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THE PASSING OF SURGICAL YEOMEN

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AN ORATION postulates an orator. When, therefore, an oration is ventured by one neither oratorically endowed nor trained, only natural is query as to the propriety of the caption. Custom, however, oftentimes violates the true meaning of words until their new connotations come to be tolerated without undue qualms. That this society is by no means innocent of abetting such neologic misdemeanor is apparent on scanning the list of past occupants of this rostrum. There seem to have been very few orators. Be that as it may, they triumphed, one and all, with the brilliance and worth of their offerings. The honor of being chosen to this company of the specially ordained is signal. The task of nearing the standard they set is awesome. Yet earnestly withal has this year's conscript striven to be worthy of his hire. He stands here in all humbleness as his becomes the latest name added to that famed roster whose luster he can only hope will not thereby be unduly dimmed.

Yeomen are gallant men who render great and loyal service. The title was first bestowed on those chosen for their valor and lealty to be trusted bodyguards for kings and nobles. Somewhat later whole companies of tried loyalty were so dubbed; and later still regiments that to this day are proud of their traditional crest. In all the world's wars yeomen were the backbone of armies and the mainstay of navies. As conflicts waned and peacetimes came oftener and lasted longer, and as unwarlike pursuits were more generally followed, the honored title of yeoman was given men who otherwise than as soldiers rendered equally great and loyal service. So through the years the order of yeomanry gained in stature, luster and good repute. In husbandry and trade; in the crafts and arts; in the missions of priesthood and teaching; in all lines of human endeavor, the staid and sturdy men were the yeomen. Lords over none, under human bondage to no man, they were freeborn

commoners. Without any ado they went earnestly and noiselessly about their business. Never did they vision quick reward, but rather the lasting joy and contentment from good works well done. For them sufficient unto the day was the labor thereof. Their virtues were their reward. For their reserve and unobtrusiveness they went unnoted and unsung the while they did the bulk of the world's work. They were the builders of wealth, the winners of knowledge, the guardians of morality. As once they were the might and power of wartime forces, so later in peace were they the strength and the weal of social, economic and civic orders; the bulwark of the state, the leaven of civilization, the wellspring of culture.

Hence were they resolute,
Leading the van on every day of battle,
As men who knew the blessings they defended.
They were worth their breeding, which doubt not;
For there was none of them so mean and base
That had not noble luster in his eyes.

Such were yeomen. Their order still lives with all its noble traditions, but its solid ranks of old are thinned. Sturdiest of the league, truest to its unwritten precepts, surest hope for its salvation, are surgical yeomen. They are the grandsons of stanch and peerless forebears, the rank-and-file physicians of yesteryear. These grandsires were the common doctors, they of the commonalty, but of the first and most respected class. For the most part they were countrymen or everyday citizens, physicians of the district. Impelled not by force from without, but from within by the drive of their own strong natures, they were masters of their own destinies; and in all times the strength, the spirit and the glory of the profession. Workers, not idlers; followers but not stragglers; thinkers, not dreamers; servants but not slaves, they bred in themselves the self-respect, the self-reliance, the self-discipline and the self-culture that were priceless gifts to the commonweal of medicine. Neither great renown nor great riches was often

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theirs. True to their self-chosen order of yeomanry, they were the hewers of wood and the carriers of water. Through the years their good works went unsung until in the fullness of his heart Robert Louis Stevenson wrote:

There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited in the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Heracleian cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, thought not so often as he wishes, brings healing.

About the time this tribute to the family doctor was penned, a new order was forming within the ranks of medical men. It was joined by those general practitioners with leanings and flairs for surgery. Into the new fields opened up by Lister's gift they drove. They were the pioneers of modern surgery. With boundless faith in their art and with courage undaunted by difficulties and early failures, they pressed on with a daring that bespoke their skill and a caution that vouched their wisdom. They need this late day no inspired bard or rare scribe to do them homage. Theirs are names that live.

It was from these pioneers that sprang a race of surgeons. Some of this second generation, those richest endowed with quick heads, daring hearts and deft hands, have become renowned masters of their art. They, like their fathers before them, need this day no recalling. Rather is it their lowly brethren, that host of general surgeons, long lost from mind and eye in the far-flung surgical world, who, overlooked and unrated, merit, nonetheless, appraisal which has never been vouchsafed. They are the surgical yeomen.

In this day and hour they are the old guard, in large measure self-made surgeons. Their medical-school course and their training as surgical interns were, judged by present lights, meager indeed and of little worth. Surgical teaching was encumbered with tradition. Operative fields were not many. Years of trial and error had not yielded refined and standardized technic. The tools of the craft were far from perfected. Care before as well as after operation was little understood, therefore crude and sometimes harsh. But the old guard never faltered. Their own guides on often strange and sometimes uncharted ground, they found their own way. Despite their stunted schooling

and training, steadied by common sense, backed by resourcefulness, impelled by need, they overcame their handicaps, and day in and day out have given earnest of the sterling worth of head and hand.

These surgical yeomen did, however, have a priceless course of training, nowadays rather disdained. Most of them, for one reason and another, began as general practitioners of medicine, and followed that calling for several years. As family doctors they took on stature and grew wise in the art of practice, which is the same, be it medical or surgical, — an art, too, which is better mastered at the family bedside than in the hospital ward. Not that they neglected surgery. Quite the contrary: they saw to it that they were known as physicians who did surgery. When the time came for them to break away from general practice, enough surgery was forthcoming from their lay followings to tide them over the transitional years before medical brethren entrusted to them patients for operation. Whatever sins of omission this apprenticeship of yesteryear may have had, it had few, if any, of commission; and it did have virtues which, if they awarded little of scientific merit, did have something to do, indirectly at least, with the making of dependable and beloved surgeons.

Started on their careers with handicaps of under-schooling and inexperience, they found their chosen course roughened by hazards that only their fortitude and resourcefulness overcame. They had neither drilled assistants nor skilled anesthetists. For many reasons, most of them needful, some becoming, but a few, alas, sordid, all too often they had to tolerate across the table a doctor unused to surgical technic, and at the head another untutored in giving ether. Of the two the former was more easily borne. His clumsy and risky doings could be watched and guarded against while the operator did all the work himself. The anesthetist, however, was a tougher problem. Etherizing, quite commonly looked down upon as a drab and menial chore with none of the glamorous appeal of the operating room, was usually a leftover job for whosoever at the moment was not otherwise busy. It was, then, not at all strange that these casual anesthetists, unfitted for the task and with untoward interest in the open abdomen, too many times harried overburdened surgeons with blue-lipped, wet-throated, rigid, straining patients, or not rarely with pallid, faintly sighing forms whose toneless muscles heralded oncoming shock. Furthermore, the tools of these surgical craftsmen were not always of the latest pattern, the fittings and structure of their workshops were like as not

outdated; but from long and close companionship they were endeared to their owners who learned well to use them handily. Indeed, it was no rare feat for them to operate in the home, on the kitchen table, with dry goods from their own Arnold sterilizers, and with instruments boiled on the family cookstove. These and other hardships, endured and transcended, have richly endowed this race of surgical yeomen with the unconquerable spirit, the unshakable poise and the steadiness of mind and hand that only trials unflinchingly faced and resolutely overcome can bequeath.

The first aim of the old guard has ever been to get sick people well. Eager for the learning and skill that would grant them that power, they left no stone unturned to acquire them. They had no urge to be scholars and laid no claim to that high estate; they were just diligent, lifelong students. They read chiefly the pick of weekly and monthly journals, for they knew that most new books were already outdated when published. To quicken their minds they went often to meetings of their peers, there to listen closely, to speak seldom; and better to guide their eager hands, oft as might be though rarer than they wished, they stole away to surgical meccas where, watching masters, they picked up new leads to diagnosis, new tricks of technic, new wards against disaster and new handling of mishaps.

Of such sterling stock and self-willed discipline are surgical yeomen. There are still a goodly number of them in the land; how many, there is no telling. True to the order of yeomanry, they are the forgotten ones who staff the many hospitals in byways of cities and at rural crossroads. Day in and day out these willing craftsmen go quietly about their business here, there and everywhere, never exploited by the press. And so it is that, notwithstanding master surgeons and their hand-picked helpers in famed clinics, the bulk of the country's surgery is really done by a company of forgotten men.

Mere quantity, however, is no token of the scope and kind of surgery they do. While the former is perhaps not of the widest, its range is by no means narrow. Annual reports from thirty small-town hospitals east of the Mississippi list about the same run of operations as do large clinics, for appendicitis, rupture, gall-bladder disease, cancer of the breast, empyema, pelvic tumors, childbirth repairs and a multitude of traumatic ills. In many there is a quite sizable ratio of thyroidectomies, stomach and bowel resections, splenectomies and rectal excisions, to say naught of orthopedic, urological and some thoracic operating where, be it noted, no specialists are registered. This is no narrow reach of surgical endeavor. More's the wonder, it is

spanned not in part by one man here and another there, but in its entirety by most yeoman surgeons. Each and every one of them stands in readiness to take out a gallbladder today, a thyroid tomorrow and a prostate the day after. Spontaneous and natural it is to marvel at the deftness and skill of a master who numbers his thyroidectomies in the thousands, but could he be otherwise with such vast experience? The real wonder is that yeomen who do perhaps one or two, or even less a week, can remove goiters with the dexterity they do.

In order to rate the quality of surgery done anywhere, resort must be had to figures. That is always a risky venture, for statistics can be made to prove almost anything. There are two yardsticks for measuring the worth and benefits of surgery: mortality and morbidity. Now, well-being after operation is not at all easy to record. Percentages of results good and results bad are apt to be gay deceivers, playing, as they unwittingly do, patients' emotional self-appraisals against surgeons' optimistic desires. Happy outcomes can be stressed, feigned or hidden by human frailty on the one hand; and on the other, setbacks can be as easily sidetracked, pardoned or shaded by equally human professional zeal. From their very nature, then, morbidity statistics are too sensitive to warping to be nice measuring rods. The death rate, on the contrary, is, save for the chance upset of wrong diagnosis, quite positive and accurate; whatever else betides, patients either live or die. Whether or not low mortality is the chief aim of surgery, it is still on the whole the truest token of its worth, the surest common yardstick for all surgeons.

Averaged from hospital reports, the general surgical death rate at the hands of six master surgeons is 4.6 per cent; of thirty scattered yeomen 4.8 per cent, a creditable showing indeed for the lowly ones. This near parity of outcome is of course wide open to attack. That surgical lords who handle the more hazardous jobs do not have a worse mortality is for them a credit just and merited, but, alas, so intangible it cannot be figured. In all fairness, too, must it be admitted that yeomen, by shunting their more perilous work onto their betters, thereby escape a debit equally merited, but likewise too fitful for computation. Righteous as they seem, however, these entries do not tip the scale but are balanced by factual items. Chieftains, too, have their quota of easy jobs, and as for hard, dangerous and unusual operating, not only are they outfitted and skilled therefor, but they yearn for it. Inasmuch, then, as they bid for it, they should willingly pay the toll. On the

other side of the sheet yeomen not at all rarely find themselves of a sudden faced with most difficult operations. There is no forecasting of surgical hazards. What gives every promise of simplicity may easily prove to be otherwise. And there is no turning back; yeomen have to meet the problem, solve it as best they can and let the chips of mortality fall unbegrudged wheresoever they may. If, forewarned, they choose to dump their desperate jobs onto others, they do but show a wisdom that acknowledges their shortcomings, and a stand by their own conviction that needless mortality has no justification.

When the death rates for specific surgical ills are likewise compared, the scales are still pretty level. Mortalities after herniorrhaphies, cholecystectomies and other common as well as rarer ordeals show but a few decimal points in favor of the lords and masters. With the balance sheet running steadily though slightly in the same direction, it was most enlightening to have figures come forth which seem to prove that in one of the commonest abdominal ailments yeomen have the edge. The finding was most pleasing, too, for surgery today suffers no more stinging rebuke than its showing in appendicitis. All vital statistics vouch beyond peradventure that more people are now dying of appendicitis than ever before. Lay scribes are featuring the ill turn of appendiceal mischief with now and then an air of grim and only half-hidden content. In sober vein, current medical writers bewail the blemish on surgery's escutcheon, but are seemingly at odds with one another over what to do about it. It should be noted, however, that the authors of the surgical lamentations are the leaders in big metropolitan hospitals, the heads of large clinics or their hand-picked lieutenants. The experience of chieftains is so vast it is sort of taken for granted that the results of all others are the same. Of late, however, several surgical yeomen have challenged this inference, and as yet it is not recorded that the gauntlet they threw down has been taken up. Their case rests on figures from three sources: federal records of vital statistics, reports from twelve large clinics and accounts from twenty small hospitals. For the whole country the general death rate of appendicitis hovers from year to year around 3 per cent; for appendectomy in acute and non-perforated cases it is 4.8 per cent; but when complicated by peritonitis the rate jumps to 30 per cent. Taking these national figures as mean levels, the challenging yeomen plot some rather upsetting extremes. Whereas the head surgeons list a general mortality for appendicitis of 4.5 per cent, they achieve one of 2.1 per cent. For all acute cases the former con-

cess a death rate of 6.8 per cent; the latter of only 3.1 per cent. And when peritonitis adds its horror, the figures are widest apart: 38.5 per cent against 17.7 per cent. Not content with this pleasing triumph, the challengers go on to show that all records award them in the last decade a yearly drop in death rate, a fall which seems to have eluded their big brethren. There they rest their case. With their usual becoming modesty they vaunt no reasons for their better showing; and with forbearance and kindness learned through many mishaps of their own, they hint no causes for the less happy outcomes of others. In a spirit of fair play, and with an equanimity born of facts, they choose to await in calm contentment the issue of rebuttal.

For the hiding of their good works the old guard themselves are most to blame. They have been too busy to write of their doings, too reticent to speak of them. Their lives have been spent in the rough and tumble of the surgical game, which for long they had to play with the odds against them. Year by year through their own pleadings they have awakened their people to the need for better hospitals, and through their own drive they have brought their workshops up to date. More and more have they picked and trained loyal teams of helpers, and by friendly pleas here and not altogether unkindly insistence there, have won over the layman and his doctor to the gospel that patients fare better with teamworkers than at the hands of casual helpers and etherizers. As they have gained these welcomed changes they have rid themselves of many a hindrance, of many a stress, and have come to the height of their skill and wisdom with the right and the freedom at last to use them to the full.

But these thoroughbreds of the family are more than surgeons; they are gentlemen of the first order, kindly and courteous to all, honoring their leaders, gracious toward their fellows, helpful to younger brethren. In them power and modesty walk together, rare companions these days of might and vainglory. Each in himself is the champion American individualist. He is wedded to the old ways of the surgical art, swayed not by oncoming, thinly disguised mass practice. He was reared in the days when sick people were persons, not records, and he never forgets his bringing up. He knows naught, for example, of a pelvic case in Room 26; but in that bed he has his patient, mother of three children aged two, seven and nine, overworked housewife worrying about her home, Mrs. Mary Jones, whose bleeding fibroid uterus he took out four days ago. The kindly,

personal touch is always with him. When his patients go home from the hospital, he does not hand them wholly over to other doctors, but himself in friendly part watches them through the aftermaths of their ordeals and himself handles the petty discomforts prone later to arise. By so doing he has learned little ways to forestall no few of the untowardnesses that operative haste and post-operative inattentiveness inflict. His reward is an easier, shorter recovery for patients than is sometimes won by others who, interested in records more than in persons, hand over their cases at an early date to the mercies of this or that kindly but less adept family doctor.

Gentleman by habit, surgeon by training, by his faith he is sworn guardian of his calling. Eager and ready to turn to good account the stupendous gains in surgical knowledge, he stands abashed at the strange ways some people would have that knowledge used for suffering mankind. He wonders at the suave effrontery of outsiders who, with insight dim, would nonetheless tell him how best to handle the ills of the people. With the wealth of understanding that is his from a life spent on the firing line, he knows that, despite the social angles the meddlers stress, the true practice of medicine and surgery is personal and individual. For him that is the solid rock on which his calling was built; and on that firm base it has through the ages grown to stature that commands respect for the doctor, though oft, alas, denied the profession at large.

There is good reason to fear that the fate of this race is to be forgotten while here, remembered only when gone. Already there are signs and omens round and about that the order of surgical yeomen and what it stands for are passing. Many a town and urban district are seeing the last of them. Their times and ideals are seemingly outlived; the new day and its values are different.

The old order changeth, yielding place to new;
And God fulfills Himself in many ways,
Lest one good custom should corrupt the world.

Without going into the causes thereof, the surgical craft is being more and more split into specialties. The division of labor without any doubt makes for better surgery; but whether it also makes better surgeons may be questioned. More soundly taught and more sharply trained, the new order has greater learning. Whereof the old-timers, with only long-tried empirical lore, had to guess shrewdly, — though usually right, — the newcomers speak with scientific certainty. Yet somehow the cold, sober logic lacks the warm personal touch of the yeomen. Mayhap the latter did now and then

with their manner and speech cloak their ignorance, but they did therewith spread "air and cheer" in the sickroom. Worried parents and relatives do after all like their draughts of science sweetened with human kindness.

Though surgeons of the hour are more deft of hand than their yeoman sires, each is apt to be so only in his chosen and narrow field. And he sticks pretty close to his own bailiwick, whose no-trespass signs he would have heeded as he himself heeds others all about him. On grounds other than his own he does not feel at home, and therein is his weakness. Specialties overlap, and many a borderline illness straddles a surgical line fence. Does a man with a broken back and some signs of cord mischief belong to the orthopedist or the neurological surgeon? If given into the hands of one, the patient may later develop symptoms that call for the skill of the other, whereupon the first expert has either to call upon the second for aid, which sometimes, alas, is honest clash of opinion, or himself muddle along as best he may. The victim must then either swap horses in the middle of the stream, risk his welfare to a balky team or chance a floundering. It can scarce be maintained that any of these choices grants the sufferer the faith in his surgeon and the peace of mind for himself that lessen worry and make for kindly outcomes.

Every year brings forth new measures of organic function, new tests for disease, new mechanical aids to sight, hearing and touch. Scientific beyond all peradventure each and every one of them adds to better understanding of disease, but for a single patient any one of them may easily be misleading. Each is focused not on the whole of any one disease, but on just one, perhaps small, aspect which it may overilluminate. Despite this and other forewarnings, however, newly trained surgeons show a tendency to overrate now one and now another promising but unseasoned helpmeet. Seemingly too they oftentimes lack the faith of their fathers in the findings of their own eyes, ears and fingers, and put their trust rather in new-found guides who, though meaning well, sometimes lead them into grievous error. And scientific though the guidance be, it is not firsthand. For the most part the handling of such measures, tests and aids is beyond the ken and scope of clinical surgeons and is left perforce to biological chemists, roentgenologists, pathologists and the like. The surgeon thus has to accept not only the findings of these cloistered though earnest workers, but also their reasonings. Instead, then, of a firsthand, clear-cut picture of the patient and his disease, he sometimes finds he has a puzzling clutter of ill-matched,

narrow-field negatives which he must shuffle and strive to fit together.

Not so has the surgical yeoman been troubled or led astray. As science came into his life, rarely did it upset his long-tried empirical knowledge. At times it shifted his beliefs a mite, but more often it confirmed them. Long forced to do without scientific helpmates, he had trained his own senses to catch the faintest of untoward signs, had schooled his brain to sift and value all his findings. When a perfected measure, test or aid came forth, his common sense quickly rated it, his well-ordered mind neatly stowed it away, and his wisdom made of it a means and not an end. If his touch told him the broken leg was about the length of the other, the weight-bearing line true and the ends of the bone in good contact, he was not to be rushed into resetting because x-ray showed that the fragments were not meeting wholly end to end. Nor did he dally with acute appendicitis because the white-cell count was not high. The way a man lay in bed, the look on his face, the strength of his voice and handclasp; the cry and grunt of a sick child; the stare of a tearless woman, these and countless other like signals of distress told him at a glance things about his patient no test tube or microscope can ever reveal. It was not playing hunches, it was not just intuition, and it was not snap guesswork; it was free play of his wisdom. Often hard put to rationalize his opinions, he was sometimes wholly stumped for explanations. He had seen these things many times and had come to know what they meant. He knew human bodies, their modes of expression, their moods of behavior, and what they signified; and above all he knew human nature and was seldom to be fooled by its vagaries. Not that he frowned on laboratories; quite the contrary, he was deeply grateful for all they taught him about disease. He turned to them often and gladly for needed help; valued their judgments but did not let them confuse him. When their reports confirmed his opinion, he was heartened for his patient's sake; but when they ran counter to his clinical reasoning, again and again reviewed, he put his trust in his own long-tried senses, which had rarely led him far astray.

They have had full lives, these surgical yeomen. For some, toil is over. For many more, years of labor are numbered. Plenty are the omens that this old guard is passing; that many a town and urban district are having their last good general surgeons. Gloomy forebodings notwithstanding, faith in surgical yeomanry's ideals still lives. Remnants of the order, scattered and unorganized,

tend the hallowed light and keep it burning. Here and there bands of the faithful are heartened by tokens of an awakening that holds forth promise for their order. Far in the offing are faint rumblings of discontent with some of the surgical fashions of the day, rumbles that seem to be growing in volume. Grumbings against overspecialization are making themselves heard in high places where heed is being given to thoughtful critics. Only partly muffled are complaints that chairs of clinical surgery might best be held by teachers who, well bred in family bedside manners, would drill their pupils in the art as well as in the theory of practice, and would show them how to treat not just sickness but sick people too. Less and less withheld are discreet whisperings of family doctors that when in need of counsel they are finding in one good surgical yeoman the common sense, the help and the cheer for themselves and their patients that surgical specialists with all their scientific learning so often fail to bring. It is unlikely, however, that these and other voices from within the realms of medicine will do for the cause as much as will future uprisings of laymen. Hushed for now, but some day to be loud indeed, will be the cries of disillusioned men and women against the regimentation and mass practice which social and political meddlers seem about ready to impose. Until that public awakening dawns, the old guard can with patience and kindly forbearance await its coming. Then perchance will yeomen come into their own again. Then will their thinned ranks be recruited, and the blessings, the honored ways and the sterling ideals of surgical yeomanry be saved.

Meanwhile a new order holds sway. It is quite different from the old and has a different touch. It seems destined to do better surgery, but whether its workers will be better surgeons only the years can tell. To those who know the old order best, its passing, together with its standards of service, brings a tinge of sadness and misgiving. Mayhap yesteryear, when their fathers were dying, like doubts were held about this old guard then untried; and by the same token the new order may tomorrow prove today's fears ungrounded too. Just as a heedless world has only of late paid tardy acclaim to its pioneer surgeons, so will it likely be years hence before it bestows equally merited praise on its yeomen. In some future age, when the idea of ruling the world according to the whims of a fanciful social conscience has run its bewildering course, and when individual consciences have come again to the fore, then will there be wishful return to some of the good old

ways of yore. And in that new age may another Stevenson be inspired to extol at long last the passing old guard of today. Until that time comes, this heartfelt tribute is paid them by one whose

lasting joy and satisfaction will ever be that the rich and happy years of his professional life were spent at the side of a surgical yeoman.

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THE RELATION OF NEWER DRUGS TO PUBLIC HEALTH

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THE topic assigned to me presents an unusual aspect of pharmacology, though this science, like public health, maintains contact with all other fields of medicine. The recent tragic deaths from the use of diethylene glycol as a solvent for sulfanilamide have emphasized the relation between medicaments and the public health. Indeed the sciences of pharmacology and of public health are allied in type. Both, by their nature, have not developed technics *sui generis*, but use the methods of all the medical sciences directed toward certain goals, defined by the point of view from which each approaches its problems. Pharmacology focuses the separate technics which it uses on the elucidation of the qualitative and quantitative effects of drugs on the animal and plant body and the mechanism of such action as may be produced; similarly public health directs its efforts toward anything that concerns the welfare of our citizenry.

A discussion of the relation of public health to newer drugs necessarily concerns itself with methods of treatment and is a part of the more general topic of the relation of the public-health authorities to the practice of medicine and to the manufacture and dispensing of drugs. Pharmacology in the medical school concerns itself or should concern itself with preparation of the medical student for the use of drugs as tools in his hands for the cure or comfort of the patient. At this period of the student's career the discussion of proprietary remedies, patent medicines and over-the-counter self-medication should be emphasized. Expansion and reiteration of this teaching in the clinical years of the medical school and in the field of preventive medicine is necessary, but is deficient in most schools. After graduation it should become the concern of the legally constituted health authorities to keep the physicians under their jurisdiction continually conscious of these pitfalls of therapeutics. In this the help of graduate schools of medicine should be enlisted. Lack of such teaching increases the burden of the health authorities in their efforts to safeguard the public health. Education, continuous and unremitting, is the only

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practicable method of breaking down the hold that proprietary medicine has upon the medical and lay public.

With all the efforts that have been made to prevent fraud upon the public, such as the activities of the Food and Drug Administration of the United States Department of Agriculture and of the Council on Pharmacy and Chemistry of the American Medical Association, it has been impossible to provide really adequate legislation. The reason for this is that the problem resolves itself into the simple but thorny one of "truth in advertising," together with a revision of our copyright and patent laws. But a start in this direction has certainly been made. If local health officials can be made acutely conscious of the dangers of the use of proprietary names for common substances, and of secret or semi-secret mixtures, they can do much, even under existing legislation, to diminish these evils by appropriate health education among citizens and physicians.

Six points of contact occur to me at which pharmacological advice becomes essential for adequate formulation of recognized public-health activities. These are as follows:

The supervision and adequate testing of new antiseptics and germicides.

An evaluation of the drugs introduced for the treatment or cure of contagious diseases.

The maintenance of high standards, both in manufacture and in dispensing of drugs.

The investigation of the toxic manifestations of drugs, whether exhibited in suicide, homicide or accidental death.

The determination of industrial hazards from chemicals, and investigation of the use of various toxic substances in the treatment of foods.

The control of the use of new drugs or new mixtures which may appear on the market without adequate clinical trial.

It is evident that these six items involve the whole question of the relation of public health to the practice of medicine. The problem reduces itself to the question of how far the governmental health authorities should intrude into the field of practice. In the evolution of our present state departments of public health it is undeniable that the state has invaded the domain of medical practice to