of hard work, ingenuity, and the training of an experienced staff before a patented article can be profitably manufactured on the large scale. Is it reasonable to expect that the foreign owner of the patent will impart such knowledge to the applicant for a compulsory license, or afford him any aid beyond the meagre details of the patented process? Quite independently of this, the owner of the patent will cause as much delay as possible before he grants the license, and, in any circumstances, no application for a compulsory license can be made before the lapse of three years from the date of application. In addition, the onus is thrown on the British applicant to show that the non-working of the patent is unfairly prejudicing any existing or the establishment of any new industry. There is thus little inducement to home manufacturers to take out licenses for foreign patents, and thereby to introduce the manufacture of the article into this country. The non-working of foreign patents has inflicted incalculable harm on our trades. There is, in my opinion, only one effective measure with regard to working foreign patents, and this is to make it compulsory to work them on an adequate manufacturing scale say twelve months from the date the invention is worked in foreign countries. We have more reason, or at least our interests demand it in a higher degree than those of any other country in the world, to insist that the onus should be on the foreign owner of a patent to work the monopoly which we have granted to him in this country so long as it has been proved that the patent is workable. The working of patents is an economic question of the highest importance, but it ought not to be discussed from the platform of either the free importer or the protectionist. Its consideration is beyond the present fiscal controversy because the grant of a monopoly to any person, that is, the grant of a sole and exclusive privilege, is in itself the highest form of protection, but our legislature since the time of James I. has established this form of monopoly, and rightly continued to exercise it.

Before James I.'s time, patents were granted to any one—not necessarily an inventor—who introduced a new manufacture into this country, and I think not unjustly. The man who establishes a new manufacture does more good to the community than thousands of patentees who work monopolies which we have granted to them outside of this country.

The first Patent Act, the Statute of Monopolies of James I., introduced so far a change that it confirmed the right of granting patents to the first and true inventor, but on the condition that he introduced a new manufacture in this country. This law has been enforced to this day by every prominent industrial country in Europe except by ourselves, and I will now endeavour to show why no country in the world has a greater interest than our own to insist that the grant of a foreign patent should be on the condition of its being worked in this country always provided that it is worked abroad.

(1) We grant a far larger number of monopolies to

¹ At the annual meeting of the Association of Chambers of Commerce of the United Kingdom held in London, the following resolution was passed on March 10, that "whilst welcoming the instalment of reform secured by the Patent Law Amendment Act of 1902, further amendment is needed in order to secure the forfeiture of all foreign patents for inventions workable in this country, which are not so worked within a reasonable limit of time."

foreigners, and on much easier terms, in consequence of a lack of a thorough examination into novelty, than other European countries.

(2) Progress depends on improvements and new inventions; we are, however, as little self-contained as regards the supply of ideas as we are with regard to the supply of food. We must largely rely on foreign inventions for the reason that our population is only a small portion of that of Europe and America.

(3) We have free imports, whilst the foreign patentee is protected by high tariffs. It is therefore, as a rule, not in his interest to work in this country the monopoly which we have granted to him. He prefers to work it in the country which gives him high protection, with the additional advantage of selling to us his patented article, without any restrictions, and at his own price. This is the converse to dumping. Nor has he any other inducement, special circumstances excepted, voluntarily to establish new industries in the United Kingdom. Our patent law does not attract him, nor does our high duty on alcohol, nor do higher wages and shorter hours, nor our rates for transport, which are about twice as high compared with those, for example, of Germany. The want of compulsory working is one of the reasons that for the last twenty years we have established so very few new trades or industries in comparison with other nations.

It is, therefore, of grave importance that our legislature ought only to grant monopolies on the clearly defined condition that such monopoly must be worked within this country. We stand in serious need of finding additional occupation for our people. Employment in our staple industries we do positively know is declining, with one or two exceptions, nor is the total increase in the number of persons employed in all trades adequate to the nett increase of our population. The latter contention may be at least safely assumed by the fact of rapidly increasing emigration, and the increase in the number of unemployed and of those who are working at a starvation wage.

America is the only industrial country of any importance which does not insist on the working of a patent, nor does she require such an enactment. She has protected herself by almost prohibitory tariffs, which in themselves afford the greatest inducement to the owner of a patent to work it or get it worked, instead of paying exorbitant import duties, which, in many instances, may nullify the advantages of the patented improvement. It may be generally said that the higher the import duties the less the necessity for compulsory working, and *vice versa*, the lower the import duty the more stringent should be the law as to working. There cannot be any doubt that had we amended our patent laws in 1877, when patent laws were first established in Germany, in such a manner as to make them conform to the latter, a large number of industries would have been established in this country which do not exist to-day. The German patent laws have largely stimulated enterprise, and (as Privy Councillor Dr. Otto Witt said a few years ago) "have conferred incalculable advantages on German trades and industries."

Ours have been chiefly instrumental in advancing the industrial and commercial interests of our foreign competition. The whole nation is in arms, for and against, when it is a question to put a shilling tax on corn, but we are content to leave to a few lawyers and patent agents the decision of a question of a purely economic character which largely involves our industrial and commercial future. When is our

legislature to wake up and appreciate the fact that we must, by all legitimate means, encourage the establishment of new industries within this realm?

IVAN LEVINSTEIN.

BIRD MIGRATION IN GREAT BRITAIN AND IRELAND.

THE great inquiry on the migration of birds as observed in Great Britain and Ireland instituted in 1880 by the British Association was brought to a conclusion at the Southport meeting last year, and it may be useful to describe shortly what it accomplished, and to direct attention to some of the results, which practically remain unknown except to a few ornithologists specially interested in the subject.

For eight years, 1880-1887, the committee appointed collected voluminous observations from the numerous light stations, some two hundred in number, around the British and Irish coasts. From the enormous amount of material thus amassed, a digest of the observations was prepared and presented to the Liverpool meeting, and was published in the report of the Association for 1896 (pp. 451-477), affording, in a highly condensed form, the general results of the inquiry in all its aspects, geographical, seasonal, meteorological, &c. This was followed by a series of histories wherein each and every movement (and the very varied conditions under which they are performed) of eight birds carefully selected so as to include every type of British migrant was exhaustively treated.

These histories appeared in the reports for the years 1900, 1901, 1902 and 1903.

Turning now to some of the special results of the inquiry, in the first place it was clearly proved that a considerable proportion of our native-bred song thrushes, blackbirds, skylarks, starlings, rooks, lapping, and other species which are usually regarded as being wholly resident throughout the year are migratory; indeed, they are as essentially summer visitors to our isles as the swallow and the cuckoo. They leave us before the end of summer for southern Europe, and are the first harbingers of spring to appear on our shores, arriving during February and early March.

As regards the geographical aspect of the subject, perhaps the most interesting of the varied movements investigated, if not actually discovered, are those remarkable intermigrations which take place between the south-eastern coast of England and the opposite shores of the continent by a westerly autumn and easterly spring flight. Day after day in late September and during October, when the weather is suitable, vast numbers of skylarks, starlings, chaffinches, tree sparrows, rooks, and jackdaws rush across the southern waters of the North Sea, proceeding chiefly due west off the mouth of the Thames (the centre of the stream), south-west off the coast of Kent, north-west off Norfolk, and north-north-west off the Humber. Corresponding return migrations, in opposite directions, are witnessed in the spring. A noteworthy feature of these movements is that they are performed during the daytime; indeed, they are the main diurnal flights observed on the British coasts.

During the preparation of the digest and of the various reports, I was so much impressed with the singularity and importance of these movements that I decided to make some further investigations regarding them, and to this end I spent nearly five weeks on the Kentish Knock light vessel, situated thirty-two miles east of the Essex coast and out of sight of land, during the past autumn (see *Ibis*, pp. 112-142). I was previously uncertain as to whence came these hosts of migrants, now I am of opinion that they are emigrants

from western central Europe, which, having probably descended the Maas, Rhine, and Schelde, quit the Dutch coast at the mouths of those rivers *en route* for winter quarters. Some of these remain during the winter in England, others proceed to Ireland, and others, again, depart from our southern shores for more southern lands. There can be little doubt that many of those which remain in our islands *winter in latitudes north of their summer homes!*

Turning next to the meteorological aspect of bird-migration, it has been possible to make a careful comparison between the unique data obtained through the inquiry and the reports issued by the Meteorological Office, and thus to establish satisfactorily certain relations between migrational and meteorological phenomena. For instance, it has been found that each great arrival on our shores of migrants from north-west Europe in the autumn is correlated with a certain type of pressure distribution which establishes fine weather over the North Sea between Scandinavia and the British Isles. Such conditions, however, though they may prevail at the all important point of departure, and hence induce migration, do not always extend so far as Britain, and when this is the case the migrants pass into more or less unfavourable weather ere they reach our shores.

During a month's sojourn in the Eddystone Light-house (see *Ibis*, 1902, pp. 246-269) in the autumn of 1901, I paid special attention to the weather conditions under which the migrants set out to cross the Channel. I found that no movements were witnessed when the weather was in the least degree unfavourable for the passage, and that the wind is undoubtedly the main factor in migration meteorology. The direction of the wind was of no moment, for the birds flitted southwards in winds from all quarters. It was otherwise when its velocity came to be considered, and no movements were performed when this exceeded about 28 miles an hour. At 34 miles the few stragglers observed were in distress, and the only birds moving when it exceeded this and approached 40 miles were swallows and martins. My subsequent experiences at the Kentish Knock Lightship confirmed these conclusions.

The supposed influence of the *direction* of the wind on migratory movements has been much misunderstood, chiefly because the dependence of the wind upon atmospheric pressure does not appear to have been taken into consideration. We now know that certain types of pressure distribution are favourable for and conducive to migration, and the winds also resulting therefrom have erroneously come to be looked upon as the cause for such movements.

Finally, the investigation of certain movements, namely the emigrations, has presented exceptional difficulties, due chiefly to the fact that they are habitually performed under conditions which enshroud them in all but complete obscurity, indeed, often in complete obscurity. The reason for this is that, with few exceptions, emigration is undertaken during the hours of darkness, and thus entirely escapes notice at the place of embarkation. It was with the object of investigating this phase in the phenomenon of migration that led me to visit the Eddystone, where it was possible to observe these emigrants immediately after their departure from our shores. There I found that at least 90 per cent. of the various emigrants crossed the Channel during the night. Indeed, night movements are undoubtedly the rule when considerable expanses of sea have to be traversed. To this rule the chief exception has already been mentioned; but both at the lighthouse and at the lightship I found that day migration was confined to a few species only.

WM. EAGLE CLARKE.